

AFGHANISTAN

Afghanistan's wildlife is surviving conflict

Afghanistan's wildlife is surviving years of conflict, according to a new survey. Asiatic black bears, gray wolves, markhor goats and leopard cats are all continuing to survive despite deforestation, habitat degradation and decades of unrest.

The Wildlife Conservation Society (WCS) team used camera traps, transect surveys, and DNA identification of scat samples in the first wildlife update in the conflict-plagued eastern province of Nuristan since 1977. The surveys, conducted between 2006 and 2009, covered an area of 1 100 km², confirmed the presence of several important species in the region's montane deciduous and coniferous forests, including the first documented sighting of the common palm civet in Afghanistan.

"This ongoing work in Afghanistan by WCS, supported by USAID, ensures the protection of wildlife and has a long-term positive effect on local communities," said Steven Sanderson, WCS President and Chief Executive Officer. "The surveys confirm the presence of globally important species in the area, despite indications of habitat loss and uncontrolled hunting. This highlights the need for targeted conservation programmes to protect forest resources, including wildlife, that provide livelihoods for people."

WCS has had a full-time presence in Afghanistan since 2006 and continues to be the only conservation NGO operating there. It works on community conservation, conservation education, institution building, training, capacity building and wildlife trade issues. [Source: www.wildlifeextra.com, 4 July 2011.] (Please see pages 31–32 for more information about Afghanistan.)

ARGENTINA

Programa de productos forestales no madereros en Argentina

La Dirección de Recursos Forestales Nativos ha encarado una serie de trabajos para evaluar la situación actual y la potencialidad de los productos forestales no madereros (PFNM) en la República Argentina, creándose al efecto el Programa de productos forestales no madereros. La tendencia creciente del mercado de los productos llamados "naturales" que se está produciendo y se ha puesto en evidencia en los últimos años, muestra la necesidad de desarrollar las estructuras productivas y comerciales de estos nuevos productos, haciendo hincapié

en la importancia del manejo sostenible de los mismos, los beneficios que pueden reportar a las comunidades indígenas y locales en pro de la preservación de las masas forestales nativas.

- Los objetivos del Programa son:
- recopilar y sistematizar la información sobre los PFNM de los bosques nativos, con el fin de llevar estadísticas de su producción;
- efectuar su adecuada valoración y valorización como generadores de desarrollo y como herramienta indispensable para el manejo sostenible; e
- incentivar la investigación y el manejo vinculados a los mismos y su apropiada comercialización.

Entre los PFNM se encuentran los siguientes productos alimenticios: plantas silvestres, cultivadas y "semidomesticadas" hierbas aprovechables y sus raíces, tubérculos, bulbos, tallos, hojas, brotes, flores, frutos, semillas, etc. Comestibles para obtener cereales, hortalizas, hongos, grasas y aceites comestibles, especias y aromatizantes, sucedáneos de la sal, edulcorantes, sucedáneos del cuajo, productos para ablandar la carne, bebidas, tónicos e infusiones, productos para apagar la sed, etc. También se denominan PFNM al forraje tales como los alimentos para el ganado y los animales silvestres, inclusive aves, peces e insectos. Productos farmacéuticos como drogas, anestésicos, bálsamos, ungüentos, lociones, purgantes, etc., tanto para uso humano como veterinario. Toxinas, productos aromáticos, productos bioquímicos, fibras, productos ornamentales y animales silvestres. **[Aportación hecha por:** Ing. Cristina Réscio y Lic. Mariana Burghi, Dirección de Bosques, Secretaría de Ambiente y Desarrollo Sustentable de la Nación, San Martín 451, 3° of. 335 (1004) Cap. Fed., Argentina. Fax: +54-(011) 4348-8486; correo electrónico: nomad@ambiente.gob.ar/]



ARMENIA

Armenia Tree Project begins propagation of rare and endangered species

Armenia's Ministry of Nature Protection released its *Red Book of Plants and Animals of the Republic of Armenia* in 2010. "The production of the Red Book is another step forward in the preservation and recovery of the region's biodiversity," writes Aram Harutyunyan, Armenia's Minister of Nature Protection, in the preface to the publication.

There are approximately 3 600 plant species in Armenia, and 123 are endemic or found nowhere else on the planet. According to the authors, these plants may become endangered because of deforestation, the overuse of resources such as water, and development of land which provides habitats for plants and animals, among other factors. The new Red Book includes information about 452 plant and 40 fungus species that are rare, along with information on 223 plant species that are in danger of extinction.

"In response to the concern over the loss of native plants, the Armenia Tree Project (ATP) has a policy of growing only indigenous trees in its three nurseries," explains Samvel Ghandilyan, ATP's Nursery Programme manager. The only exception to this is "naturalized" trees, which were introduced long ago, and have not been observed to have a negative impact on the local ecosystem, but provide an added benefit of food security (fruit and nut trees).

"ATP started to pay special attention to the propagation of endangered species of plants at our nursery in Karin. These include nine trees and shrubs that are registered as rare in the Red Book and two that are in danger of extinction," Ghandilyan says. "These are alpine maple (*Acer trautvetteri*) and halfsphere rose (*Rosa gaenuspherica*)."

"Our nurseries serve the communities of Armenia by providing fruit and decorative trees to more than 900 planting sites," explains Areg Maghakian, ATP Deputy Director of Operations. "As a result of this work, we will soon be able to observe some of the species included in the Red Book in the parks, churches and schools throughout Armenia."

"As part of our mission to re-green Armenia, ATP has a commitment to preserve our precious biodiversity by planting native and endangered trees all over the country," adds Maghakian.

(Source: Armenia Tree Project press release, 19 September 2011.)

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AUSTRALIA

Truffle trouble despite boom crop in 2011

The head of Australia's biggest truffle producer, which is located in Western Australia (WA), says the multimillion dollar industry is facing some serious challenges. WA is the nation's largest producer of truffles, or more precisely, the sleepy southwest hamlet of Manjimup is considered to be the epitome of Australia's truffle industry, churning out about 70 percent of the annual crop.

The Wine and Truffle Company chairman, Alf Salter, told PerthNow that this year's Australian harvest, currently under way nationwide, will yield about 3 500 kg of the deliciously rare fungi. With wholesale prices ranging between AUD\$1 800 and AUD\$2 000/kg, the industry is valued at around AUD\$7 million, although the retail price is currently a staggering AUD\$3 000/kg, with the majority of the annual crop destined for overseas markets.

Mr Salter explained that reporting on the industry was always overwhelmingly positive, when in reality the key challenge, among many facing the industry at present, was establishing, developing and retaining lucrative foreign markets such as France, elsewhere in Europe and even the United States of America.

He said the Australian market only consumed 600–800 kg/year and, considering the national haul may hit 3 500 kg this year, almost 2 tonnes will need to head offshore.

"The reality is that we all thought the world would be clamouring for truffles from the southern hemisphere because we are growing truffles when the northern hemisphere is not," he added. "At this time of year they are growing autumn-summer truffles (*Tuber uncinatum*), and we are growing winter truffles (*T. melanosporum*)."

He indicated that the long-established and highly traditional industry that exists in France and neighbouring European countries meant that the local trufferies (the name given to a truffle orchard)

desperately required a good strategic plan to sell that export quantity successfully to the northern hemisphere. (Source: www.perthnow.com.au, 22 July 2011.)



Pleurotus spp.

BANGLADESH

Potential and emerging economic benefits of mushroom cultivation in the northeastern region of Bangladesh

Mushrooms are one of the fleshy lower-class parasitic fungi with a distinctive fruiting body. They are delicious, nutritious and have medicinal value when cultivated scientifically from seeds. Seven types of mushroom species are common in Bangladesh: *Pleurotus spp.*, *Calocybe indica*, *Volvariella volvacea*, *Lentinus edodes*, *Agaricus spp.*, *Ganoderma lucidum* and *Auricularia polytricha*. Among these, *Pleurotus spp.*, locally called oyster mushroom, is cultivated the most because its cultivation method is very simple and it can be grown within a temperature range of 15–30° C throughout the year.

At present, mushrooms are one of the primary sources of income for the poor, but the rich are also engaged in mushroom cultivation as a subsistence income and as a leisure pursuit in Bangladesh. Mushroom cultivation has opened up a new opportunity to earn additional income for a good number of large to small entrepreneurs in the Sylhet City Corporation (SCC) area of Bangladesh. The greatest advantage for the entrepreneur is that mushroom cultivation does not require a large area: mushrooms can be grown inside a house, even in an unusual place (such as under the bed).

Generally, entrepreneurs follow the poly bag and shelf cultivation method. For 100 spawn packet production the required raw

materials are sawdust (16 kg), wheat bran (8 kg), rice straw (2 kg), CaCO₃ (2 percent) and water (46 percent). After two to three days, pin-head flushes appear. Although up to six flushes may be obtained from each bag, the first three are the most important for commercial production. Mushrooms can be harvested within five to seven days. They should not be watered the day before collection since this decreases their preservation capacity. The packets are kept at rest for one day after harvesting and then rubbed gently by spoon and sprayed. Mushrooms can be collected again after ten to 15 days. Consequently, within three months and from one spawn packet, mushrooms can be collected seven to eight times and produce 200–250 g mushrooms each time.

Fresh spawn or mushrooms and mushroom dry powder are the main products that are traded in markets both locally and throughout the country. Mushroom-based fast food, snacks and drinks (mainly coffee) are the most profitable businesses in the area. Raw material from mushroom residues is used by agrifarmers and fishery farmers as fertilizer in their vegetable gardens or agriculture fields, and in ponds as fish food. Recently, many Chinese restaurants and fast food shops have been serving various delicious and popular mushroom-based food items to their customers. The existing marketing channel of mushroom and mushroom products in SCC reveals that the entrepreneurs and/or processors are more or less dependent on intermediaries. In most cases, the entrepreneurs are not obtaining real prices because of intermediaries or retailers. Sometimes they sell their mushrooms directly to retailers and local consumers or neighbours. When they sell directly to wholesalers they obtain comparatively better prices than through the existing market channel.

The average annual expenditure of the surveyed enterprises was calculated at Tk144 995 (US\$2 071.36), whereas the average annual income from mushrooms, residues and spawn packet sales were about Tk410 874 (US\$5 869.63), Tk15 960 (US\$228) and Tk17 357 (US\$247.96), respectively. However, the average total and net revenue of the surveyed enterprises were calculated at about Tk432 909 (US\$6 184.4) and Tk287 914 (US\$4 113.06) respectively, indicating a profitable production system. The average

benefit-cost ratio of mushroom enterprises was calculated at 2.90 in SCC.

The mushroom enterprises of SCC also faced various problems. The entrepreneurs raised issues such as the lack of financial and technical facilities, storage, preservation, effective marketing facilities and skilled labour. For example, oyster mushrooms cannot be preserved for a long time; sometimes they do not remain fresh for more than one day and consequently buyers are not interested in them. Moreover, the entrepreneurs identified the lack of support in mushroom cultivation by the extension service of the Bangladesh Forest Department. It gave training and encouraged entrepreneurs to cultivate mushrooms, but did not take any further steps to publicize and popularize mushrooms as a food with consumers. Moreover, no NGOs have yet come forward to establish a training centre and obtain a financial loan for mushroom cultivation, given that farmers often face a lack of proper training, as well as technical and financial problems. **(Contributed by:** Most. Jannatul Fardusi and Md. Habibur Rahman, Department of Forestry and Environmental Science, School of Agriculture and Mineral Sciences, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh. E-mail: jfardusi@yahoo.com/)

Wild honey: the terrain in the Sundarbans forests is one of the most treacherous in the region

For generations, poor fishers and villagers around Bangladesh's Sundarbans, the largest mangrove forests in the world, have been collecting wild honey from April to June every year. The annual honey-gathering season brings many expectations in the southwest of the country, as it provides people with much needed extra income. On average, fishers earn US\$70–80 each during the season. They use this extra money to repay their debts or to repair their boats.

Honey gathering may sound like a normal rural occupation but here it is perhaps the most dangerous job in the world. As the fishers move about in search of beehives in the wild, they run the risk of meeting a deadly foe – the Royal Bengal tiger. "During this period, the biggest danger comes from the tigers. They are always on the prowl and they can kill us instantly," says Abdus Salam, an experienced honey gatherer from Burigoalini village, in the district of

Satkhira in the western Sundarbans. "Then there are venomous snakes inside the forests. In these muddy waters, crocodiles lie in waiting," he adds. Tiger attacks happen throughout the year but the number of incidents goes up during the honey-gathering season. At least 80 people are killed by the tigers every year in the Sundarbans.

Fishers normally go from island to island for about three weeks in their creaky boats collecting honey, made by some of the largest and most aggressive bees in the world.

They travel through muddy saltwater rivers, creeks and narrow channels that criss-cross the Sundarbans forests.

With no other jobs on offer, it seems these fishers from the Sundarbans have little option than to carry on with one of the most dangerous professions in the world. *(Source: BBC News, 20 May 2011.)*



Cameroon via Chelsea

The journey south from Cameroon's Douala International Airport to Marguerite Akom's home in one of Africa's largest rain forests takes around seven hours in a 4x4. It was a journey that Akom made this time last year when she came to London to help create a garden at the Chelsea Flower Show and to raise awareness about the threats faced by indigenous people in sub-Saharan Africa.

Akom, 46, who is a pygmy from the Baka community, lives in a *poto poto*, or mud home, in the village of Cyrie. It is very different from the *mongulu*, or leaf house, in which she grew up. Back then, her family lived deep in the forest as hunter-gatherers, until local officials persuaded them to swap their traditional life for a permanent community built along a track.

"It is the work of women to make *mongulus* from small lianas and

Marantaceae leaves," says Akom. "It takes a few hours. We had everything we needed on site. The *poto poto* home can take several months. To be done fast, the owner may have to prepare food for those working and provide the locally brewed alcohol, called *odontol*."

Akom lives there with her six children and her late husband's cousin, plus various visitors who stay with her because her husband was a community leader. "Our staple meal is based on bushmeat and forest spices, tubers and vegetables. Now it is difficult to have bushmeat as there are so many poachers coming from the cities and taking advantage of the logging tracks for easy access to game. Once in a while we eat porcupine, deer, hare, duikers [antelopes], grasscutters, rats, pigs, antelope. It is more and more difficult to have elephant meat, which used to be a ceremonial meat," says Akom.

The Baka tend to hunt old, usually male, animals in order to preserve their food source, unlike poachers, who hunt indiscriminately.

"Life in the forest was very good," says Akom. "When the hunting expedition was very successful we have enough food for a couple of days and sing and dance all night, chanting praises to Enjenqui, the god of the forest."

"Honey remains very precious to us. We have different types of honey collected from the forest. NGOs are now teaching us how to produce honey from our backyard. I still doubt the honey from hives will taste like the forest honey. Honey is very important as it is part of the wedding dowry."

"Our problems are many," says Akom. "We were the first inhabitants of the forest but do not have any rights there. Where we used to live in the forest has now been sold for logging and made into national parks and we are not allowed to go back and live there. This makes me sad."

Mongulu-building is one of the traditional skills that keeps Akom and other women in touch with the forest and, more bizarrely, with the Chelsea Flower Show. Last year, she and two other pygmy women from Cameroon built a *mongulu* at Green & Black's rain forest garden to highlight the fact that hunter-gatherers can be excellent guardians against activities such as illegal logging, if they are allowed to continue their traditional way of life.

The garden won a gold medal and a visit from the Queen, who spent some time talking, through a translator, to Akom.

The meeting with the Queen, and Akom's presence at Chelsea have given her clout in Cameroon. She says: "This visit has empowered me and enabled me to position myself as a community resource person. Chelsea has helped organizations working with us to push forward our efforts to have our land rights recognized".

"Since being at Chelsea we have seen small changes. The council has started extending forest fees and royalties to the Baka. What we want is our informed consent on all initiatives that affect us." (Source: S. Nnah Ndobe, J. Mougou and J. Owen in *The Financial Times*, 20 May 2011.)



Rangers put bushmeat poachers in their sights

In the dense rain forest of eastern Cameroon a team of rangers is on the hunt for poachers. The group is cracking down on the commercial trade of bushmeat, a problem that now extends beyond the country's borders. "It is the main problem we face, but with time we will succeed," said Deng Deng National Park ranger, Julius Tanyi.

The bushmeat trade in Cameroon is illegal, but enforcement is low and profits are high. Animals caught in the rain forest by poachers are often smuggled by train from the rural areas to the cities. But the threat to wildlife is becoming greater as the meat is sent further afield.

A study published last year estimated that each week around 5 tonnes of illegal African bushmeat is smuggled through Paris Charles de Gaulle airport in France (please see page 20).

The rangers scour the forest for clues left by poachers looking to turn threatened species into bushmeat. "On these types of expeditions we look for bullets, we look for traps that people set and animals too," Tanyi explained. "We see if they [animals] are curious or if they are still running away from us – if they run away from us, it means they are threatened."

The meat can be found for sale at a market close to the park. Roger Fotso, from the Wildlife Conservation Society, says most of the meat for sale comes from the rain forest he is trying to protect. As soon as he arrives at the market a group of meat sellers runs away with everything. But Fotso still finds animals such as monkeys for sale there. "Monkeys reproduce really slowly and it is really serious to have people taking away that many of them," Fotso explained.

In local markets, bushmeat can fetch between US\$10–15 but in urban centres such as the capital Yaoundé, sellers can charge double. And, as Cameroon continues to urbanize, the problem is getting worse. Fotso says there is a new breed of consumer in the city who buys the meat for prestige instead of sustenance. "It is quite expensive, so it is more about luxury than really having the need for that bushmeat," he said. "This is taking away from the people in the rural areas where bushmeat is for local consumption but this is commercial."

"Very often people tend to point the finger at the rural poor, but they are not the problem. The problem is the middlemen who come from the cities with money, with cartridges, with guns and professional hunters," Fotso continued. (Source: CNN, 17 August 2011.)



The economic value of NTFPs

The economic wealth of Canada's forests has long been measured in terms of the trees used to make conventional forest products, notably softwood lumber, newsprint and wood pulp. In fact, numerous forest-derived resources make a significant contribution to many rural communities and households across Canada through sales revenue and seasonal employment.

The range of NTFPs is very diverse and includes those that are: (i) gathered from the wild, in either timber-productive or non-timber-productive forests and lands (e.g. mushrooms); (ii) produced in forests under varying levels of management intensity (e.g. maple syrup); and (iii) produced in agroforestry systems (e.g. forest species such as wild ginseng planted as field crops).

The types of NTFPs that are found in Canada consist of the following.

- *Forest-based foods.* These include maple syrup, wild blueberries, wild

mushrooms and native understory plants such as wild ginseng and fiddleheads. By-products of the forest industry can also be converted into prepared foods (e.g. lignin, a natural constituent of wood, which is used to make artificial vanilla).

- *Ornamental products from the forest.* These include horticultural species bred from wild species (such as cedars and maples); and decorative or artistic products such as Christmas trees and wreaths, fresh or dried floral greenery (e.g. salal), and speciality wood products and carvings.
- *Forest plant extracts used to make pharmaceuticals and personal care products.* These include paclitaxel (commonly known by the trade name Taxol®), which is most often extracted from yews such as the Canada yew (ground hemlock). Taxol is widely used as a chemotherapy agent. Other forest plant extracts, particularly conifer essential oils, are used in a wide range of creams and other personal care products.

Maple products represent a \$354 million dollar industry in Canada. In 2009, the country produced over 41 million litres of maple products, including maple syrup. Canada produces 85 percent of the world's maple syrup.

More than 1.8 million Christmas trees were sold in Canada's domestic and export markets in 2009. This seasonal industry is worth about \$39 million annually.

Furthermore, Canada is the world's largest producer of wild (low-bush) blueberries. It exported \$127 million of fresh and frozen berries in 2009. Most wild blueberries are planted commercially in Quebec and the Atlantic provinces as field crops.

Research by the Canadian Forest Service (CFS) on opportunities related to NTFPs has focused on treatments to increase the levels of paclitaxel and related compounds (taxanes) in Canada yew before harvesting. New methods to extract taxanes from Canada yew have also been researched.

As part of Forest 2020, CFS also conducted research on other wood perennials that have medical uses. These species include larch, willow and hawthorn. Another focus of CFS research has been on the sustainable harvest and cultivation of forest-based foods, such as mushrooms and several wild berries. (Source: Natural Resources Canada, 20 September 2011.)

A forest full of opportunities

There are many examples of NTFPs among the more than 860 woodlot licences around the province of British Columbia (BC). A woodlot licence outside Quesnel taps birch and alder trees for producing syrup and fudge, while a woodlot near Campbell River taps big-leaf sugar maple trees. A Chilliwack nursery selling only natural plants finds its vine maple and salmonberry shoots from the neighbouring woodlot licence. Another woodlot is used as a source for bows for making wreaths and salal for floral decorating.

These are but a few examples. Beyond syrup, birch trees can be a source of toffee, marinades, ice cream toppings, sauces, basketry, weaving, paper from bark, bowls, platters, cutlery, serving utensils, twig furniture, canoes, paddles, shoe insoles, sleds, snowshoes, oils for cosmetics, medicines, sweeteners (e.g. xylitol), and the list goes on.

One example of a forest managed for more than timber lies outside the village of Kaslo. The Kootenay Agroforestry Society holds this woodlot licence and Peter McAllister manages the multitude of resources in addition to trees. He harvests and processes culinary and medicinal mushrooms for sale and teaches workshops on behalf of the society about "alternative foods" and NTFPs. Peter refers to the many NTFPs as GFTF – "gifts from the forest".

"We have grown a lot of food on underutilized wood," McAllister said, "mainly on deciduous species." Woodlots provide many other foods in addition to berries. Pine mushrooms, for example, are harvested and sold to buyers in Japan. Popular shiitake mushrooms are gathered and then dried using a method that causes them to secrete maximum amounts of precious vitamin D.

McAllister said the society's workshops have introduced subjects and skills such as dyeing natural fabrics with lichens; pine needle and cedar basket weaving; culinary and medicinal mushroom growing; native plants, yew bow-making and edible and poisonous mushroom identification.

Opportunities abound for the many NTFPs that have yet to be developed. The Centre for Livelihoods and Ecology (CLE) at Royal Roads University is working to provide information to understand the potential of these species more fully. [Source: Barriere Star Journal in www.bclocalnews.com [Canada], 25 July 2011.]

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La découverte d'un nouveau produit forestier non ligneux pour la commercialisation – les amandes de *Ricinodendron heudelotii*

La région de la Lobaye au sud-ouest de la République centrafricaine contient d'importants peuplements d'essessang (*Ricinodendron heudelotii*), dont les amandes sont inexploitées du fait d'une méconnaissance de la part des communautés locales des potentialités du marché en Afrique centrale et de l'Ouest comme des techniques de valorisation.

L'essessang, appelé nzoko en ngbaka et bomboko en issongo, est un arbre de la famille des euphorbiacées présent dans les forêts secondaires avec lumière abondante; il peut atteindre 40 m de hauteur et jusqu'à 120 cm de diamètre. La plante est protégée lors des défrichements agricoles en raison de ses multiples usages. En effet, son bois est employé en menuiserie et son écorce comme produit médicinal, et son ombrage est apprécié; il sert également d'arbre hôte pour des chenilles et des champignons comestibles (voir Eyog Matig, O. *et al.* 2006. *Les fruitiers forestiers comestibles du Cameroun*. IPGRI).

Les fruits d'essessang contribuent à une nourriture équilibrée car ils fournissent des graines oléagineuses riches en lipides, glucides, protéines et calcium et renferment entre 49 et 63 pour cent d'huile, qui peut être consommée directement ou utilisée en pharmacie. Les amandes transformées en poudre entrent dans la préparation des poissons braisés et des sauces, car elles servent à épaissir et sont appréciées pour leur goût. La potentialité économique de ce produit est largement ignorée par les populations de la Lobaye, alors même qu'un sac de 50 kg d'amandes se vend aujourd'hui entre 120 000 et 150 000 francs CFA (260-326 dollars EU) sur le marché camerounais.

C'est à ce titre que, à travers son projet régional sur les produits forestiers non ligneux, la FAO a programmé une formation dans les villages pour



Ricinodendron heudelotii

développer les capacités locales relatives aux étapes de transformation des amandes d'essessang. Le processus comprend les étapes suivantes: la collecte, la fermentation visant à faciliter la pourriture de la pulpe, le lavage et la préparation sur le feu afin de fragiliser la coque, le concassage et, enfin, le séchage permettant de conserver les amandes pendant plusieurs années. La formation se propose de montrer les avantages de la fermentation accélérée en sachet polyéthylène, qui ne dure que quatre jours, comparée à la fermentation à l'air libre, qui requiert deux semaines.

Par ailleurs, des acheteurs grossistes en provenance du Cameroun seront mobilisés et des ventes groupées organisées, ce qui devrait permettre aux populations locales d'obtenir un revenu minimum de 50 000 francs CFA par sac de 50 kg vendu (109 dollars EU). Les autorités nationales et locales seront sensibilisées sur ces activités de développement de la filière essessang, de façon à ce qu'elles assurent leur soutien administratif à cet égard.

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(Please see page 59 for more information on this project.)



Exportaciones Forestales de Productos no Madereros 2010

Las "Exportaciones Forestales de Productos no Madereros 2010" comprende el último boletín que alude a las exportaciones chilenas más recientes incluyendo los países de destino, así como

las industrias de mayor producción de los productos forestales no madereros.

En este número se hace referencia entre los PFNM más destacados, a las hojas de boldo como planta medicinal utilizada en el mundo y menciona algunas empresas involucradas en la comercialización del mismo. También se describe el bambú del género *Chasquea* así como los segmentos de mercado actual y sus potenciales de uso. Ambos productos se analizan teniendo en cuenta los antecedentes técnicos y la recopilación bibliográfica especializada.

(Fuente: Grupo de Información y Mercado, Sede metropolitana de Chile, Instituto Forestal [INFOR].)

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Los productos forestales no madereros (PFNM) de Costa Rica

Un reciente estudio sobre un manejo tradicional de plantas de Costa Rica se divide en seis capítulos, a saber:

1. Manejo tradicional de lianas y otras fibras vegetales. Los recursos del bosque tropical son productores de diferentes tipos de fibras. De acuerdo con la estructura y resistencia de los tejidos, las fibras se clasifican en: (i) fibras suaves: provienen del floema secundario, como sucede con los géneros *Corchorus*, *Sida*, *Abutilom*, *Apeibay* *Cecropia*; y (ii) fibras duras: conformadas por células de mayor resistencia, presentes en los tejidos internos de las plantas; algunos ejemplos son los géneros *Agave*, *Furcraea* y *Ananas*.



Agave

No es fácil determinar hasta donde es sostenible el manejo de las fibras, ya que en su análisis se mezclan elementos biológicos, culturales y de mercado. La investigación no ha hecho hincapié en el aprovechamiento, limitándose éste al aprovechamiento de la fibra para uso utilitario, por lo tanto, al incentivarse el aprovechamiento con otras finalidades, la situación entra en conflicto con el concepto de sostenibilidad, esto es lo que sucede con el ratán.

2. Etnobotánica y etnofarmacología, disciplinas de valor en la domesticación de plantas. Es importante rescatar el conocimiento que aportan ambas disciplinas sobre elementos de manejo tradicional, ecológicos, de protección y domesticación para la evaluación técnica de los recursos. La importancia que ha tomado la etnobotánica en las últimas décadas, es producto del interés de diferentes organismos por buscar alternativas para la conservación y el desarrollo de la biodiversidad tropical.

3. Extractivismo y domesticación de plantas medicinales nativas. Actualmente, el extractivismo continúa en el Petén pero en otras regiones de Guatemala y en países como México, Honduras y Costa Rica se ha promovido el proceso de domesticación a través de su cultivo en condiciones de mayor avance tecnológico. A pesar de la preocupación de los expertos, organismos internacionales y público en general sobre el futuro de este ecosistema, las consecuencias del deterioro de los bosques tropicales húmedos apenas empieza a dilucidarse.

La biodiversidad vegetal útil ha constituido desde la colonia hasta la actualidad un bien codiciado, tanto en el ámbito local como internacional. Su aprovechamiento indiscriminado se ha denominado "extractivismo" y "minería forestal". El extractivismo campesino o el de comunidades indígenas más aculturizadas tiene en general un fuerte componente de comercialización, centrándose para tal fin en un menor número de productos. La presión del mercado a través de su gran demanda y elevados precios para bienes escasos puede estimular un cambio en las técnicas de extracción y una sobreexplotación por encima de la tasa de renovación del recurso haciendo, a largo plazo, la actividad insostenible.

4. Biodiversidad y manejo sustentable de plantas aromáticas. Es muy importante poder conocer los procedimientos racionales que aplican estas culturas y que les han permitido explotar las riquezas naturales de sus entornos sin amenazar sus subsistencias. Lógicamente las técnicas difieren mucho según la región y según las circunstancias sociales, geográficas y climáticas. Se exponen a continuación algunos ejemplos de cómo el recurso genético natural puede ser explotado, sin ejercer el simple extractivismo, y garantizando su permanencia y diversidad natural. Básicamente son dos los caminos que se pueden seguir: la domesticación de la especie para su manejo agrícola, o la explotación sustentable de las poblaciones naturales.

5. Aprovechamiento de los PFNM del bosque tropical. El aprovechamiento de los diferentes PFNM por parte de comunidades locales no ha sido objeto de estudio, específicamente lo relacionado con el aprovechamiento y generación de ingresos de las familias locales. No existen estadísticas de mercado local. Otro problema es la capacidad técnica, referida a la falta de conocimiento biológico. Este problema ocasiona que no se conozcan cuales son los productos que provienen del bosque y cuales de cultivos agrícolas convencionales. Finalmente, debido a normas internacionales que restringen el comercio internacional de flora y fauna silvestre, se evaden las normativas aduaneras, precisamente para lograr las exportaciones.

6. Comercio de los PFNM del bosque en América Latina. Es evidente que el comercio de plantas medicinales está en aumento en la región latinoamericana y en el mundo. La prioridad en la región latinoamericana radica en caracterizar el estado de desarrollo de las plantas medicinales. Existe un mercado regional importante que debe fortalecerse con medidas políticas. El mercado internacional debe mejorar los precios de la materia prima y/o promover la producción de extractos.

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DEMOCRATIC REPUBLIC OF THE CONGO

Plantes médicinales de traditions: province de l'Equateur

A recent book (*Plantes médicinales de traditions: province de l'Equateur*, R.D. Congo) contains a wealth of information on local medicinal uses, including the different plant parts used and the way of preparation of the medicine, of more than 350 medicinal plants of the Equator province in the Democratic Republic of the Congo (DR Congo). All this information was documented by a team of 25 research workers from the Institut de recherche en sciences de la santé, who held interviews with 537 traditional healers belonging to 51 tribes in 255 villages and four towns throughout the province. In addition, each medicinal plant has a brief description, some information on its ecology and a list of vernacular and French names. Vernacular names have been noted in more than 50 languages in total, and at the back of the book these names have been indexed by language and also alphabetically. Where possible, the medicinal plants are illustrated, adding more value to the book.

This publication can be considered as one of the steps towards a complete pharmacopoeia of DR Congo. There are several other books and articles on the medicinal plants in DR Congo, but most of them focus on specific diseases or are much less detailed in their uses. A database with the documented information on the medicinal plants of DR Congo, with samples stored in a herbarium for verification, would be of immense help to a diverse group of users, including traditional healers, students and researchers, pharmacists, chemists, biologists, rural development agencies, conservation agencies and even private enterprises.

More information concerning species that are useful for cultivation in home gardens would also be welcome, so that people can have plants close at hand to treat common



ailments such as fever, malaria, diarrhoea and skin problems. Planting local medicinal plants in home gardens helps in the domestication process of some species, and at the same time protects wild populations from unsustainable harvesting.

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(Please see page 69 for more information.)

ETHIOPIA

Wild plants and contributions to food and health-care security

Wild food consumption is common in rural areas of Ethiopia. Wild plants are also important as food supplements and a means of survival during times of drought and famine. Wild food plants are of special nutritional importance as sources of vitamins, minerals, trace elements, dietary fibre and protein. They contribute to improved local food security and income, and help overcome a number of health problems associated with nutrient deficiency. In parts of southern Ethiopia, the consumption of wild food plants is one of the most important local survival strategies. In recent times, their consumption and use have intensified as a result of repeated climatic shocks hampering agricultural production.

Nutraceuticals – foods or naturally occurring food supplements with beneficial effects on human and livestock health – play an important role in health and nutritional security in Ethiopia. Over 80 percent of medicines for primary health care in the country are in fact derived from plant products. Among the illnesses that are most often treated with medicinal plants are internal parasites, skin ailments, tapeworm infections, snake poisons, dog bites and liver diseases.

Indigenous fruits and seeds of trees and shrubs are commonly consumed fresh in many parts of Ethiopia by children, herders and hunters. This helps to maintain their nutritional and medicinal content and value. Wild fruits in particular contribute greatly to the nutrition and health security of rural people because of the many major elements such as proteins, vitamins and minerals they possess.

Nevertheless, research on sustainable utilization of these edible and medicinal wild plants is inadequate in Ethiopia. Consequently, an ethnobotanical study aiming to identify key nutraceutical wild plants and document associated indigenous knowledge was conducted in six study sites of semi-arid east Shewa, Ethiopia. The study analysed local use and management practices and implications for the food and health security of people living in semi-arid areas. Twenty nutraceutical plants were identified: 35 percent shrubs, 6 percent trees and 5 percent lianas for human food, livestock feed and medicine. Results showed that local people have diverse indigenous knowledge on the use and management of nutraceuticals. Transhumant pastoralists used 95 percent nutraceuticals and settled farmers 65 percent. Twenty nutraceutical wild plants were used to treat 11 human and nine livestock ailments/health problems. There are a large number of nutraceutical plants that can be used for the nutrition and health care of people in semi-arid areas. Since transhumant pastoralists are more intimate with nature and more knowledgeable, they have been able to adapt to climatic changes by using locally available nutraceuticals for themselves and their livestock. Climate change adaptation strategies can be built on this indigenous knowledge for the sustainable use of nutraceuticals for nutrition and health security.

The study revealed, however, that the clearance of vegetation for crop production is threatening the survival of wild plants and hence undermining the health, food and financial security of local people. Moreover, the environmentally friendly resource use and conservation practices over generations of the transhumant pastoralists of east Shewa are also eroding. In short, nutraceutical wild plants are declining with the natural vegetation of the area. There is thus an urgent need for the sustainable utilization, documentation and management of these wild edible plants. [Source: D.H. Feysa, J.T. Njoka, M.M. Nyangito and Z. Asfaw, 2011. Nutraceutical wild plants of semiarid east Shewa, Ethiopia. Contributions to food and healthcare security of the semiarid people. *J. Forestry*, 5(1): 1–16.]

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GEORGIA

The Georgian Society of Nature Friends

The Georgian Society of Nature Friends (GSNF) is an organization that serves to educate the community about our natural environment and protect it. We have a strategy of raising public environmental awareness and institutional development of community and organizational networks for the creation of the necessary actions related to environmental conservation.

In support of these strategies, in October this year the organization plans to conduct a three-day training programme for 17 employees and volunteers covering areas of fundraising, project writing, public communication and organizational capacity development. Participants will learn useful and important information on the above issues, and will then be able to assist their local communities in the implementation of environmental activities, as well as raise awareness of environmental issues in Georgia.



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HAITI

Bamboo project

The Foré Bamboo initiative is partnering with Haitian community organizations to plant and maintain non-invasive construction-grade bamboo. This bamboo can then be used to relieve the housing and environmental crises in Haiti.

On the World Bamboo Organization's first trip to Haiti, two huge problems were very striking: the urgent need for housing and the barren, deforested hillsides. In an effort to contribute to Haiti's long-term sustainable development, this bamboo

project, led by Foré Bamboo, aims to tackle both of these massive problems head on. So far, it has planted over 15 000 ft² (1 393.5 m²) of bamboo nursery with four Haitian community partner organizations, and is planning to expand ambitiously in the coming year.

The goal is to develop bamboo as a multipurpose crop to build disaster-resistant houses, slow down deforestation and erosion, and develop the local economy. The strategy is to partner with local Haitian organizations that can provide land and social capital, and help them with the technicalities of growing bamboo and building safe houses. All the profits, both economic and environmental, go directly to the Haitians in the community.

Why bamboo? Bamboo is a phenomenal construction material. Over 1.5 million Haitians are in desperate need of shelter. Bamboo is a cheap, sustainable and locally sourced building material that can be used to build earthquake- and hurricane-resistant houses.

Bamboo will also help the economy. Because it is incredibly versatile, it can increase farmers' incomes and create jobs in construction, agriculture and energy, etc. This economic incentive is incredibly important to ensure that the project is sustainable in the long term.

Furthermore, bamboo is extremely beneficial to the environment. Erosion, deforestation and mass extinction are all enormous problems in Haiti. Bamboo reduces soil erosion, provides a multitude of environmental services and takes the stress off natural forests, protecting the threatened species within. It is one of the best plants for carbon sequestration, which is extremely important as the impacts of climate change become more catastrophic. [Source: World Bamboo Organization, 11 July 2011.]

INDIA

Medicinal plants to get "good quality" tag

India's wonder plants with medicinal properties will now come with a special "good quality" tag with the Government putting in place a voluntary certification scheme for medicinal plant produce based on good agricultural and field collection practices. This, it said, will enhance confidence in the quality of India's medicinal plant produce and make good-quality raw material available to the Ayurvedic and herbal drugs industry.

Under the scheme, launched jointly by the National Medicinal Plants Board and the Quality Council of India, any producer/collector or group of producers/collectors can obtain certification from a designated certification body and will be under its regular surveillance. [Source: *The Times of India*, 6 June 2011.]

Campaign to make India the land of spice Veda

India, which is known as the land of Ayurveda, might soon acquire another distinction globally as the "land of spice Veda" if the proposed Spices Board campaign yields the targeted impact.

The Spices Board is working on a campaign focusing on the health benefits of spices as part of efforts to promote exports, the Board Chairman, Dr A. Jayathilak, said during an interaction programme with *The Times of India* journalists here recently.

Spice exports from India doubled from US\$0.52 billion in 2005 to US\$1.17 billion in 2010. In 2010-11, they had shot up to US\$1.20 billion and the target is to jack exports up to US\$10 billion in 2025, he said.

The elimination of pesticide content will be a prerequisite for promotion of exports and the Spices Board is launching various initiatives to ensure that Indian spices are free from pesticide residue, the Chairman added. [Source: *The Times of India*, 20 September 2011.]

Contribution of NTFPs to the rural economy in Chhattisgarh

A recent research-based study was conducted in Chhattisgarh (CG) state with the overall objective of understanding the status of NTFPs and their contribution to the rural economy. Detailed surveys and interviews were carried out at the household level in the six forested districts selected in north Surguja, Manendragarh, Dharamjaigarh, Kawardha, east Bhanupratappur and Jagdalpur. In each district, ten representative villages were selected for an intensive survey and in each selected village, 20 households belonging to different socio-economic strata were surveyed. Thus, a total of 1 200 households were interviewed/surveyed from 60 selected sample villages.

The state of Chhattisgarh has a total forest area of 59 772 km², which is about 44 percent of the total area; it also has the highest percentage (31.8 percent) of

Trade of NTFPs in Chhattisgarh state

Category of NWFP	Major component	Total species	Trade in crores (Rs)
Nationalized	<i>tendu</i> leaves, sal seed, <i>narra</i> and gums, <i>kullu</i> , <i>dhawda</i> , <i>babul</i> , <i>khair</i>	7	375
Non-nationalized, non-medicinal	<i>kusum</i> , <i>palash</i> , <i>mahul</i> , <i>karanj</i> , <i>thikhur</i> , <i>baichandi</i> , <i>imli</i> , <i>mahua</i> , <i>lac</i> , <i>mahul</i> leaves, <i>chirinji</i> , etc.	30	275
Non-nationalized, medicinal	honey, <i>bel</i> , <i>kalijiri</i> , <i>dhavai</i> , <i>shatawar</i> , <i>nagarmotha</i> , <i>baheera</i> , <i>malkangani</i> , <i>bhilawa</i> , <i>marodfali</i> , <i>baibaring</i> , <i>vanjeera</i> , <i>kalmegh</i> , <i>aonla</i>	42	50
Total		79	700

Source: CG MFP Federation; US\$1= Rs48 at time of study; 1 crore = 10 million rupees.

scheduled tribes (STs), i.e. 20.83 million. The Government considers that unemployment in tribal areas could be addressed by central government through NTFP-based activities. There is tremendous scope and relevance in the 2006 Forest Rights Act and the NTFP access benefit, but there is a long way to go as far as the implementation of the Act is concerned.

Income from NTFPs goes towards investment in agriculture, serves as a risk-hedging instrument in crop loss years, and meets emergency health requirements and major consumption expenditures such as clothes and festivals.

Over 625 NTFP species are reported to be available in CG forests, with an annual potential of around Rs1 000 crore. The CG MFP (Minor Forest Products) Federation estimates the trade in NTFPs at around Rs700 crore. Assuming a simple correlation with proportionate forest area and tribal population as per all India NTFP employment potential figures, it is estimated that at least 100 million person days of employment are generated by NTFP collection and trade in Chhattisgarh. The major NTFPs available and collected in the state are *tendu* leaves, *narra*, *palash* flower and seed, *mahua* flower and seed, sal seed, *kusum* seed, mango kernel, *babul* gum, neem seed and *charota* seed. Over 200 species of medicinal, aromatic and dye plants are found in abundance.

The study shows that 73.9 percent of the sample population was found to be below the poverty line. In all villages, local people gathered various NTFPs for commercial purposes. Of the total number of households studied, 31.1 percent gathered up to 100 kg of NTFPs, 29.8 percent gathered 100–300 kg, 27.8 percent gathered 300–1 000 kg, while the

remaining 11.3 percent households collected more than 1 000 kg of NTFPs over the last year. This indicates that the quantity of NTFPs collected for sale varied per household and location of village.

Household NTFP collection varied, from 80 to 166 days in Jagdalpur, Dharmjaigarh and north Surguja forest divisions. In CS, NTFP collection (excluding fuelwood and fodder) is the second largest contributor (average 23 percent) to the household economy of the sample population after the agriculture sector (44 percent). The average time spent by rural households on NTFP collection is around five hours every day. The average monetary value of NTFPs gathered overall by the sampled households is Rs8 142 (approximately US\$1 700), whereas in tribal areas the highest was Rs9 358 (approximately US\$1 950) annually, which shows a higher dependence on NTFPs by tribal people.

The average distance travelled to collect NTFPs is 4.3 km. Women’s participation in NTFP collection was found to be higher than men’s in households of all social categories. Women gather NTFPs alone as well as with male members and children of



the family. At household level, people do not have separate facilities to store the NTFPs collected from the forests. Generally, NTFP items are stored in the traditional way, using earthen pots, sacks, containers and bamboo baskets.

The 73rd Constitutional Amendment Act in India and thereby enactment of PESA (Panchayat Extension to Scheduled Areas Act 1996), have bestowed ownership of NTFPs to Gram Sabhas (village councils). As a result, the state Forest Department decided that all net receipts from *tendu* leaves (used for wrapping country cigarettes) should be distributed to primary cooperative societies for the primary collectors of *tendu* leaves. Since 2008, the profit earned from the trade of nationalized NTFPs is distributed by the Department in the following manner: 80 percent as incentive wages to the collector; 15 percent used for collection, sale and value addition of non-nationalized NTFPs; and 5 percent for the temporary reimbursement of losses (if any).

The pricing mechanism practised by the Federation is more or less based on current prevalent market rates of NTFPs, which are decided by the big traders. The small processing units have been developed and handed over to local self-help groups. At the time of this study (2010), 65 processing/production centres (including 15 for lac production and one for processing; four for honey collection; 11 for collection of raw MFPs; nine for *mahul* leaf processing and for *aonla* processing; three for making herbal products; two for processing *chirinji*; one for cashew nut processing; three for oilseed processing; five for tamarind processing; two for collection of herbal medicines; and one for processing herbal foods) had been established in various parts of the state with financial support of Rs20 lakh from the European Commission for each processing/production unit. Innovative programmes adopted by the Forest Department with its funding include: training for non-destructive harvesting; a herbal processing unit; introduction of a minimum support price for selected NTFPs; and establishment of an organic certification body. **(Contributed by:** Professor P. Bhattacharya, NRM, Dean, University School of Environment Management, GGS Indraprastha University, Block-A, Sector 16 C, Dwarka, New Delhi 110075, India. E-mail: prodyutbhattacharya@yahoo.com/)



ITALY

Unusual and local beers

The latest Italian craft beers are inspired by local ingredients and require the same attention generally reserved for quality wine. In Italy, grapevines cast long shadows. But brewers embrace them, infusing their beer with the complex flavours of local bounty such as chestnuts and thyme, as well as grapes, of course. Plus, while a ginseng ale would never fly in, say, Germany, Italian breweries can play freely. "We do not have a heavy beer culture on our shoulders, so we are free to experiment," says Leonardo Di Vincenzo of Birra del Borgo, one of only about 280 breweries in the country. New-wave Italian restaurants love the beer because it is typically lighter and less sweet than many high-end American brews. [Source: *Wall Street Journal*, 21 May 2011.]



JAPAN

Sustainable sourcing sought for wild plant industry

TRAFFIC has launched a new project to promote sustainable production and consumption of wild medicinal and aromatic plants traditionally used in Japan.

"Wild plants are hugely important in Japanese culture for a variety of purposes, including traditional 'Kampo' medicine, as traditional 'Kodo' incense, in cosmetics and as ornaments and, more recently, they have been imported as ingredients in herbal teas and as cooking spices," said Kahoru Kanari of TRAFFIC East Asia's office in Japan. "As environmental awareness and the demand for a healthy lifestyle grow among Japanese consumers, it is now more important than ever to promote sustainable use of these resources."

The new project, "Saving Asian medicinal and aromatic plant species through involvement of the Japanese private sector", will help Japanese companies to introduce responsible production and sourcing practices for wild plant ingredients. At the same time, consumers will be encouraged to seek sustainably sourced products.

According to *The State of Wildlife Trade in Japan*, a TRAFFIC report, in 2007 Japan was the fourth largest importer (in terms of value) of medicinal and aromatic plants

used in the pharmaceutical industry – some US\$118 million.

"Worldwide, many wild plant species are threatened through overexploitation, and Japan is a major consumer of wild plant resources," said Anastasiya Timoshyna, TRAFFIC's programme leader for medicinal and aromatic plants. "A long-term commitment by Japanese industry to adopt sustainable sourcing practices would have a significant impact on the conservation of medicinal plants in the wild."

The project will encourage implementation of the international best practices for sustainable plant harvesting laid down in the FairWild Standard, and is supported by the Keidanren Nature Conservation Fund (KNCF) as part of TRAFFIC's work on medicinal and aromatic plants. [Source: TRAFFIC Web site, 23 June 2011.]

Beekeeping in Japan hit by disaster

As a result of the earthquake and tsunami in Japan on 11 March 2011, damage caused to the Fukushima nuclear power plant has led to a 20-km evacuation zone around the plant. The exclusion of traffic and the breakdown in petrol supplies have prevented many beekeepers from gaining access to their bees.

Mr Mizuhisa Fujiwara is the third generation of a beekeeping family in Akita Prefecture and is a regular supplier of honey to Tamagawa University bookstore. Mr Fujiwara's colonies are currently in several out-apiaries for overwintering and ready to start up early for fruit-tree pollination including apple, cherry and peach. A major nectar flow from *Robinia pseudoacacia* will begin in late May. Many beekeepers want to know what to do with their bees as the beekeeping season begins. Japan's Beekeepers' Association (JBA) has received many enquiries from members, while the Ministry of Agriculture, Forestry and Fisheries (MAFF) had nothing to refer to on honey bees and radiation when this serious incident occurred.

Professor Jun Nakamura, Secretary-General of the Asian Apicultural Association (AAA), at the Honeybee Science Research Center at Tamagawa University was consulted by both MAFF and JBA on this unexpected situation. With a scintillation counter he visited Iwaki city to meet Mr Fujiwara and check his colonies.

Professor Nakamura reports that the Livestock Hygiene Service Center of south Soma is helping beekeepers to evacuate their colonies and providing them with

disease-free certificates on site. JBA understands that there are still 1 500 colonies within the power plant evacuation zone. [Source: *Bees for Development Journal*, 99, June 2011.]

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LAO PEOPLE'S
DEMOCRATIC REPUBLIC**FAO celebrates first cricket harvest in the Lao People's Democratic Republic**

Within the framework of the project "Sustainable insect farming and harvesting for better nutrition, improved food security and household income generation," which kicked off in January 2011, FAO began introducing small-scale cricket farming at the School for Gifted and Ethnic Students, National University of Laos (NUoL).

The pilot project held "Saep E Li [very tasty] – the Celebration of the first cricket harvesting" last Saturday, gathering between 300 and 400 students from different schools at the School for Gifted and Ethnic Students, Lao news agency reported. This event provided an opportunity for the students involved in the pilot activity to share and exchange their experiences on cricket farming. The event involved insect cooking demonstrations, tasting sessions of free edible insects and lessons on insect breeding and the nutritional benefits of insects.

FAO, together with the Faculty of Agriculture, NUoL, has thus far worked with four different species of insects: the house cricket, the mealworm, the palm weevil (which is bred) and the weaver ant (semi-bred in trees).

For the project, students aged 16 to 18 years were taught the techniques of cricket breeding at their schools. They were also taught about the nutritional benefits of

insects, especially as complementary food in the Lao diet. [Source: BERNAMA [Malaysian National News Agency], 30 May 2011.]

Deux séries de timbres en l'honneur de la diversité des produits forestiers non ligneux dans la République démocratique populaire lao

Les produits forestiers non ligneux (PFNL) de la République démocratique populaire lao ont été mis à l'honneur par deux séries de timbres, à l'occasion de l'Année internationale de la biodiversité 2010 et de l'Année internationale des forêts 2011.

Une contribution du secteur privé forestier

Ces deux séries de timbres sont le fruit d'un partenariat entre le Ministère des postes et télécommunications, le Ministère de l'agriculture et des forêts et Agroforex Company. Cette société, établie en République démocratique populaire lao depuis 20 ans, est spécialisée dans la production et la valorisation sur le marché international des PFNL issus d'une gestion durable des écosystèmes forestiers. Les partenaires de la société en aval sont les leaders mondiaux de l'industrie aromatique et pharmaceutique.

Un double hommage: à l'action des hommes sur la préservation de la biodiversité, et à la place de la forêt dans la vie des hommes

En valorisant les produits naturels forestiers, la société reconnaît la richesse des connaissances traditionnelles des communautés forestières, grâce auxquelles ces produits et les essences forestières dont ils sont issus ont pu être protégés et conservés depuis des décennies. Inversement, l'existence et la valorisation de ces produits procurent aux familles rurales soit des usages (alimentaires, médicaux, techniques, etc.), soit, s'ils sont commercialisés, un revenu monétaire complémentaire à leur économie vivrière. Les deux séries de timbres portent ce double message.

Confirmer à la population lao l'usage industriel de ces produits naturels, et aux industries internationales l'origine lao de ces matières premières

Ces deux séries de timbres s'adressent tant à un public national qu'international : les Lao découvrent les usages (bien vivants!) de ces produits traditionnels dans l'industrie aromatique et pharmaceutique. Ces industries, pour leur part, se voient confirmer l'origine géographique de ces matières premières qu'elles intègrent dans leurs formules au quotidien.

Douze produits à l'honneur

La collection de timbres émise en 2010 se décline en deux séries : une série de plantes aromatiques (le bois d'agar *Aquilaria crassna*, la verveine exotique *Litsea cubeba* et le gingembre rouge *Zingiber sp.*) et une série de plantes pharmaceutiques (l'aliboufier à benjoin *Styrax tonkinensis*, la barbigflore *Orthosiphon stamineus* et la noix vomique *Strychnos nux vomica*).

PLANTES DE LA RÉPUBLIQUE DÉMOCRATIQUE POPULAIRE LAO À USAGES INDUSTRIELS AROMATIQUES ET PHARMACEUTIQUES



L'année 2010 a été proclamée Année internationale de la biodiversité par les Nations Unies. A cette occasion, et après 18 ans de travaux sur la biodiversité végétale en République démocratique populaire lao, Agroforex Company a le plaisir de s'associer à cet événement. Parmi ces ressources, les plantes aromatiques et pharmaceutiques tiennent une place toute particulière: leurs propriétés et leur potentiel industriel sont tels qu'elles sont convoitées par les plus grandes industries internationales. Les six plantes proposées sont natives du pays et gérées depuis des générations par les communautés villageoises, qui ont une responsabilité dans leur maintien au sein de cette biodiversité végétale. Leur exploitation raisonnée et leur commercialisation représentent un moyen non seulement de pérenniser la conservation de ces espèces végétales, mais surtout d'apporter un complément de revenu monétaire à de nombreuses familles rurales.

PRODUITS FORESTIERS NON LIGNEUX DE LA RÉPUBLIQUE DÉMOCRATIQUE POPULAIRE LAO



L'année 2011 a été proclamée Année internationale des forêts par les Nations Unies. La République démocratique populaire lao, dotée d'un domaine forestier vaste et composé de différents types de forêt, s'associe à cet événement et rappelle, parmi les différentes fonctions des forêts, l'importance des produits non ligneux.

Les produits non ligneux peuvent être des fruits, des fleurs, des résines, mais aussi des produits animaux (cire, miel, gomme laque, etc.). Six produits figurent dans cette nouvelle collection et sont illustrés par les essences forestières auxquels ils sont associés.

Depuis près de 20 ans, Agroforex Company promeut la pérennisation du marché international des produits forestiers non ligneux du pays. Il s'agit d'une exploitation renouvelable qui génère des revenus monétaires complémentaires aux communautés forestières, directement attachées à la conservation de ce domaine forestier.

La collection 2011 est dédiée aux essences forestières sources de quatre autres PFNL de la République démocratique populaire lao: *Cinnamomum Loureiris*, qui produit la cannelle royale, *Scapium lychnophorum*, dont est issue la noix de malva, *Shorea spp.*, à l'origine de la gomme dammar, et *Dipterocarpus alatus*, qui donne le gurjum et deux produits inféodés à plusieurs espèces forestières, la cire d'abeille et la gomme laque. [Auteur: F. Chagnaud, DG, Agroforex Company, PO Box 6682, 43-45 Piene Morin Road, 01000 Vientiane, République démocratique populaire lao. Courriel: fchagnaud@agroforex-company.com/]

LEBANON

Cedar forests ecotourism boom

Lebanon's 2 000 ha of cedar forest are a peaceful oasis for hikers, mountain bikers and bird-watchers, a world away from the hustle and bustle of Beirut. In the Shouf Cedar Reserve, the country's largest natural forest, villagers make a living selling home-made jam, honey, pickled olives and wine to tourists. The area was declared a UNESCO Biosphere Reserve in 2005.

While sustainable tourism is booming, the ancient forests are under threat from climate change. Nizar Hani, manager of Shouf Cedar Reserve, said: "Right now we have a new challenge for the cedar forest in Lebanon, which is climate change".

The reserve is trying to raise awareness of biodiversity among its visitors and the local community, including schools and decision-makers. It had 40 000 visitors last year, with 65 percent Lebanese and 35 percent foreigners. This year, it is expecting to receive 50 000 visitors.

Villagers in the forest benefit from a sustainable tourism programme to sell 42 different home-made products, from honey to walnut jam, herbs and olive oil, to tourists. Hani said: "About 40 women benefit from this programme. We increase their income and they work on a seasonal basis to prepare all the products. In addition to the women, we have the beekeepers. They can put their bees in the reserve and at the end of the season promote their honey here."

Cedar trees have a fond place in Lebanese history as well as in the centre of the country's flag. (Source: CNN, 10 August 2011.)

PAKISTAN

In situ conservation of medicinal plants in Chitral

Glycyrrhiza glabra (liquorice root, known locally as *muruk*) is a species found in the Karimabad and Mustuj areas of Chitral and grows on marginal lands, usually field boundaries of agricultural lands. This undershrub plant starts sprouting in April, develops flowers in May and the pods mature in July.

The roots are used locally as remedies for throat infections, stomach problems and coughs. The population of this valuable species is rapidly declining in the district because the local communities

overharvest its roots for these local remedies and collect roots before seed setting. Moreover, there is heavy grazing by livestock in the area.

In order to conserve *muruk* and other valuable species in the forests of Chitral, the Directorate of Non-Timber Forest Products, Khyber Pukhtunkhaw Forest Department Development Office Chitral has initiated a special *in situ* conservation approach along the following lines.

- A Medicinal Plant Conservation committee has been formed in Chitral's Momy valley involving the local community, especially graziers (nomadic people). This committee has 20 members (15 men and five women) belonging to various villages and castes in the valley.
- An area of about 10 acres (4 ha) has been declared a Conservation Area of Medicinal Plants (CAMP) and, by involving the local community, grazing here has been banned for a period of five years in order to ensure the regeneration of *muruk*.
- A *chowkidar* (watchman) from the local community of Momy has been hired to look after the area and three village volunteers have also been engaged to control grazing there.
- One acre (0.4 ha) of degraded communal range land has been replanted with liquorice roots.
- Through a valley gathering, 56 local plant collectors have been trained in sustainable harvesting of medicinal plants.

(Contributed by: Mr Iftilhar Ahmad and Ajaz Ahmad, Directorate of Non-Timber Forest Products, KPK Forest Department, Shami Road, Peshawar, Pakistan. E-mail: ajaz_ntfp@yahoo.com/)



Glycyrrhiza glabra

PHILIPPINES

Philippines' tribes try to save their forest

Over 40 000 ha of land, including vast swathes of forest of Occidental Mindoro, is claimed by the Mangyan people as their ancestral domain. The land is believed to be rich in gold, natural gas and minerals worth many millions of dollars. The stakes are high and the Mangyan are fighting against all odds. They are an ethnic and linguistic minority group of fewer than 25 000 in number.

A Mangyan family earns on average just US\$0.34/day. Historically nomadic and forest gatherers, the tribes often struggle to feed themselves. The consequences are obvious as 60 percent of Mangyan children are malnourished and infant mortality rates are so high that a child is considered fortunate to reach the age of ten.

According to government regulations, all indigenous peoples such as the Mangyan tribes must prove their ownership of the land they claim as rightfully theirs through title deeds and legally valid documentation. Given that the majority of Mangyan are illiterate with limited contact with the outside world, their ability to support their claim is fraught with tremendous challenges, rendering them even more vulnerable.

They rely on support from local and international community development organizations such as Plan International. For their title claim, the organization – with support from the EU – is assisting the Mangyan to survey their land, create 3D maps of their domain and document their oral history, which is replete with references to geographic landmarks. (Source: Aljazeera, 14 September 2011.)

PORTUGAL

Portugal's traditional cork industry fights modern challengers

In the centuries-old cork forests of southern Portugal, locals who for generations have harvested the bark that caps billions of bottles around the world do not think much of the rival plastic stoppers and metal screwcaps threatening their livelihoods. "Cork is a safer bet," says João Simões, a 64-year-old, as he peels the bark off a cork oak – a job he has been doing for the past 40 years. "It seals [bottles] better."

Some of the world's leading winemakers disagree. Since the turn of the century they have used more and more

alternative stoppers in an unprecedented threat for the economy of Portugal, the world's largest cork producer and one of Western Europe's poorest countries. The competition compelled Portuguese cork companies, accustomed to a long-standing near-monopoly, to embark on a do-or-die makeover. Now, producers say, their modernization and diversification programme is paying off.

They say they have checked the steep drop in the market share for cork stoppers, holding it at around 70 percent for the past two years. And last year, cork exports improved for the first time in a decade with a growth of more than 8 percent, according to the National Statistics Institute.

"For the first time in 250 years, the cork industry was actually challenged," says Antonio Amorim, Chairman and Chief Executive Officer of Amorim, Portugal's oldest and largest cork company. "We would like to ... think that the worst times for the cork industry are behind us."

Portugal supplies about half of global cork production, and the spongy bark is a major export earner for a national economy that is floundering.

Cork's recovery illustrates the kind of overhaul that officials say Portuguese businesses need to become more competitive. Modernization "is the path we must take with the utmost urgency", Portuguese President Anibal Cavaco Silva said last month.

The cork industry ensures the livelihoods of some 10 000 Portuguese workers and their families, most of them in rural areas where jobs are hard to come by. "The economic importance of the cork industry and of the cork forest is absolutely critical," says Carlos de Jesus, operational director of APCOR, the Portuguese cork association.

The challenge to Portugal's dominance came from the other side of the globe. Winemakers in Australia and New Zealand were unhappy about what they said was the inconsistent quality of cork stoppers and occasional "cork taint" – the sour, musty taste that spoils a wine and is widely blamed on chemical interaction with the cork. It is what people refer to when they say a bottle of wine is "corked".

On top of that, a cork stopper costs between €0.25 and €2; its synthetic rival comes in at €0.15–€0.40.

Most New World producers, who export much of their wine to the United Kingdom

and the United States of America, have converted to synthetic closures and screwcaps. Some producers on other continents have followed suit. Wine experts gave their endorsement for the switch. One anti-cork group staged a mock funeral in New York featuring a cork stopper in a casket.

The Portuguese Government, aware that the industry is too big to fail, declared its survival "a national cause".

In a key victory, the cork business earned green credentials from the World Wide Fund for Nature (WWF), which applauded the industry for being renewable, sustainable and environmentally friendly. The cork oak's bark is pried off about every nine years, when the inner lining is able to withstand exposure. This happens in a regular cycle for more than a century with each tree. [Source: Associated Press in *The Washington Post*, 31 July 2011.]



Développement des petites et moyennes entreprises basées sur les PFNL

Le secteur des produits forestiers non ligneux (PFNL) au Congo est porteur de nombreuses opportunités, notamment dues à une grande diversité de ces ressources. Le *Gnetum*, les marantacées, les asperges (comme *Laccosperma secundiflorum*), le miel, les fruits comestibles (*Aframomum stipulatum*, *Landolphia* spp., *Coula edulis*, *Pseudospondias longifolia*) et les champignons sont les PFNL les plus utilisés à Abala, dans la région des Plateaux, et à Madingo-Kayes, dans la région du Kouilou, sites pilotes du projet PFNL de la FAO et du Ministère en charge des forêts. La demande commerciale de PFNL est forte et il existe des marchés au niveau local, national, sous-régional et international pour ces produits.

Toutefois, ces opportunités coexistent avec des carences: production irrégulière de PFNL; connaissance insuffisante des techniques durables de récolte, conservation, emballage et transport; faible promotion de la qualité des PFNL; absence d'organisation des producteurs et des commerçants, et besoins en renforcement des capacités des acteurs des petites et moyennes entreprises forestières (PMEF).

Afin de développer les filières PFNL, deux formations à l'approche de l'Analyse et du développement des marchés (ADM) ont été organisées par la FAO et le Ministère en charge des forêts à Abala et à Madingo-Kayes en août 2011. Cette approche développée et appliquée par la FAO depuis plus de 20 ans en Asie, en Amérique latine et en Afrique est une méthodologie participative conçue pour aider les populations locales à créer des entreprises rémunératrices tout en conservant les ressources forestières. La méthode comprend trois phases: la phase 1 consiste à identifier les entrepreneurs et les produits potentiels, la phase 2 à sélectionner les produits les plus prometteurs, à identifier les marchés potentiels et à examiner les moyens de commercialiser les produits, et la phase 3 à préparer la stratégie et le plan d'entreprise et à faire démarrer les entreprises forestières.

Les études de base menées dans le cadre du Projet ont permis de se faire une idée sur les éléments des phases 1 et 2 de l'ADM. En conséquence, les formations ont mis l'accent sur la phase 3, élucidant les flux de commercialisation, soulignant les avantages de la collaboration en groupe au niveau des villages, et amenant les participants à déterminer leurs objectifs financiers et à élaborer des stratégies pour les atteindre.

Au total, 48 participants ont été formés durant cinq jours dans les deux sites, et neuf plans de développement d'entreprise (PDE) pilotes ont été développés. Les activités après la formation prévoient une restitution dans les villages, suivie de l'élaboration et de la mise en œuvre de PDE pour d'autres groupes de ces villages.

À la suite et dans le cadre du même projet, la FAO organise des formations similaires au Gabon et en République centrafricaine.

POUR EN SAVOIR PLUS, CONTACTER:

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Facilitating honey business

Honey dealers in Rwanda are set to receive better rewards after the Rwanda Bureau of Standards (RBS) established quality standards to boost the product in the market.

Rwandan honey has seen tremendous demand both locally and internationally. The Managing Director of RBS, Mark Bagabe Cyubahiro, says that the recent increase in the demand for honey has called for standards and checks to ensure quality. "We have taken a multipronged approach to make sure that Rwandan honey meets international standards compliant by offering training to farmers and dealers," he said.

Cyubahiro said that demand for honey has increased because of the growing tourism sector. "We have a big market here locally, in the Middle East and Europe. The challenge is for beekeepers to go for high volumes by acquiring big beehives to increase production."

Cyubahiro added: "Market demand requires certain standards that we could not meet because the international market demands organic products that are pesticide free," he said. He noted that honey collected in agricultural areas where pesticides are sprayed normally contains copper, a metal that is dangerous to a human body's functions. Such metals, including the carcinogen found in smoke that is used by many farmers to harvest honey, are the critical elements that lower quality, making the product harmful.

However, efforts are under way to create awareness among honey farmers against using smoke. Florida Uwamariya, the Accounts Administrator of Rwanda beekeeping services centre, said farmers have been trained in safe extraction, post-harvest honey management and packaging, which has improved quality. "We are looking at how we can maintain hygiene and quality honey processing and setting



up scale-processing equipment to upgrade the quality standards and produce," she said. She added that they have received international demand for Rwandan honey because of its naturalness, thanks to the country's well-endowed forests and ecosystems. [Source: www.allafrica.com, 23 June 2011.]



Great Green Wall project gathers pace

Senegal is planting its latest batch of seedlings for Africa's "wall of trees" initiative this week – the first planting since a memorandum of understanding (MoU) for the project was signed in May.

The Great Green Wall project involves planting a living wall of trees and bushes more than 7 000 km long and 15 km wide, from Dakar, Senegal in the west to Djibouti in the east, to protect the semi-arid Sahel region from desertification.

The project is in its fourth year in Senegal, with planting taking place in Labgar, Mbar Toubab, Tessekere and Widou. The 1 500-strong workforce began planting this week (8 August) and hopes to plant 1.65 million seedlings by 15 September. Since 2008, Senegal has planted nearly 8 million seedlings for the wall.

Pape Sarr, Technical Director for the Senegalese project, told SciDev.Net that the species selected for planting are economically viable and drought resistant. They are also protected by law in Senegal and cannot be felled without government permission, he said.

The wall was initiated by the African Union (AU) in 2007, through its New Partnership for Africa's Development (NEPAD). In June last year, AU created the Pan African Agency of the Great Green Wall to monitor and coordinate the project in the different countries, and provide and share information.

Marcel Nwalozie, Director of NEPAD's West Africa Mission, told SciDev.Net: "One of the things we are trying to do [through the MoU] is [create] a scientific advisory panel, because the Great Green Wall is not going to be just a wall of trees". The project could also help improve livelihoods of the communities around the wall, he said.

His office, Nwalozie added, is currently looking into different initiatives to improve the soil, which would also help improve local livelihoods.

Matar Cisse, Director-General of the Senegalese Great Green Wall Agency, said efforts were in place to maintain the plants after harvesting. "The World Food Programme provides food for work to the communities that are hosting the programmes where the walls are being planted. These communities were given the responsibility to maintain these trees that are being planted. We have small irrigation systems that these communities use to water the plants and [they will also] protect them from animals." [Source: SciDev.Net, 12 August 2011.]



Resource curse or wild wonder?

After the people of South Sudan voted overwhelmingly for independence, the work of building a nation begins. One of many tasks facing the nation's nascent leaders is the conservation of its stunning wildlife. In 2007, following two decades of brutal civil war, the Wildlife Conservation Society (WCS) surveyed South Sudan. What they found surprised everyone: 1.3 million white-eared *kob*, *tiang* (or *topi*) antelopes and Mongalla gazelles still roamed the plains, making up the world's second largest migration after the Serengeti. The civil war had not, as expected, largely diminished the Sudan's great wildernesses, which are also inhabited by buffaloes, giraffes, lions, *bongo* antelopes, chimpanzees and some 8 000 elephants.

However, with new nationhood come tough decisions and new pressures. Multinational companies seeking to exploit the nation's vast natural resources are expected to arrive in South Sudan, tempting the people with promises of development and economic growth, promises that have proven uneven at best across Africa. Dubbed the resource curse, many poor nations have seen their rich, natural resources plundered for the world market, but instead of reaping the financial

rewards, money is lost in poorly made deals or commodity swings, or ends up in the pockets of foreign corporations or corrupt officials, leaving the nation's people not with education and opportunity, but with environmental degradation and social unrest. Dependent on oil (98 percent of the Government's revenue comes from oil) and shockingly poor (90 percent of the people live on less than US\$1/day), the South Sudan is perfectly situated for a resource-curse repeat.

One way to avoid the resource curse is to expand the economic portfolio from non-renewable resources, such as oil and mining, to opportunities that will not stagnate. Here is where the nation's vast wildlife – and its still intact ecosystems – comes in.

"There is a historic opportunity, perhaps unprecedented, for wildlife conservation, sustainable natural resource management and environmentally friendly ecotourism to be integrated into the nation-building process," wrote Steven Sanderson, Chief Executive Officer of WCS.

With some of the continent's biggest herds – and therefore some of the best wildlife viewing in the world – South Sudan could become an ecotourism hub. Tourism in such a place is nothing to sniff at: Kenya estimated it would make over US\$1 billion in revenue from tourism in 2010. And unlike oil, tourism does not run dry, so long as the South Sudan makes forward-thinking conservation a priority. [Source: www.mongabay.com, 11 July 2011.]



SUDAN

Gum arabic: the Sudan's miracle commodity

Vital to human manufacturing, gum arabic is used in a wide variety of industries including pharmaceuticals, soft drinks, paints, detergents, chocolates, textiles, metal corrosion inhibition, glues, pesticides and much more. This sap, from the branches of *Acacia senegal* trees, is a natural emulsifier, which means that it can keep together substances that normally would not mix well.

The WWF project in the Bikin River area aims to demonstrate that harvesting and utilization of wild NTFPs, providing the major source of income for local people, is a viable alternative to timber logging (often illegal and unsustainable). These efforts lead to the conservation of Korean pine forests and Amur tiger habitats.

Since most of the world's gum arabic comes from the Sudan, it is considered to

be the country's miracle commodity, with a thick belt of the trees stretching from one end of the Sudan to the other.

The resource-rich African country exports tens of thousands of tonnes of raw gum arabic each year, feeding 80 percent of global demand. The Sudan's output has dropped to nearly half of what the nation produced in its heyday. As the once abundant belt of *A. senegal* trees across the Sudan shrinks, climate change appears to be one of the culprits.

The humanitarian crisis in Darfur and now in Southern Kordofan and Blue Nile are having a negative impact by sullyng the Sudan's reputation to the point that many companies do not want to admit that they buy a Sudanese commodity.

For example, Coca-Cola, which uses gum arabic to keep the sugar from precipitating to the bottom of its sodas, will not say where it gets the emulsifier. The raw sap is sent to Europe for processing and then it is disseminated to customers worldwide. Referenced in the Qur'an, Bible and Torah, modern research has proved its role in fighting diseases including diabetes, kidney disease, colon cancer, heart disease and high blood pressure.

Ly Hoang, Quality Manager of Alan and Robert, one of the companies working in the Sudan, admits that the commodity is used in an unimaginable number of commodities. Ly Hoang said that a forum in Khartoum recently took place "to exchange ideas and research topics on gum arabic by different universities and professors and students and to review the future of gum arabic". In the same context, she said Sudanese gum arabic is the most important gum in volume in the world. [Source: SudanVision Daily, 19 September 2011.]



Gum arabic



TRINIDAD AND TOBAGO

Beekeeping activities

Available data indicated that in 2008 there were around 300 beekeepers and 6 000 honey-bee colonies in Trinidad, and 16 beekeepers with 450 colonies in Tobago. This represents a decline in beekeeping in both islands, clearly suggesting that new strategies must be found to secure the sector's future to enable it to realize its full potential.

Since 1997, the Government has agreed to designate areas of forest reserve lands to be used for beekeeping activities but, to date, the agreement remains unfulfilled. This potentially fruitful policy decision could, if implemented, significantly improve the sector's history. This is because a recent survey revealed that beekeepers on both islands considered lack of suitable apiary sites as their major constraint to enterprise development.

Government policy, as reflected in statements by Food Production Minister Vasant Bharath, is one of support for the resurgence of beekeeping. Local beekeepers hope the Minister will recognize that unless a structured mechanism for the support of beekeeping is appropriately resourced, mobilized and mandated, attempts to develop the sector are likely to be short lived. Due consideration must be given to the fragility of the national beekeeping environment, which is threatened by new and exotic pests and diseases, and subjected to denudation by untamed bush fires, slash-and-burn agriculture, creeping urbanization, "fogging" for mosquitoes and large-scale industrial sites being established in rural communities.

Complementarity between beekeeping on the two islands may also be explored: a significant market exists for European queen bees in Trinidad, which could be satisfied by developing commercial queen-rearing capacity in Tobago. Of course, there is also the need to ensure that Tobago remains free from Africanized bees. Given the probability that these bees will eventually arrive in Tobago, action must be taken, both to forestall and yet prepare for that eventuality.

Beekeepers must exploit to the fullest their collective potential as a "cluster" of socio-economic interests, and enjoy the benefits of cooperation rather than competing within their community. There is significant scope to expand and diversify

the production and marketing of bee products. The bottom line is that *apiculture* must be tweaked to emphasize its *api-business* component. Finally, and of critical importance, is the need to recognize that twenty-first century beekeeping is not a simple vocation. The perception of aspiring beekeepers, investors, advisers, policy analysts and planners that there is "money in honey" and that the transformation process is as figuratively straightforward as changing the "h" in honey to the "m" in money, must give way to the reality that sustainable beekeeping is as complicated an activity as the bees we are working with. (Source: *Bees for Development Journal*, 99, June 2011.)

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UGANDA

Ugandans mobilize to save Mabira forest from sugar-cane plantation

One of Africa's last remaining tropical forests, Mabira is home to precious wildlife and is an ecotourist attraction. But it is now under threat from sugar-cane production.

In July this year, when sugar prices tripled, Ugandan President Yoweri Museveni took the opportunity to try to convince the public that the only way to bring down prices was to increase sugar production. To do this, Ugandans would give away 7 100 ha of Mabira Central Forest Reserve to the Sugar Corporation of Uganda Limited (SCOUL) to produce more sugar.

In 2007, the Government attempted to give away Mabira but backed down after facing strong resistance from civil society organizations and the public.

Mabira forest is a core conservation area for critical biodiversity; a hub for ecological and environmental conservation; a habitat for many animal and plant species; a water-catchment protector for the many rivers and streams that feed the lakes in East Africa; a recharger for underground aquifers; a crucial component of microclimate moderation in the region (which aids agricultural production); a necessary catalyst for carbon sequestration in the region; and an economic boon for Uganda's ecotourism industry.

"We have an alternative, start a bee project and have honey instead of sugar. The bees will act as security to the trees in the forest," said Beatrice Anywar, Member of Parliament for Kitgum.

Conservationists have warned that in the event that the ecology of Mabira is disrupted, the future of Ugandan dams such as Bujagali and Nalubaale would equally be at stake.

"A rain forest like Mabira is simply too intricate and delicate a body to slice apart. It will be unable to perform these functions amputated," said Tony Otoa, a researcher with Advocates Coalition for Development and Environment Uganda (ACODE-U).

(Source: *The Ecologist*, 20 September 2011.)



UNITED KINGDOM

Foraging in the spring

One of the most versatile of our spring-flowering woodland plants forms vivid green patches in damp shady places on the alluvial soil beside woodland streams. Ramsons, *Allium ursinum*, or wild garlic, requires no searching for: if trodden on, it is instantly identified by a strong aroma of onions. There is no need to uproot the narrow bulbs; instead, collect a handful of the bright green, lily-of-the-valley-like leaves. Better still, pick a few clusters of the white flowers with their six narrow petals – their *al dente* texture and subtle taste, when eaten raw, puts the leaves in the shade.

For those requiring more solid sustenance, the underground tubers of pignut, *Conopodium majus*, a small plant that grows in ancient woods, are worthy of the search, especially in May. At this time, the finely divided, carrot-like leaves are topped by thin stalks bearing tiny clusters of white cow-parsley-type flower heads. In former times, free-range pigs found autumn nourishment from uprooting the plant. The hazelnut-like tuber lies at least 8 cm under the soil surface, so a penknife or trowel is useful. The sliced "nuts" can be eaten raw in salads or cooked as part of stews and stir-fries.

Elder, also called elderberry, is a genus of between five and 30 species of shrubs or small trees constituting the genus *Sambucus* of the moschatel family, Adoxaceae. In the eyes of a forager, elder has the status of a weed but, as May gives way to June, this small, multibranched tree, with its fissured, corky bark, is transformed by clusters of creamy, fragrant flowers. Elder

leaves are inedible, but the flowers can be deep fried in batter and are readily transformed into a delicious cordial with the help of sugar, lemon juice and citric acid. Elder is the preferred home of one of our strangest fungi, jelly ear (*Auricularia auricula-judae*). Emerging from trunks and branches throughout the year, especially following rain, the ear-shaped, translucent brown fruits have the consistency of tough jelly babies. Finely sliced, they make a tasty addition to a stir-fry or risotto and, after stewing and blending, the resultant glutinous soup is flavoursome and filling, if a rather odd colour.

April is high season for a much-prized and odd-looking woodland fungus known as the morel (any of various species of edible mushrooms of the genera *Morchella* and *Verpa*). Its tan-coloured cap is covered with honeycomb-like pits and resembles an elongated brain on a stalk. Morels grow to 10 cm on well-drained soil in open woodland. They are easily preserved by drying and can be rapidly reconstituted in warm water; the resulting taste and texture are every bit as good as with fresh ones.

A woodland plant that is more common in the north of England and in parts of Scotland, sweet cicely (*Myrrhis odorata*) flowers can be found as early as April. Good news for people suffering from diabetes: the sweetener found in this plant is not sugar and can be enjoyed by all.

Woodland foraging can even provide the ingredients for some unusual wines. You will have to wait until next year to make birch sap wine, as the peak collecting season is in early March, when the sap is rising. However, the end of May is the best time to collect young oak leaves, from which you can make a simple white wine with the help of



Myrrhis odorata

sugar, oranges and yeast. Once bottled, it can be drunk immediately, preferably on a hot summer's day. [Source: *The Observer* [United Kingdom], 10 April 2011.]

Honey is at the heart of a beneficial partnership

One of the most impressive features of the London office of the Nomura global investment bank, located in the City on the banks of the River Thames, is its 36 155 ft² (3 359 m²) flowering sedum-covered roof. Even more impressive is that an inner city organization is seeking corporates to help the floundering United Kingdom bee population by hosting beehives in their offices.

The Golden Company is a London-based organization working with at-risk 16–21 year-olds from inner London who develop business skills through producing, marketing and selling honey and related products. The social enterprise, founded in 2009, has offered services to London businesses since last year. The partnerships provide young people with training, income and work opportunities for 12 months.

Nomura offered the Golden Company the rooftop of its recently completed 11-storey European headquarters. Its roof provides plenty of opportunity for pollination and adheres to a strict no-pesticide policy. The honey bees feel welcome, which encourages wild pollinators to thrive. The hives are located in their own purpose-built area, surrounded by a timber enclosure to protect them from strong winds and London's unpredictable weather.

This partnership is not just helping the 150 000 bees: the Golden Company is able to provide work and training for two young people who will visit the bees regularly with an experienced beekeeper to monitor and maintain the hives.

It is also an opportunity for Nomura to help the City towards a sustainable future. With an emphasis on collaboration and teamwork, bees serve as a great metaphor for a large corporation.

"The initiative with the beehives on our roof is a perfect partnership for Nomura," says Dominic Cashman, the Managing Director. "We can use our building's environmental credentials – the roof garden and sedum roof – to give something back to the City by supporting the pollinators and inner-city young people."

Nomura has agreed to purchase all the honey produced in 2012, which will be used at client events and for breakfasts. [Source: *The Guardian* [United Kingdom], 25 July 2011.]



NTFPs in the United States of America

In partnership with 11 other countries, the United States of America participates in the Montreal Process. Each country assesses national progress towards the sustainable management of forest resources by using a set of criteria and indicators agreed on by all member countries.

Several indicators focus on NTFPs. In the United States of America, permit and contract data from the US Forest Service and the Bureau of Land Management, in addition to several other data sources, were used as a benchmark to assess harvest, value, employment, exports and imports, per capita consumption, and subsistence uses for many NTFPs.

The retail value of commercial harvests of NTFPs from United States forest lands is estimated at US\$1.4 billion annually. NTFPs are important to many people throughout the country for personal, cultural and commercial uses, providing food security, beauty, connection to culture and tradition, and income. [Source: S.J. Alexander, S.N. Oswald and M.R. Emery, 2011. *Nontimber forest products in the United States: Montreal Process indicators as measures of current conditions and sustainability*. Gen. Tech. Rep. PNW-GTR-851. Portland, OR, US Department of Agriculture, Forest Service, Pacific Northwest Research Station.] (abstract)

A forager's delight: seeking out secret harvests in the city

For about three weeks each summer, mulberry trees are impossible to miss, if you know what to look for. That is when the trees' sweet, ripe berries, which look a lot like blackberries, fall from the branches and leave telltale bluish-black stains on the pavement or ground below. It is happening right now in New York City.

Since most city folk do not even know that the berries can be eaten, more often than not the spoiled fruit winds up as pigeon feed.

With supermarket berries averaging about US\$3/pint (0.5 litre) at the moment, it is hard to see why more people do not take advantage of this annual harvest, available for free in cities from Sacramento, California to Baltimore, where the trees are also found and the berries are in season. Mulberries are one of the easiest foods for would-be foragers

US FOREST SERVICE REPORT ON SUSTAINABLE FORESTS RELEASED

The United States of America has 751 million acres (304 million ha) of forests that have remained remarkably stable during the past 50 years, according to the US Forest Service's *2010 National Report on Sustainable Forests* that was released today. The report, the second edition since 2003, provides a comprehensive picture of current conditions and trends in the nation's forests, forest industries and forest communities, and also gives details on forest conditions as they relate to sustainability.

Forests in the United States of America continue to face a number of threats, ranging from fragmentation and loss of forest integrity caused by development and an increase in the area and severity of forest disturbances including destructive insects, development and fire. The economic and social environment surrounding forests is also changing rapidly. Data from the report indicate ongoing shifts in where and how wood products are made and the emergence of new markets for environmental services. Some of this social change includes the growing ecotourism industry and a return to wood as a building material in smaller-scale structures. [Source: US Department of Agriculture, 7 July 2011.]

to harvest, because they are so plentiful and are not likely to be confused with any killer berries. Yet despite a plethora of new books on urban foraging and a growing interest in eating local, swallowing something that does not come from a market or restaurant can be just too scary for most city dwellers.

It does not help that city officials often frown on foraging. Health officials shut down an underground market of foraged foods in San Francisco last year, and the New York City Parks Department recently uprooted a rogue farm in Manhattan's Highbridge Park on the grounds that the crop was not safe for consumption.

Some foraged food is actually easier to find in cities than in the country. Dandelions, whose leaves are the least bitter in spring and autumn, as well as other greens such as

purslane and lamb's quarters, thrive in dry, sunny spots where less-hardy plants would perish. Caleb Malcom of Kansas City recently spied a flowering elderberry bush in an empty lot near his home as he was driving by one day and saw the bush's white flowers. Once the berries ripen later this summer, he plans to make elderberry wine. To make sure he does not harvest anything from a toxic brownfield or Superfund site, Malcom says he researches the sites he is interested in online before foraging them.

The biggest dilemma for new foragers is figuring out what's actually edible. Rule number one: if you are not sure what it is, do not eat it. To get started, free Web and field guides (such as *Nature's Garden* or *Urban Foraging*) abound. There are also some iPhone apps, such as Steve Brill's *Wild Edibles*. Park tours guided by long-time foragers can also help ease the learning curve.

The biggest challenge faced by experienced city foragers is the competition for some of the more coveted harvests. "Sometimes I stake out my favourite ginkgo trees, and I am too late," says Leda Meredith, author of *The Locavore's Handbook*, who often finds that others have collected the stinky tree's nuts, which can be roasted or used in tea.

Avid foragers say their hobby can shave up to 40 percent off their grocery bill. But that is rarely the main motive. Caleb Malcom likes the health benefits: "Wild vegetables and wild greens have a higher nutrient level than things you find in the grocery store." (For example, amaranth, also known as Chinese spinach, is high in many vitamins and minerals, including vitamin C, folate, calcium, iron and magnesium.) [Source: *Time Magazine*, 6 July 2011.]

A banner year for New York's maple syrup industry

Maple syrup production in New York increased 81 percent this year, compared with the dismal season in 2010, according to statistics from the state Department of Agriculture and Markets.

New York maple producers made 564 000 gallons (21 350 hectolitres) of maple syrup, said King Whetstone, Director of the US Department of Agriculture's National Agricultural Statistics Service office in New York. It is the highest production since 1947. Last year, 312 000 gallons (11 810 hectolitres) were made after an early warm-up stopped the sap run

after only a couple of weeks. In 2009, producers in the state made 439 000 gallons (11 810 hectolitres).

Whetstone said the number of taps in New York increased this year. There were 2.01 million taps, up 6 percent from 2010. He said that this is the largest number of taps since 1950.

An overwhelming majority of maple producers in the state reported a favourable season. The weather was with producers this year, as temperatures began to warm above freezing in March and stayed in the 40s during the days and in the 30s at night, allowing sap to run for a month or more.

Only Vermont produces more syrup than New York. Its producers made 1.14 million gallons (43 154 hectolitres) this year. [Source: www.syracuse.com [New York, United States of America], 15 June 2011.]



VENEZUELA (BOLIVARIAN REPUBLIC OF)

Venezuela's wildlife conservation sees mixed results

Young crocodiles cry plaintively for their mother as they are hooked in a trap and pulled, splashing frantically, from the water. But their mother is nowhere to be seen. These one-year-old Orinoco crocodiles are part of a captive breeding programme designed to put the brakes on their slide towards extinction. This crocodile (*Crocodylus intermedius*) is the biggest in South America, present only in Venezuela and Colombia. Researchers measure population by the number of adult females and say there are now around 100 in Venezuela, far fewer in Colombia.

"In the 1930s and 1940s, they were overexploited for their skin," said Omar Hernandez, Director of Venezuela's Science Development Foundation. "Now people are eating these crocodiles, they are hunting them for their meat."

The breeding programme, which each year sees around 200 young crocodiles released into the rivers of Venezuela's *Llanos*, or Great Plains, takes place on a private reserve about six hours drive from the capital, Caracas.

Over the years, state-run national parks have proved ineffective at preserving wildlife and the task fell to private ranchers who kept reserves and created ecotourism lodges. The challenge is for productive farming to coexist with conservation programmes. But now these reserves are an endangered species themselves. Since 2006, three of the four farms that hosted biological research programmes have been expropriated by the Government, to the dismay of environmentalists.

Yet at one expropriated farm, ecological programmes are continuing. El Cedral, a 53 000-ha ranch, keeps 90 percent of its land as a nature reserve, while still raising cattle for meat and buffalo for dairy products. Its ecotourism lodge remains open and continues to attract bird-watchers who come to see the more than 300 species found at the ranch. The approach at El Cedral seems to suggest that all is not lost for the wildlife of the Great Plains, but neither is its future guaranteed. [Source: BBC News, 13 June 2011.]

VIET NAM

Agarwood in Viet Nam

In Viet Nam, agarwood is naturally distributed in the north, central highlands and southeast of the country, and is widely grown in the north-central regions, especially across Ha Tinh and Thua Thien Hue provinces.

Agarwood can provide valuable products such as highly valued paper pulp (agarwood chips), agarwood incense and agarwood oil for perfume and traditional medicines. Prices vary from US\$10 (for fragrant agarwood) to US\$1 000 (for perfume and oils), up to US\$20 000–30 000/kg (for best-quality perfume and medicines or *Ky nam* in Vietnamese).

Depending upon the extent of the resin accumulation, the heartwood is generally classified into four categories: grade 1 (grade A), black or true agar; grade 2 (grade B), *bantang*; grade 3 (grade C), *bhuta* or *phuta*; and grade 4 (grade D), *dhum*. True agar is mainly exported to the Middle East countries where it is used as incense. *Bantang* is brown

Agarwood (or agar) is a dark resinous heartwood that forms in *Aquilaria* trees (large evergreens native to Southeast Asia and Viet Nam) when they become infected with a type of mould. Prior to infection, the heartwood is relatively light and pale coloured; however, as the infection progresses, the tree responds by producing a dense, dark aromatic resin. The resin-embedded wood is commonly called *gaharu*, aloeswood, agarwood or *oud* and is valued in many cultures for its distinctive fragrance, which is used in incense and perfumes. One of the reasons for the relative rarity and high cost of agarwood is the depletion of the wild resource. Since 1990, the *Aquilaria* tree has been listed in CITES Appendix II (potentially threatened species).

in colour without any black tones. *Bhuta* is also brown but interspersed with 50 percent or more of yellow-coloured wood. These two grades are usually used in incense. *Dhum* is the lowest grade, which is mostly yellow with scattered streaks of brown or black resin. It is typically distilled for oil.

Agarwood is one of the ecologically and economically valued timber trees in Viet Nam, and it is widely used to reforest barren land on hilly and mountainous regions of some north-central provinces. The tree is best grown in home and forest gardens, with a combination of agricultural crops. [Source: Quang Hoang Ha and Huu Tran Nghi, 2010. *Agarwood in agroforestry systems in North Central Provinces, Vietnam*. Vietnam's Forestry Network and Tropenbos International (Viet Nam).]

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Half of city residents have eaten bushmeat

More than half of Ho Chi Minh City (HCMC) residents said they have eaten bushmeat, of which 48 percent have consumed it more than three times/year, according to the latest findings by Wildlife At Risk (WAR).

The HCMC-based NGO carried out the survey about the consumption of wild animal

products in HCMC on 4 000 city dwellers and 3 600 secondary school students between August 2010 and April 2011.

The survey, released on Monday, reveals that men consume more wild animal products than women, and restaurants in HCMC are the most common place for people to eat the meat.

The majority of polled people say they eat bushmeat because others invite them, or they want to try new experiences or they feel the meat is more delicious. According to the survey, people of 36–45 years old, state workers and those with high educational levels have a tendency to consume wild animal products more than other groups. As for secondary school students (aged between 11 and 14), 28.2 percent of them say they have eaten bushmeat, and their consumption is influenced by their parents and other adults in the family. Unlike adults, these teenagers usually eat the meat during trips to other provinces or at family events such as birthday parties.

The survey reveals that most polled people think that hunting and trading of wild animal products is the biggest threat to wild species. In fact, consumption of wildlife products is the biggest threat because it promotes illegal hunting and trading, putting wild animals at risk of extinction.

According to WAR, communication and education programmes need to be designed for residents and students in order to prevent endangered wildlife consumption. It says animal products from legal farming should be introduced as a substitute. [Source: www.thanhniennews.com, 24 May 2011.]



ZIMBABWE

Ecological and financial impacts of illegal bushmeat trade

In West and Central Africa, bushmeat hunting is a survival strategy for large numbers of people, sometimes comprising most animal protein consumed and contributing significantly to household incomes. Finding solutions to address unsustainable offtake is crucial from both conservation and development perspectives.

In Zimbabwe, illegal bushmeat hunting has emerged as a serious conservation threat, given the conditions of political instability and economic decline. Widespread poverty, unemployment and food insecurity have compounded the threat to wildlife populations and wildlife-based land uses in the southeast

Lowveld of Zimbabwe. Dramatic loss of wildlife populations followed settlement of game ranches during land reform and, without realignment of land uses or efforts to enable resettled farmers to engage in wildlife-based land uses, the prospects for conservation on private land are bleak.

A study published in *Oryx* in 2011 highlights several management and land-use planning steps required to maximize the efficacy of antipoaching efforts and to reduce the likelihood of high impacts of illegal hunting. It provides a number of widely applicable insights for the prevention and management of illegal bushmeat hunting.

Recommendations include: (i) antipoaching efforts need to be aligned with the regular temporal and spatial patterns of illegal hunting; (ii) leases for hunting and tourism concessions should ensure adequate investment by tourism operators in antipoaching; (iii) in conservancies and hunting concessions minimum standards of per capita investment in antipoaching should be met for landowners to qualify for legal hunting quotas; (iv) reserve designers should minimize the perimeter-to-area ratio of parks; (v) fences should not be constructed using wire that can be made into snares; (vi) land reform involving game ranches should integrate communities in wildlife-based land uses and ensure spatial separation between land for wildlife and human settlement; and (vii) means are required to enable communities to benefit from wildlife, create disincentives for illegal hunting and provide for more efficient use of wildlife resources. [Source: P.A. Lindsey, S.S. Romañach, C.J. Tambling, K. Chartier and R. Groom, 2011. Ecological and financial impacts of illegal bushmeat trade in Zimbabwe. *Oryx*, 45(1): 96–111.]

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The game of life is not so much in holding a good hand as playing a poor hand well.

H.T. Leslie