

## AFGHANISTAN

### Saffron being promoted as alternative to poppy in Afghanistan

"When we look at the farmers who make a living from growing poppy, we don't support the active eradication because when you eradicate their fields they don't have an income any more," the commander of Netherlands forces in Uruzgan province, Brigadier General Marc van Uhm, told AFP. "If they can't feed their families, then what we do is alienate them from us, they blame us."

The Netherlands is the lead nation for NATO's coalition troops in southern Uruzgan province, one of the poorest in Afghanistan – and the fourth largest producer of poppy. Wiping out the crop has been part of efforts to stabilize Afghanistan. But Afghanistan still produces more than 90 percent of the opium base used to manufacture heroin worldwide – worth some USD2.8 billion in 2009, according to United Nations figures.

The poppies, which provide rich pickings in one of the world's poorest countries, also play a large part in the corruption that plagues Afghan life at every level, from district to national government. With so many people profiting from poppies on both sides of the war, efforts to wean farmers off a crop that provides them with an income several times higher than they could earn from wheat or other mainstream produce is not easy.

The chief civil representative on Task Force Uruzgan, Michel Rentenaar, says the Netherlands aim to encourage farmers to turn to alternative crops, such as saffron and fruit and nut trees. "Our effort is to supply an alternative livelihood. We have had success with introducing saffron in the province; the harvest has increased every year for the past three years."

"Saffron is incredibly expensive and its yield is about two to three times higher than poppy. But it is slow to convince farmers to change."

The 2008/2009 harvest was 50 kg, while this year's is expected to be almost double that, and of better quality. While the figures are small, saffron has long been the world's most expensive spice by weight and a total of some 500 farmers are now growing it in Uruzgan, with a Netherlands firm buying a large chunk of the harvest. In comparison, however, 1.6 million people were involved in producing 6 900 tonnes of opium in 2009, the UN Office on Drugs and Crime says – mostly in the southern provinces worst hit by the insurgency. (Source: AFP, 1 February 2010.)

## ARGENTINA

### Productos forestales no madereros: su potencialidad en el Chaco Semiárido

Los ecosistemas forestales continúan siendo degradados a causa de la incorrecta intervención del ser humano en la explotación de sus recursos. Durante muchas décadas, el sector forestal industrial ha llevado adelante una explotación selectiva, modalidad que, además del casi exterminio de la especie explotada, impulsó la degradación de la mayoría de los componentes naturales del sistema. Esta desnaturalización del medio ha llevado a la desvalorización relativa de la actividad forestal frente a otras actividades productivas como la agricultura y la ganadería. Así es como actualmente, profundizando la irracionalidad, las actividades agropecuarias están terminando de arrasar los ecosistemas forestales, y con ello también la degradación de las clases campesinas y de los pueblos originarios.

Este problema es grave y complejo por lo que su solución requiere de cambios en el campo técnico, económico y sobre todo modificaciones estructurales del modelo global de desarrollo.

Este artículo pretende resaltar la importancia del aprovechamiento integral y múltiple como medio para revertir, en parte, la degradación de los ecosistemas y contribuir a la sostenibilidad económica, social y ecológica de un ambiente natural.

Los productos forestales no madereros (PFNM) son fundamentales a la hora de proponer modelos de desarrollo sostenibles ya que: a) la mayoría de ellos están arraigados en la cultura local, por lo que cuentan con el conocimiento, reconocimiento y aceptación de la población; b) un alto porcentaje de los PFNM satisfacen inmediatamente necesidades primarias de los pobladores, como la alimentación y la salud; c) la producción de los mismos contribuyen al resguardo de valores y hábitos propios de una cultura; d) en muchos casos, se rescatan conocimientos ancestrales; y e) su consumo es más bien regional y no global, es decir más compatible con la productividad de un ecosistema rico en biodiversidad.

En el Parque Chaqueño Semiárido argentino no existen actualmente áreas vírgenes; sus bienes se encuentran degradados en diferentes intensidades. Frente a esta realidad es necesario, de manera urgente, plantear y aplicar sólo modelos de aprovechamiento basados en el desarrollo sostenible.



Son numerosos los PFNM que se pueden extraer de este ecosistema forestal. Alguno de ellos, pocos, se producen y comercializan, incluso a nivel internacional. Otros, más numerosos, se producen y consumen en el mercado nacional, y especialmente en la región. Una cantidad muy importante de los PFNM están en fase de investigación y desarrollo. Hasta ahora su aprovechamiento, salvo excepciones, no se ha realizado dentro de un sistema de aprovechamiento múltiple.

En un reciente trabajo se ha recopilado e ilustrado una cantidad importante de PFNM presentes en la Región Chaqueña Semiárida argentina, así como sus usos. Entre los más usados de origen vegetal se pueden nombrar a los obtenidos del **algarrobo blanco** (*Prosopis alba*), árbol de cuyas flores se produce un tipo de miel monofloral y de sus vainas ricas en azúcares, proteínas, sales minerales que se consume en estado natural (crudo) también se elaboran bebidas refrescantes como la «añapa» y la «aloja», esta última se obtiene de la fermentación de las mismas en agua. Con la fruta del **vinal** (*Prosopis ruscifolia*) y del **algarrobo negro** (*Prosopis nigra* H.) al igual que del algarrobo blanco se preparan harinas. Los frutos del **chañar** (*Geoffroea decorticans*) poseen propiedades alimenticias, medicinales, melíferas, tintóreas y forrajeras.

Otro PFNM es el **mistol** (*Ziziphus mistol*) cuya madera tiene poco valor comercial pero sus raíces se usan como jabón y con la corteza se colorea la lana de color marrón. Su floración es abundante e importante para la elaboración de miel. Su fruto es alimento para personas y forraje para los animales, también las hojas y frutos de la **tusca** (*Acacia aroma*) y del **guayacán** (*Caesalpinia paraguayensis*) se usan como alimentos y medicinas. La corteza de la **brea** (*Cercidium australe*) exuda una goma-resina de valor comercial. La **jatropa** (*Jatropha macrocarpa*) provee de un aceite, posible sucedáneo del aceite de



*Stetsonia coryne*

ricino. El **cardón** (*Stetsonia coryne*), el **quimil** (*Opuntia quimilo*), el **ucle** (*Cereus forbesii*), el **quishcaloro** (*Opuntia anacantha var retrorsa*) poseen frutos que sirven para la alimentación humana.

Entre los PFM de origen animal más comercializados y que se usan como mascota son el **loro hablador** (*Amazona festiva*), el **suri o ñandú** (*Rhea americana*) que proveer de carne, huevos, cuero y plumas. Así también la **iguana** (*Tupinambis rufescens*, *Tupinambis marinae*, *Tupinambis teguixin*), especies cazadas para la explotación del cuero, carne para alimentación y la grasa para fines medicinales.

El trabajo delinea un modelo de aprovechamiento múltiple a partir del uso simultáneo de madera y de los PFM. Se explica como este modelo sirve para la valorización relativa de la actividad forestal industrial frente a modelos agropecuarios y para contribuir al desarrollo sostenible en términos ambientales.

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#### How trees are restoring hope

Armenia has learned the hard way what it means for a country to lose its forests – and the huge backbreaking effort required to replant them. But in its struggle and determination to restore its trees, Armenia is an inspiration for the rest of the planet.

The endeavour to bring trees back to Armenia is thanks mostly to an initiative called the “Armenia Tree Project”, a programme supported by the international conservation charity WWF and BMU/KfW, the German Development Bank.

The Armenia Tree Project has been raising and planting trees throughout the country for almost 16 years. Last year, one million trees were planted, a record that brings the total of trees planted over the life of the project to about 3.5 million. All this is done by individuals determined that their trees will become forests to sustain livelihoods and restore a vibrant environment to Armenia.

What happened to Armenia and its trees, and what is being done to reverse the devastation of its forests? Jason Sohigian, Deputy Director of the Armenia Tree Project, says the lack of alternative fuel sources caused the loss of Armenia’s forests, especially during the years after independence from the Soviet Union in 1991, when people had no other way to keep warm than to cut down trees for fuel.

Ideally, forests should cover 25 percent of Armenia, Sohigian said. But now, even after a big replanting effort, the country’s tree cover is in the range of only 7 or 8 percent. Where the trees have been cut, the land is often degraded and desertification has set in as topsoil washes away.

To make matters worse, the changing global climate threatens the last fragments of forest, especially if rainfall declines.

The Armenia Tree Project works to afforest Armenia with natural forests, planting a mixture of native trees that should in time expand and regenerate forests naturally. “We are really trying to recreate natural forests, rather than plantations for harvesting,” Sohigian said.

Fruit and nut trees are also provided by the Armenia Tree Project to people in urban areas, so that individuals may plant trees on the streets or in their yards. This provides food to eat and trade as well as a more pleasant, landscaped environment.

The massive tree planting programme has also stimulated employment for Armenians, from the cultivation of seedlings to planting and protection of the nascent forests. (Source: National Geographic Online, 13 March 2010.)



#### Sundarban honey wisdom

The Sundarbans are the largest single block of tidal halophytic mangrove forest in the world.

Local people call the forest *badaban*. It spans 10 000 km<sup>2</sup>, about 6 000 km<sup>2</sup> of which are in Bangladesh. The Sundarbans were

inscribed as a UNESCO World Heritage Site in 1997 and were declared as the first Ramsar site in Bangladesh on 21 May 1992.

The Sundarbans consist of two ecoregions: freshwater swamp forests and mangrove forests. Very rich in floral diversity with about 334 plant species, they are also known for faunal diversity (375 animals, of which 35 reptiles, 41 mammals, 210 fish, 14 crab and 43 mollusc species). The Bengal tiger (*Panthera tigris*) and the *Sundari* tree (*Heritiera fomes*) are among the most significant species.

Meanwhile, about a million people are dependent on the Sundarbans’ resources. The forest people include *mawali* (honey collectors), *bawali* (leaf collectors), *jeley* (fishers) and crab collectors, as well as the indigenous Munda, Mahato and Bagdi people.

The Bangladesh Resource Centre for Indigenous Knowledge (BARCIK) started to work in the area in 2001. From its inception, BARCIK has strived to understand the state of biodiversity, local knowledge and practices, as well as how local people cope with natural calamities or developmental destruction by their own methods and resources. One key area here is that of livelihood rights.

BARCIK has taken an important step through a new project “Advocacy on Sustainable Resource Management and Livelihood Improvement of Mawalis in the Sundarbans”. The project started in

#### SUPPRESSED WOMEN’S VOICES, NOW UNITED

In the Sundarbans, women collect various forest resources for their family’s daily needs. Women also face many threats every day: wild animals such as tigers, crocodiles and snakes; robbers; unjust forest rules; and the male-dominant system. Until today, women’s forest resource rights in the Sundarban areas have remained largely unrecognized. Through BARCIK, the women have organized themselves and formed a group named *Sundarban Mahila Samiti*. Women are now trying to develop NTFP-based cottage industries, including pickled *kewra* fruit and *golpata* handicrafts, as well as soap and candles made of wax.

September 2008. Funded by the International Union for Conservation of Nature (IUCN) Netherlands (NL), it considers the local context and aims at a comprehensive community-led programme, focusing on: (i) ecology and biodiversity conservation; (ii) NTFP-dependent livelihoods; and (iii) ecological markets in the Sundarbans region.

Traditionally, a *mawali* group – composed of seven to nine persons – is formed during the honey collection season. The group leader, called *sajuni*, coordinates and operates the whole process. After the harvest, the people no longer work together in the same group or in any activities requiring teamwork. However, through BARCIK, NTFP collectors formed nine groups from 81 families.

Surprisingly, these groups continue to work together and even formed the Sundarban Sustainable Comanagement Committee, which functions as a comanagement system. This committee involves not only *mawali* but forest dwellers, women, members of local government, teachers, journalists, members of the local market committee and the Forest Department. The committee functions not

only during the honey season, but also during bargaining in the market, assessment of the honey market, and ecological education activities in schools. Even family and social problems are being managed and solved jointly.

This process has mobilized and empowered the people to claim access to permitted forest resources. [Source: *Voices from the Forest*, Edition No.18, April 2010.]

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#### **Saving plants that save lives and livelihoods**

AVIVE (Associação Vida Verde da Amazônia) is a women's association that was established in Silves, Brazil, in 1999, with the aim of developing natural products from the sustainable wild collection of native medicinal and aromatic plants. The group subsequently set up a cooperative, COPRONAT, to sell the finished products, which are mainly obtained from collectors and producers from different communities. In some cases, traditional knowledge (TK) is associated with the access and use of such species. AVIVE has established a relationship with the government, NGOs, academic and private sectors for different activities related to their work.

Although there is a lack of clarity regarding the scope of Access and Benefit-sharing (ABS) regulations in relation to the use of biological resources, good ABS practices – as well as those relating to protection, recognition and compensation of TK – are key for the commercialization of medicinal and aromatic plants and to avoid misperceptions of biopiracy or misappropriation of activities towards promoting their sustainable use and trade.

Different sectors need to increase their knowledge of these issues and their importance. Experts recommend that each user obtain clear information from each institute before beginning access, use and trade activities. But it is not that simple. AVIVE as collector, producer, supplier and trader will have to learn how to negotiate

with different interested parties, following current guidance and models and take appropriate legal and technical advice.

"Saving plants that save lives and livelihoods" is a project undertaken by TRAFFIC, WWF and IUCN, financed by BMZ and implemented in Brazil by the IUCN Regional Office for South America and AVIVE. One specific recommendation from the project has been for AVIVE to develop its own policy to deal with these issues and to protect its TK. The same recommendations are applicable for other parties involved. [Source: *TRAFFIC Bulletin*, 22: 3, 2010].

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#### **Sultanate must guard against illegal wildlife trafficking**

Brunei has not been spared from the illegal wildlife trade, which is rampant in Southeast Asia, said the training and capacity building coordinator of TRAFFIC Southeast Asia. Claire Beastall, speaker at the Borneo Customs Workshop on Wildlife Crime, said that Brunei is one of the most biodiverse places in the world, but there are people who are exploiting the Sultanate's animals and plants. Even though it is difficult to determine the seriousness of the illegal wildlife trade in Brunei compared with other countries in the region, illegal wildlife trade happens throughout Southeast Asia.

The two-day workshop (18–19 April), coorganized by TRAFFIC Southeast Asia and Brunei's Forestry Department, focused on issues such as the Heart of Borneo Network Initiative, wildlife trade in

#### **NINE MAWALI GROUPS BREAK THE SILENCE**

Nine *mawali* groups have collected about 5 600 kg of honey and 280 kg of wax in an ecologically friendly process. Women are also involved in forest honey processing. Both female and male forest dwellers assess the honey market from local to national levels and sell their own collection at a fair price, which they decided for themselves for the first time.

A decade ago, no one would believe that the *mawali* would have their own bank account and savings. Forest people used to depend on loans from the *mahajan* (traditional moneylender) and microcredit-based NGOs. Today, the group members have their own bank accounts and have saved a total of more than one lac taka (USD1 500). Although on a small scale, it is proof that the previously marginalized *mawali* have been able to break the unjust social power structure for their survival.

Borneo and commonly traded species in Southeast Asia.

The workshop also touched on identifying commonly traded wildlife species such as green turtles and their eggs, orangutans, pangolins (anteaters) and the *gaharu* tree – best known as the main source of agarwood (fragrant wood). “All of these are either traded in Borneo or they leave the island. This is an illegal and unsustainable trade,” she said. “Some of the commodities that you find in trade reach quite high prices, which is an incentive for smugglers.”

Beastall said that TRAFFIC monitors wildlife trade throughout the region and works closely with the Asean Wildlife Enforcement Network (Asean-Wen) for countries of the Association of Southeast Asian Nations. Asean-Wen coordinates the regional response to illegal trade in protected species, which threatens biodiversity, endangers public health and undermines economic well-being. [Source: www.bruneidirect.com, 19 April 2010.]



### Cambodian villagers turn from hunting to ecotourism

Biodiversity in Southeast Asia suffers from an onslaught of habitat loss, climate change and overexploitation. A few organizations are determined to develop strategies aimed at helping people to live in better harmony with nature.

One of these groups is the Siem Reap-based Sam Veasna Centre (SVC), which manages bird-watching day trips and itineraries to eight Wildlife Conservation Society (WCS) conservation projects across Cambodia. Nick Butler, the coordinator of the centre, said one of their main strategies for saving Cambodia's wilderness areas is promoting ecotourism. “Ecotourism works by providing local communities with alternative and sustainable livelihoods, linking education, as well as no-hunting and land use agreements, with the conservation of their local environment,” he said.

Butler said the involvement of local communities at a very early stage in developing ecotourism projects was crucial. “We do two things. The first is that we manage the ecotourism business by trying to get international bird-watchers to visit the WCS project sites across Cambodia,” he said. “The second part of

our business is to train villagers who live near the conservation area in the provision of ecotourism services. The result is that villagers are able to make an income by providing accommodation, food and guiding services for visitors. In return, they sign agreements not to hunt animals, not to cut down the forest and not to harm their environment.”

As part of its effort to help maintain biodiversity in Cambodia, SVC has developed a flagship project in Tmatboey village in Preah Vihear province, where the signing of successful no-hunting and land conservation agreements between WCS and the village committee has made it a model of community-based ecotourism. Butler said the main objective of the project was to conserve critically endangered bird species breeding in the area.

Another WCS conservation site where SVC manages ecotourism services is the Prek Toal core area of the Tonle Sap Biosphere Reserve in Battambang province. Seven water bird species of “global significance” have been found breeding in the area. [Source: *Phnom Penh Post*, 22 March 2010.]



### Mondulkiri wild: protecting people and biodiversity

Mondulkiri in northeast Cambodia is rich in forest and natural resources. It is also home to the Bunong indigenous communities.

NTFPs are viewed as a key means to improve the livelihood of the Bunong but also to ensure their direct participation in the conservation of the province's remaining forests of about 1.2 million ha. However, the Bunong currently face challenges to their way of life and their efforts at protecting their forest, culture and livelihoods.

WWF Cambodia and the Non-Timber Forest Products Exchange Programme

(NTFP-EP) are working together with Bunong communities with the aim of sustaining community benefits from the forest. One of their outputs is *Mondulkiri wild: protecting people and biodiversity*, a DVD (PAL) produced by NTFP-EP, WWF and the Gekko Studio. It is available in English and Khmer and runs for 27 minutes.

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### Stratégies de commercialisation des PFNL à l'échelle communale: cas de la région de l'Est

La question de la commercialisation de l'ébène, de la mangue sauvage ou du *ndjansang* (*Pentaclethra macrophylla*, *Irvingia gabonensis* et *Ricinodendron heudelotii*) ne se posait pas à priori lorsque, dans les années 1990, le législateur camerounais définissait le régime de commercialisation des produits forestiers issus de l'espace national (loi n°94/01 du 20 janvier portant régime des forêts, de la faune et de la pêche au Cameroun; décret n°95/531/PM du 23 août 1995 fixant les modalités d'application du régime des forêts). Pourtant, la demande de produits forestiers non ligneux (PFNL) comme ceux-ci reste importante sur le marché national et sous-régional. Leur valorisation par les communautés locales est devenue l'un des champs de bataille des Organisations non gouvernementales (ONG) camerounaises et des organismes de développement internationaux. Cet article revient sur des réflexions issues d'expériences de terrain réalisées dans le cadre du ProPSFE (Programme d'appui de l'Office allemand de la coopération technique [GTZ] au Programme sectoriel forêts-environnement) et du Centre technique de la forêt communale (CTFC).

Le Système d'information des marchés (SIM) des PFNL a été développé dans la région de l'Est par le CTFC, sur la base des expériences de divers partenaires au développement tels que la FAO. Des stratégies de commercialisation des PFNL végétaux à l'échelle communale ont été identifiées pour mieux agencer l'action du

CTFC dans le domaine, afin d'ajuster l'activité du SIM PFNL de la région à la législation. Ces stratégies illustrent des voies permettant aux PFNL, ramassés au titre du droit d'usage ou simplement collectés, d'entrer dans un circuit légal de commercialisation.

La première stratégie est valable pour la récolte des PFNL sur l'ensemble du territoire communal, sans distinction de type de forêt. Dans cette optique, **une entité juridique communale est titulaire du permis d'exploitation des PFNL**. Trois options sont envisageables: soit la commune dispose d'un titre d'exploitation et sous-traite l'activité de collecte aux Groupements d'intérêts communs (GIC) et aux fédérations communales; soit elle s'en approprie; soit enfin une union/fédération de GIC à l'échelle communale dispose d'un titre d'exploitation.

La deuxième stratégie est circonscrite aux types de titres forestiers. Dans ce cas, **les PFNL collectés et commercialisés proviennent exclusivement des forêts communales et des forêts communautaires**.

La troisième stratégie, enfin, est liée à la mise en place d'une activité génératrice de revenus (AGR) locale. Elle propose ainsi que **les PFNL collectés au titre du droit d'usage soient valorisés et transformés au niveau local**. La valeur ajoutée du produit devient de la sorte commercialisable, constituant une forme d'exception à l'interdiction de commercialiser le droit d'usage.

Une bonne organisation socioéconomique et le respect des normes d'exploitation forestière sont des conditions indispensables de mise en œuvre. L'option idéale serait certes que toutes ces stratégies fonctionnent simultanément sur le territoire communal, en attendant la consécration législative des différents avis sur les PFNL émis à ce jour. (**Contribution de:** Fernande Abanda, doctorante en droit forestier, Université de Yaoundé II, BP 18, Soa, Cameroun.)  
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#### Microentreprise forestière communautaire: huile de mubala

La Forêt modèle du Dja et Mpomo (FOMOD) regorge de multiples PFNL (tiges de jeunes arbustes, écorces, racines, fruits, sève, feuilles, fleurs, pollen, nectar, etc.). L'usage de certains de ces produits a parfois exigé un savoir spécifique et des formes d'initiation culturelle.



*Pentaclethra macrophylla*

Traditionnellement, la connaissance de tous ces produits et de leurs vertus permettait d'apporter des solutions à de nombreuses situations. Or, on constate aujourd'hui une perte de connaissances à cet égard. En même temps, certains PFNL négligés dans le contexte traditionnel prennent une importance considérable. Tel est le cas du *Pentaclethra macrophylla*, communément appelé *mubala*. Au Nigéria, par exemple, sa valorisation par les petites et moyennes entreprises a permis à ce PFNL de devenir numéro un en une année. D'après les informations recueillies, il produirait de l'huile végétale en grande quantité, et ses tourteaux seraient très nourrissants pour les porcs.

Au sein de la FOMOD, le *mubala* constitue une forte source potentielle de redistribution des bénéfices, du fait de son abondance et de son mode de prélèvement accessible à tous, essentiellement le ramassage. Eu égard à cette position de force et aux impacts socioéconomiques actuels et escomptés, la FOMOD se propose d'accorder une importance particulière à ce PFNL, en évaluant la possibilité de faciliter l'installation d'une microentreprise forestière communautaire de production d'huile et de tourteaux de *mubala* dans la zone. (**Contribution de:** Patrice Pa'ah, Secrétaire exécutif, Forêt modèle du Dja et Mpomo, Cameroun. Dans *NTPF Newsletter*, Volume 1:4, Natural Resources Canada and Royal Roads University, juin 2010.)

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#### Eru market chain baseline (*Gnetum* spp.) in the Southwest and Littoral regions

*Eru* (either of two species, *Gnetum africanum* or *G. buchholzianum*) is a leafy vine found in the tropical humid forests of Central Africa, including Cameroon. The leaves are harvested and traded principally as a vegetable, which is an important source of protein and nutrients, used in popular dishes in Cameroon and neighbouring Nigeria.

From March to October 2009, a baseline assessment (involving focus groups, questionnaires, interviews and visits, as well as secondary data) of the *Gnetum* spp. market chain was conducted in the Southwest and Littoral regions of Cameroon, extending into the Cross River and Akwa Ibom states of Nigeria.

The Manyu, Kupe-Manengouba and Ndian divisions in the Southwest and Mungo division in the Littoral region were selected as important production areas, based on a situational analysis and rapid assessment that were carried out prior to field work.

The research indicates that seven main market channels exist, linking up to seven types of actors, from consumers to traders, exporters and importers in major markets in Cameroon and the high volume market in Nigeria, with the major production harvesters in the Southwest and Littoral regions of Cameroon. An estimated 1 885 people work in the chain (including 759 producers, 60 traders, 138 exporters, 141 importers, 267 retailers and 330 in support services).

As most harvesters and traders in Cameroon do not belong to an organization or association, only a limited number of small- and medium-sized enterprises (16) appear active in the sector. In Nigeria, strong associations and unions are more common, with 18 organizations noted.

*Gnetum* contributes to 25 percent of producers' NTFP-related income in the Manyu division and up to 62 percent of NTFP-related income in the Mungo division.

Producers, traders, exporters, intermediaries, restaurant operators and processors make an average profit margin of CFAF220, 495, 232, 50, 550 and 150–500 per kg, respectively. Producers in the Manyu division make an annual average profit of CFAF598 729 and those in the Mungo division CFAF526 867.

*Eru* contributes to 75 percent of a retailer's income, on average CFAF729 327, and 58 percent of an exporter's income, on

average CFAF3 million. An exporter at Idenau made an annual average profit margin of CFAF357 148 750 in 2008 from the *eru* trade.

The *eru* market in Nigeria provides higher returns than the Cameroonian market, with a Nigerian wholesaler's average profit margin of CFAF425/kg for fresh *eru* while their Cameroonian suppliers make CFAF232 /kg. The differences can be explained by a number of factors: actors in Cameroon are not as organized as those in Nigeria, coupled with poor roads, high levels of corruption and taxes that reduce their profit margins.

Almost all *Gnetum* traded originated from the forest, the majority (41 percent) from its preferred shady habitat in well-drained, primary and secondary forest. Domestication schemes in eight villages have not yet matured to enter the markets on any significant scale. Despite high demand, the quantity produced in the study area in 2008 was 336 tonnes less than in 2007.

While a regulatory framework for *Gnetum* does exist, as it is classed as a Special Forestry Product requiring a permit for trade, the majority of harvesters and traders do not possess a permit. Increasing harvests, combined with the lack of regulatory or any customary control coupled with no enforcement of harvest permits, a very low level of domestication and increasing consumer demand have led to a situation of long-term unsustainable harvest. Correspondingly, the price of *eru* has increased with time, with an average increase of CFAF100/kg in production zones during the period 2007–2009. While the *Gnetum* trade is essential in providing cash income to harvesters and traders to meet their basic needs in health, education and housing – helping meet Millennium Development Goals in the study area – its exploitation is failing to contribute to meet the environmental sustainability goal.

This study, taking into consideration the views of actors, concludes that a more efficient market structure of the chain in Cameroon could enable them to benefit from higher profit margins. Domestication and awareness-raising programmes could lessen the pressure on an already depleted resource base and effective regulatory and customary control measures – if implemented and enforced – could limit overexploitation and enhance sustainable trade. [Source: summary of L. Ndumbe, V. Ingram *et al.* 2010. *Market baseline study*

on *Gnetum spp. in the Southwest and Littoral regions*, Cameroon. Yaoundé, Cameroon, FAO-CIFOR-SNV-World Agroforestry Centre- COMIFAC: 142.]

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**Environmental inspection in the Yasuni National Park**

Representatives of Ecuador's ombudsman's office and environmental groups have visited the Yasuni National Park, home to some of the world's last indigenous people still living in voluntary isolation, in order to verify reports of illegal activity by oil companies.

Ecuador's new constitution bans oil drilling in the "untouchable zone" declared by the government in the southern part of the park to ensure the survival of the Tagaeri and Taromenane indigenous communities, who have shunned contact with society and are highly vulnerable to introduced diseases. The untouchable zone – where no logging companies or other extractive industries can operate – was declared in 1999, although the boundaries were not fully defined until 2006.

Despite the ban on activities in the area, construction of an oil pipeline that would connect currently operating oilfields with possible deposits in the park has continued, said Esperanza Martínez, head of the "Amazonia por la Vida – Salvemos al Yasuni" campaign carried out by Acción Ecológica, a local environmental group.

Meanwhile, Minister of Non-Renewable Natural Resources Germánico Pinto said that President Rafael Correa had approved the terms of a trust fund to finance the decision to leave the oil underground in the Yasuni Park. Under the innovative plan, the government will issue bonds in exchange for a commitment to forego drilling in Yasuni, where there are an estimated 850 million barrels of crude, and to preserve the park's rain forest, while preventing the release of some 400 million tonnes of emissions of carbon dioxide, the main greenhouse gas.

The initiative is known as the Yasuni-ITT project because it involves the Ishpingo, Tambococho and Tiputini oilfields, which partly overlap with the untouchable zone in the southern part of the park, one of the most species-rich areas in the world.

The megadiverse Yasuni Park, the largest national park in this South American country, was declared a world biosphere reserve by UNESCO in 1989.

Pinto added that the trust fund would be negotiated again with the United Nations Development Programme (UNDP), which the government hopes will administer the project.

Yasuni, declared a national park in 1979, is in the heart of Ecuador's Amazon rain forest, in the eastern provinces of Orellana and Pastaza. More than 1 760 species of trees and bushes have been identified on its 982 000 ha. The park is also one of the areas in the world with the greatest variety of bird species, and nearly 40 percent of all species of mammals that inhabit the Amazon jungle can be found there. [Source: Amazon News, 15 April 2010.]

**NATIONAL PARK CONTAINS WORLD'S HIGHEST BIODIVERSITY**

More trees grow in a single hectare of upland rain forest in Yasuni – 655 species – than in the continental United States of America and Canada combined. In 25 ha, the number of tree species rises to 1 100. "In just one hectare in Yasuni, there are more tree, shrub, and liana (woody vines) species than anywhere else in the world," said Gorky Villa, an Ecuadorian botanist working with both the Smithsonian Institution and the conservation organization with offices in Maryland and Quito, Ecuador.

The same incredibly high diversity applies to amphibians; the 150 species documented to date throughout Yasuni are a world record for an area of this size. However, the numbers of insects in Yasuni may eclipse all of these: a single hectare of rain forest may contain as many as 100 000 unique insect species. This estimate is the highest per unit area in the world for any taxa, plant or animal. [Source: Mongabay.com, 19 January 2010.]

 ETHIOPIA

**White honey grows scarce as bees abandon Ethiopia's parched peaks**

The truffle of the apiary world – rare white honey from Ethiopia's highest peaks – is in danger of disappearing, according to beekeepers in the Tigray region. "No rain for the flowers," said Ashenaf Abera as he stood on his rocky, parched slope in the northern Ethiopian region. "The bees need high-altitude flowers for the white honey. When they cannot find them, they go to other plants and produce yellow honey."

Abera is paid £65 a month to mind 270 hives for the Asira Metira monastery, one of a dozen religious centres in an area whose fourth-century rock churches are among the wonders of the world. "We know about bees," said honey seller Sheikh Mohamed Ahamedin. He grips a large screwdriver with both hands to ladle a dollop of thick and lumpy white honey out of a plastic bucket. It is snow-white and tastes sweet and more waxy than yellow honey.

"The price is the highest it has ever been this year, because of scarcity," said Ahamedin, who sells white honey for £7.75/kg. Last year he charged £4.50/kg.

Ethiopia is Africa's largest honey producer and the world's fourth biggest beeswax exporter. After coffee, gold and cowhide, bee products are major contributors to the economy, especially through exports to Italy, where white honey is considered a delicacy.

Bee products are the only export item produced by Tigray's impoverished 4.6 million people, whose region is said to be one of the worst-hit in the world by climate change.

Such is Ethiopians' love of honey that apitherapy clinics offer treatments for many ailments. The national drink is *tej* – honey mead. [Source: *The Guardian* [United Kingdom], 18 April 2010.]

 FRANCE

**France's best honey: from the Paris rooftops?**

Parisians and tourists enjoying a meal at one of the restaurants in the famous "Fauchon" gourmet shop in central Paris might be surprised at the freshness of the honey served with their tea and other meals.

It is fresh and delicious because it comes from the roof of the nearby Paris Opera.

The beehives on top of the Opéra Garnier are just one of an increasing set of hives sprouting on roofs around Paris in an effort to save bees, their honey and their impact on our food and environment.

The Opera beehives belong to Jean Pauton, 77, who still likes to climb up to the rooftop of the Opéra in the centre of Paris to visit his bees. "Paris is perfect for them," Pauton explained. "The average temperature during the year is 13° C and there are lots of gardens: the Tuileries, the Luxembourg Gardens, La Villette basin, the Bois de Boulogne ..."

Pauton was not always a beekeeper. He used to be an Opéra props man. It was then that he bought his first beehive, and put it on the balcony of his Parisian apartment. But his neighbours were not too happy. A friend of his told him to put the hive on the roof of the Opéra so that the bees would not bother anyone anymore. He did so, and a few weeks later, a friend of a friend came up to take a picture of the beehive. "It turned out it was the famous French photographer Yann Arthus-Bertrand!" The photo was published in the French magazine *Paris Match*.

Pauton's rooftop beekeeping idea has become a trend and now beehives are located all over Paris. They have taken up residence on the roof of the newly renovated Grand Palais on the Champs Elysée, the brainstorm of beekeeper Nicolas Géant.

Géant owns a shop where he sells beehives to other Parisians. "Urban beekeeping is the future of apiculture," he said. "Most of the beekeepers have taken their hives back to the city because they realized bees were dying 30 percent more in the countryside."

It may seem paradoxical but pollution in the countryside is more toxic to bees than in the cities, especially in Paris. "For ten years now, the city of Paris has banned all chemical products from its gardens," Géant explained.

As beekeepers, both Nicolas Géant and Pauton are well aware of the damage caused to bees by chemical products. They try to increase the public's awareness of their disappearance and its consequences by organizing visits to their beehives.

Still, there is a tendency to think that the honey made in the city cannot be as good as that harvested in the countryside. Analyses made on the honey of the Grand Palais showed that there were traces of dandelions in last year's harvest. "There are lime trees, chestnuts, acacias in Paris. It's a diversity you can't find anywhere else," Jean Pauton added. In the countryside, the honey is made of only one species because of single-crop farming. That is why the honey of the Opéra is known for its flavour.

The price of that taste is a bit more than USD18 for barely 4 ounces (113.4 g). In other words: very expensive. [Source: *www.globalpost.com*, 28 June 2010.]

 GHANA

**Traditional plants at risk of disappearing**

The Fante-Akan people of Ghana have a traditional knowledge of ritual plants used to cure people of mental and physical ills, but these sacred plants are in danger of vanishing as their surrounding forests diminish.

"Certain important medicinal plants are no longer available," Dr Tinde van Andel, of the Netherlands Centre for Biodiversity Naturalis, told MediaGlobal. As an ethnobotanist, it is van Andel's job to study how cultures utilize indigenous plants and prevent such practices from being lost.

In June, van Andel will travel to Ghana to conduct fieldwork documenting the traditional knowledge of the Fante-Akan people. Van Andel warns of the many consequences that may occur if this traditional knowledge fails to be preserved. "If people do not know their useful plants anymore, or if the plants are gone, people will lose a major source of wild food, medicine, shelter, craft material, fodder, and cash income."

Commercially valuable plants are being overharvested. As a result, the Fante-Akan people now have to walk further in order to find the medicine they need, affecting both their health and survival. Van Andel will specify priority species that are critical to the Fante-Akan people's social well-being, cultural diversity and history, which will help in the conservation of these plants.

Millions of Africans rely on traditional herbal medicine for their primary health care needs simply because they lack access to forms of Western medicine. The indigenous plants used by these cultures contain a myriad of natural chemicals, antibiotic or antifungal properties, essential oils, and tannins, all of which are effective remedies.

Certain plants are also used in centuries-old traditions and rituals. The Ashanti people of Ghana use a specific tree bark to dye the clothing of someone who has died. "The colour of the dye depends on the age and social status of the deceased; each colour comes from a different type of bark," van Andel added. "Even Ghanaians who have migrated to the Netherlands go to great lengths to obtain this dye in Europe, so they can bury their relatives according to tradition."

The protection of Africa's biodiversity is crucial to conserving the cultural heritage of people that depend on plants as part of their way of life. There are many plants that still need to be identified, along with the roles they play in indigenous cultures.

"It is not only essential to preserve traditional knowledge about plants and forests, but also very important to train young scientists in the taxonomy of tropical plants," van Andel said. "Too few botanists or biologists are trained nowadays in collecting, identifying and describing tropical plants." Identifying and protecting plants that are an important part of people's traditions will take time, money and cooperation between governments and academia, van Andel acknowledged. (Source: MediaGlobal in *Traditional Knowledge Bulletin*, 2 June 2010.)

## GUATEMALA

### Revalorization of indigenous knowledge

Wildlife hunting for domestic consumption (subsistence hunting) is a very common activity that is part of the cultural identity of many indigenous communities in Guatemala's rural area, yet it has been poorly studied in our country. However, unmanaged subsistence hunting is a serious threat for wild animal populations and can cause drastic effects and negative alterations in the natural dynamics of ecosystem.

The Ecoregión Lachua is home to 55 Maya-Q'eqchi' communities that still have agriculture and forest use practices, such as wildlife hunting, which are traditionally



carried out in a way that contributes to the sustainability of these natural resources. The Maya-Q'eqchi' cosmovision has many traditional elements that promote and favour a responsible and respectful use of nature.

In 2000, the School of Biology of the University of San Carlos in Guatemala started a subsistence hunting characterization project in communities neighbouring the Laguna Lachua National Park (LLNP) to determine its local tendencies. This study initially started with nine local hunters from five communities who collaborated with the project by filling out forms with the biological information about the animals they hunted.

The result of analyses showed that subsistence hunting is a very important activity for the Maya-Q'eqchi' communities of the study area, because it provides economic and social benefits. As main products of the analysis of these hunting tendencies, a Wildlife reproduction calendar and a Preliminary proposal for subsistence hunting management in local communities of the Ecoregión Lachua were formulated.

The research team began promoting and carrying out participative efforts guided towards establishing a communitarian subsistence hunting management system. These efforts led to the First Communitarian Agreements for Subsistence Hunting Management, which were proposed and signed by leaders/authorities of 15 local communities.

Currently, the staff are carrying out a long-term Participative Bilingual Environmental Education Programme – PBEEP – that emerged from a local initiative. PBEEP aims to give continuance to previous research and management phases through an education, awareness and dissemination phase of the efforts carried out until today regarding conservation, communitarian management and sustainable use of wildlife.

A main cornerstone of PBEEP, which biologists Marleny Rosales-Meda and Maria Susana Hermes carry out with Maya-Q'eqchi' communities that neighbour LLNP, is linking scientific and traditional knowledge to favour the long-term conservation and sustainable use of natural resources in the Ecoregión Lachua. A key objective of this innovative programme is to promote the rescue and revalorization of ancestral Q'eqchi' knowledge that is strongly related to the respectful and responsible use of nature.

Rosales and Hermes, coordinators of PBEEP, proposed to elders and LLNP managers to carry out a different kind of reforestation activity guided towards rescuing and transmitting traditional tree-planting values and wisdom to children and teenagers from five communities of the Ecoregión Lachua. For this purpose, park rangers from LLNP constructed a plant nursery with 1 800 native trees that have important uses (wood, food, medicine) and special meaning for Q'eqchi' people.

This activity is a pioneer reforestation effort where biologists, park managers, elders and the youth of the Ecoregión Lachua work hand in hand in favour of the conservation and good use of trees, considering ancestral respect towards Mother Nature as a cross-cutting topic. (Source: The Guatemala Times in the *Traditional Knowledge Bulletin*, 17 February 2010.)

## INDIA

### Indian government to promote cultivation of medicinal plants

The Hill state government in India has decided to promote cultivation of medicinal plants on a commercial scale in view of the increasing popularity of the traditional system of medicine. The Hill state accounts for over 7 percent of the nation's biodiversity which – if harnessed – can help preserve vanishing herbs and also generate additional income for the people.

According to a survey by the World Health Organization, about 80 percent of the population of developing countries still rely on traditional herbs for primary health care needs. Keeping in view the vast potential for cultivation of some rare Himalayan herbs, the government has taken several initiatives. A separate Herbal Medicine Plant Board has been set up to carry forward such activities in a big way.



A road map has been prepared for large-scale cultivation of medicinal plants, to give thrust to herbiculture, under which 37 herbal and aromatic species of medicinal plants have been selected. Farmers will be able to profit by cultivating these varieties of herbs from their small landholdings.

The state horticulture, forest and Ayurveda departments will be involved in the programme to help farmers grow herbs on private land and in forests and herbal gardens. The government is also providing technical assistance to individuals and cooperative societies for the purpose. The produce will be supplied to pharmaceutical companies manufacturing Ayurvedic and allopathic medicines.

Flora of the state consist of around 3 500 species of plants, of which about 800 species are rich in medicinal value and 165 species are collected for commercial purposes.

The total cultivable wasteland in the state is about 123 000 ha, and growing herbs will go a long way in further strengthening the state's economy. The state is the largest supplier of *chilgoza*, *kuth*, *dioscoria*, *dhoop*, *picrorrhiza*, *valeriana* and *ephedera* in the country. [Source: Tribune News Service [India], 20 June 2010.]

#### Fair price for forest yield

Tribal villagers who make a living out of forest produce will no longer be at the mercy of intermediaries. The government moved to ensure a fair price for minor forest products such as tamarind, mango pulp, *mahua* (*Madhuca longifolia*) and *chiraunji* (seeds of *Buchanania lanzan*) this summer.

Jharkhand State Minor Forest Produce Cooperative Development Marketing Federation Limited (Jhamfcofed) has already purchased numerous tonnes of these products from villagers.

"But more remains to be done. We will purchase 200 tonnes of *mahua*, 20 tonnes of natural gum, 50 tonnes of *chiraunji* nuts and 50 tonnes of half-dry mango flesh this summer," said Ratnesh Chaturvedi, the Managing Director of Jhamfcofed.

The state marketing body was formed in 2007, a year after the Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Rights) Act gave villagers the right to collect minor forest produce. Jhamfcofed, however, took time to create its network and began business in 2009.

Jharkhand's forests yield huge amounts of minor forest products, the prices of which run into several crores of rupees. But the market has so far been monopolized by intermediaries who purchase these products, especially from tribals, at throwaway prices.

Jhamfcofed has already purchased 88.2 tonnes of tamarind from villagers at a rate of Rs20/kg. The price in the open market is around Rs15/kg.

The state body has also bought 267.24 tonnes of *mahua* at a handsome rate of Rs22/kg and 30 tonnes of natural gum at Rs40/kg.

"Jharkhand has a collective minor forest produce market of Rs700–800 crore. But, so far, we have been able to tap a market of Rs1 crore. Large areas remain untapped," Chaturvedi said.

Tamarind, mango and *chiraunji* are processed into food items such as pickles. Besides these, forests produce millions of tonnes of *amla*, *aloevera*, *karanj*, *saal* seed, etc.

Jhamfcofed sells the same to food-processing units. Chaturvedi said that last year, it had earned a profit of Rs10 lakh after doing business worth Rs1 crore. This year, the target is Rs30 lakh with a total investment of about Rs2 crore. [Source: *The Telegraph* [Calcutta, India], 20 May 2010.]



Tamarind

#### Chitral has vast potential in NTFPs

Exploitation of vast resources of NTFPs in Chitral can help fight poverty and raise the living standard of the people. The Deputy Director of NTFPs of Khyber Pakhtunkhwa Forest Department, Iftikhar Ahmed, added that efforts were in progress to exploit the resources on a sustainable basis and for this purpose a complex was being set up in the district for which land had been acquired. The active participation of the local communities must be enlisted and a comprehensive training on natural resource management must be imparted to them.

He said that the villagers would be able to earn a livelihood by using the natural items that otherwise went to waste. He described the medicinal plants in the pastures and forests, honey beekeeping and sericulture as the potential sources, adding that forest conservation was possible only when the locals derived full advantage from the NTFPs. [Source: Chitraltoday Web site, 13 June 2010.]

#### Action to support "pro-poor" forests

In Orissa, India, IUCN member Winrock International India (WII) is working with local communities to manage forests better within a wider agricultural landscape. In a zone between the Simlipal Tiger Reserve and the plain areas, WII plays an active role in the development of forest resources and livelihoods of the forest-dependent people in Orissa. Here, forests contribute about 25 percent of the average income, mostly through NTFPs, of which the income from the sale of sal leaves accounts for more than 90 percent.

WII's work has evolved over time from merely promoting NTFP livelihoods and the conservation of forests to promoting integrated natural resource management in government planning and programmes. With the support of the Ford Foundation, this work has been extended to assist the coordination of forest protection groups and community-based organizations into a federation of local NGOs, called MASS (the Mayurbhanj Swachasevi Samkhya), which today covers around 800 villages in the district. [Source: IUCN Monthly Update, 29 January 2010.]



#### Bioprospecting: a priority for Indonesia

Scientists from the Indonesian Institute of Sciences (LIPI), Conservation International (CI) and other scientific institutions continue to find exciting new species in both our oceans and forests. We can reflect on how our rich biodiversity can benefit Indonesia after these initial discoveries are made.

Scientists work on two levels: those who catalogue the species they find and those who look for scientific innovations based on the unique characteristics of the new species. Biodiversity prospecting or "bioprospecting" seeks to develop commercial uses for these unique genetic characteristics. Examples include quinine

to treat malaria, or new drugs to fight cancer now or in the future.

Bioprospecting is a market-based approach that could support long-term sustainable economic development in a biodiversity-rich country. It can also provide incentives to conserve nature.

However, this can only be done with an honest partnership between local communities – which are the traditional owners of these plants and animals – the private sector and international organizations involved in research and development. In many cases, traditional knowledge includes an understanding of the benefits that different plants and animals provide for humans.

What is needed is a systematic recording of their uses – and the patents or licensing to ensure that the local people who own these resources receive a real, long-term reward for conserving the natural ecosystem that provides such valuable natural products.

If scientists have the task of finding new species and identifying their current or future uses, the government is expected to manage biodiversity, to ensure that species do not disappear. The government is supposed to use these resources to promote national welfare and prevent exploitation. We need to create a harmonized clear government regulation on biodiversity research, development and conservation.

There are two immediate priorities for this legislation.

First, there is a need to form an interministerial commission made up of representatives from the ministries involved in conservation of natural resources and trade.

Second, this commission needs to have one representative with the authority to negotiate terms with pharmaceutical companies and others interested in bioprospecting in Indonesia. At present, there are several agencies in charge of conserving our biological and genetic resources, which creates opportunities for foreign parties to exploit the system for access. Even a third party can approach local people without asking for a permit from an authorized agency. This overlapping management and lack of a legal basis is a barrier to the conservation and protection of Indonesia's biological resources. In addition, permits granted through the proper channels can take months to acquire and, typically, by the

time they are granted, researchers have to return home before their research has even begun.

Together with the governmental involvement in formulating a bioprospecting policy, Indonesia has a tremendous resource in its non-governmental organizations (NGOs). There are well-qualified NGOs working across Indonesia, in hundreds of distinct indigenous communities that each possess their own culture, language group and knowledge of natural resources. We are only just beginning to understand the value and varied applications of indigenous knowledge.

Indonesia has all the tools necessary to make bioprospecting work. It has rich biodiversity, a population both dependent on and traditionally knowledgeable about this biodiversity, a strong NGO community, government institutions working in different areas of the environment, and a developed traditional medicine industry, which puts Indonesia one step ahead of the rest of the world in the exploitation of its biological resources. It also has foreign arboretums and corporations willing to cooperate to make bioprospecting work. What it does not have is the proper arrangement of these elements into one efficiently functioning system. [Source: *The Jakarta Post*, 16 June 2010.]



## LIBERIA

### **Liberian leader bans exportation of bushmeat and wild animals**

Liberian President Ellen Johnson Sirleaf has banned the exportation of wild animals and bushmeat from Liberia.

A Foreign Ministry press statement issued in Monrovia on 28 June says the ban will remain in force pending the passage of a proposed legislation to be submitted to the national legislature for enactment.

The statement said that President Sirleaf is accordingly warning all those involved in the illegal exportation of bushmeat and wild animals to desist with immediate effect or face the consequences. It said the ban is aimed at preserving Liberia's wildlife since certain species of wildlife are under threat of extinction.

The government's ban comes in the wake of reports of an increase in cross-border trade in wild animals and bushmeat from Liberia. [Source: African Press Agency, 29 June 2010.]

## MEXICO

### **Limitantes del marco normativo sobre los productos forestales no madereros en México**

En México los productos forestales no madereros (PFNM) son fuente de ingreso y empleo importante para familias y sectores marginales de la población. Representan recursos que aportan a la calidad de vida y seguridad alimentaria y ayudan a reducir la vulnerabilidad. Son aprovechados de forma silvestre y/o semidomesticada y han contribuido a mantener masas forestales. Son la base material de muchas manifestaciones culturales y forman parte de la identidad cultural regional y nacional.

Reconociendo la importancia de contar con un marco normativo que fomente el buen manejo, es necesario reconocer que actualmente la leyes y su aplicación, en su gran mayoría, están representando barreras y obstáculos para el manejo sostenible y para que los beneficios del aprovechamiento de los PFNM beneficien a sus legítimos poseedores.

Ante la carencia de una reglamentación acorde con el aprovechamiento y uso de los PFNM desde la perspectiva de las comunidades, es necesaria una política pública clara, que reconozca y proteja a los conocedores locales y los involucre centralmente a lo largo de todos los procesos de aprovechamiento.

Como parte del análisis realizado en el simposio sobre los PFNM, en el Iº Congreso Latinoamericano de Etnobiología / VII Congreso Mexicano de Etnobiología (realizado en Pachuca, Hidalgo, del 2 al 6 de noviembre de 2009) y tomando en cuenta la opinión de especialistas en el tema, destacamos la existencia de las siguientes fallas

relativas a la regulación actual de estos recursos en su relación con las comunidades y la responsabilidad social y ética de instituciones educativas-académicas con las comunidades:

- Existen leyes y reglas, son excesivas y no necesariamente garantizan sostenibilidad. Se ocupan más de los trámites que de garantizar las buenas prácticas. Generan altos costos y dependencia de servicios externos.
- Muchas veces hay contradicción entre las leyes y los reglamentos, o poca claridad. Algunas son muy generales, otras demasiado específicas a una realidad, pero no aplicables a otra (como el caso de especies que están en peligro de extinción en una región, pero no en otra).
- La regulación es inaccesible y excluyente.
- El actual esquema de los «prestadores de servicios» propicia el desempeño irregular y no supervisado. En este marco, se ha desmantelado la tradición del extensionismo agropecuario. Se ha insertado en el proceso de aprovechamiento de los PFM, a través de la figura de los «prestadores de servicios»; una instancia de interés privado financiado con recursos públicos, a costa de un rubro de apoyo, cuya operación compete al Estado como parte de su responsabilidad social. Los «prestadores de servicios» han desplazado a muchos egresados universitarios de un espacio de servicio público que debe ser técnicamente competente, éticamente riguroso y metodológicamente dialógico y participativo.
- Las leyes oficiales, en general, no reconocen ni dialogan con las reglas comunitarias. Las instituciones locales (asambleas, consejos de ancianos, rituales, etc) son fundamentales en el diseño, instrumentación y cambio de las reglas comunitarias. A menudo, en las comunidades, sobre todo cuando se trata de recursos de importancia cultural, existen conocimientos, prácticas y reglas para manejarlos. Es frecuente que dichas reglas incluyan elementos éticos de equidad y cuidado de la Tierra. Hay varios ejemplos de especies y ecosistemas que se han manejado de manera sostenible por

cientos de años, basados en este conocimiento tradicional.

- En la mayoría de los casos existe poca o ninguna información científica sobre la cual basar planes de manejo. Falta apoyo para realizar la investigación básica necesaria para fundamentar buenos planes de manejo. Pero para que sea útil, esta investigación debe poner en el centro a las comunidades y sus necesidades; es necesario realizar una investigación participativa, involucrando a los usuarios en cada fase de los estudios, a partir de su diseño.
  - Como parte del problema, en cuanto al papel de las instituciones de investigación – que muchas veces reciben dinero de las empresas – el medio académico, en general, no incide de manera asertiva en la regulación de los PFM. Llega a describir fenómenos pero no pugna por operacionalizar recomendaciones conjuntamente con los involucrados en las iniciativas. Esta automarginación hace que las iniciativas locales de aprovechamiento de los PFM se nutran poco de fuentes académicas.
- Tomando en cuenta lo expuesto anteriormente se proponen las siguientes acciones:

- Se requieren políticas públicas encaminadas a fortalecer las capacidades locales y desarrollar incentivos para comunidades que han mostrado que sus prácticas de aprovechamiento tienen un impacto positivo sobre la conservación, y que esto se valore como elemento determinante en la autorización de permisos de aprovechamiento.
- Es necesario revisar a fondo el esquema actual de selección y operación de los “prestadores de servicios” para que sean las instancias gubernamentales mismas en una relación directa con los pobladores, las que realicen labores de apoyo técnico a los grupos e iniciativas locales de aprovechamiento sostenible de los PFM, teniendo en cuenta la preeminencia de los actores y saberes locales.
- No se niega el papel del conocimiento científico que permite avanzar hacia respuestas técnicas puntuales, es decir, a un aspecto del manejo; por el contrario, se sugiere la investigación científica aplicada que tenga

incidencia real sobre el aprovechamiento comunitario de los PFM y otros aspectos. Fomentar también el diálogo de saberes, que permita tomar lo mejor de cada sistema de conocimiento.

- Dada la actual crisis económica y los escasos recursos que se asignan a la ciencia y al desarrollo de tecnología en México, es necesario supervisar las propuestas de investigación y proyectos sobre manejo de recursos naturales, de manera que respondan a las necesidades reales, sentidas y expresadas por los pobladores rurales, para mantener o recuperar sus complejos sistemas productivos, cuya eficacia ha sido probada por generaciones y cuya afectación actual es propiciada por una regulación excluyente o por una instrumentación excluyente de la normativa actual. La condición actual y el futuro de los PFM está ligado directamente a las condiciones de vida de la población; la desigualdad social y la exclusión que repercuten en la actualidad directamente en la viabilidad de los recursos naturales.

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### Medicinal and aromatic plants and their role in attaining food security in the high hills of Nepal: an experience from Baitadi and Darchula

Medicinal and aromatic plants (MAPs) are an integral component of the rich biodiversity of Asia, especially the Hindu Kush-Himalayan region and the other highland systems in South Asia. MAPs are attracting an increasing attention of both development planners as well as environmentalists because of their multiple functions and potential contribution to improving livelihoods of rural and marginalized communities. MAPs are an integral source of income, medicine, dyes, nutraceuticals, food products and cosmeceuticals, benefiting the poor and landless in mountain and highland regions. The earnings from MAPs have been utilized mainly in gaining food security by most of the people living in the high mountain areas of Nepal.

Baitadi and Darchula are located in the far western part of Nepal and, according to national indicators, are the country's least developed districts. Geographic complexity/remoteness, poverty, food scarcity, illiteracy, fewer economic opportunities, absence of land transportation and communication facilities are the major challenges for development in the district.

A study was carried out using a participatory, consultative and multiperspective (polyvocal) approach, combining both qualitative and quantitative data collection methods. The primary data were collected through 16 key informant interviews, three focus group discussions, 52 household-level questionnaire surveys (21 female and 31 male respondents) and direct observation.

The studies showed that the main source of household production is agriculture and livestock, with MAPs contributing around 12 percent in total household production (5 percent in Baitadi and 18 percent in Darchula). Most of the households agreed that the contribution of MAPs to household production is high. Thirty-nine percent of the respondents agreed that it made a moderate change to their food security, followed by significant change (25 percent), no change (24 percent) and minimum change (12 percent), with no responses for highly significant.

### BAMBOO HOUSES COULD HELP ALLEVIATE POVERTY

Together with providing low-cost and environmentally friendly houses, construction of houses made of bamboo could potentially lead to poverty reduction and employment generation in Nepal.

The Agro Enterprise Centre (AEC), affiliated to the Federation of Nepalese Chambers of Commerce and Industry (FNCCI), has entered into an agreement with the International Network for Bamboo and Rattan (INBAR) for the promotion of bamboo house construction in Nepal. These projects will be undertaken with financial aid from the Common Fund for Commodities (CFC).

These prefabricated bamboo houses are affordable, quick to construct and durable. They can also provide cheap shelter for the relatively poor population of Nepal.

Bamboo houses require minimum technology. Most of the bamboo houses are based on existing local technology, which does not require high-technology tools for construction.

Similarly, these houses can help generate employment opportunities as a greater number of locals can be engaged in their production – from the plantation of bamboo to the construction of houses.

The promoters have also emphasized that these houses can decrease the current dependency on importing foreign raw materials used in construction. The bamboo structures use local materials that do not harm human health and the environment, employing energy-efficient designs. They also employ more people.

Since bamboo can be used as a substitute for timber, it will also help to decrease deforestation. Moreover, bamboo is highly sustainable as it can be regenerated within two to three years, while timber could take longer than 25 years. (Source: Himalayan News Service, 18 April 2010.)



MAPs collection has a significant impact on food security for poor and MAP-dependent people. Similarly, among ten options provided (improved livelihoods; diversified livelihoods; increase in marketing access; increased incomes; increase in knowledge; food security; increase in bargaining power; improved health conditions; improved well-being; and women's status), respondents ranked food security in the first four. Overall food security and increased incomes were ranked first.

It is obvious that the collection and sale of MAPs has a positive impact on food security for the people living in the high mountain areas of Nepal. MAPs are especially important for the poor and for those holding less land; they are one way or the other dependent on MAPs for their daily livelihood.

Some of the major problems encountered by MAPs collectors were improper prices for their collected goods, lack of proper market information, inadequate value addition technology, and inadequate physical infrastructures such as roads and warehouses.

With a better management of MAPs, there would be more possibilities for marginalized and poor households to attain greater food security. (Contributed by: Ram P. Acharya, Executive Director and Rijan Tamrakar, Programme Officer, Practical Solution Nepal.)

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### The potential of neem

Neem is ubiquitous in northern Nigeria, and yet the neem tree's medicinal and economic values remain underexploited. The neem tree (*Azadirachta indica*), popularly referred to in the Hausa language as *Dogon Yaro*, is a tree of the mahogany family with a broad dark-brown stem and widely spread branches. It grows to over 15–20 m in height and produces evergreen leaves with white fragrant flowers and fruits. It is also drought resistant.

Curiously, the tree is everywhere in the northern part of the country: on streets, around houses and in the forests. *Dogon*

*Yaro* does not require any special cultivation techniques or efforts because it grows in the wild. This single quality makes it easy to cultivate and capable of multiplying without difficulty.

The neem tree has both enormous scientific and traditional uses. Almost every part of it is useful: the seed, leaves, bark and trunk. These parts are used in the manufacture of organic fertilizers, pesticides, pharmaceutical products, cosmetics, traditional herbal medicines and animal feed. In countries such as India, neem is used in the manufacture of pharmaceutical products to fight parasitic, fungal, bacterial and viral infections. It has also proved successful in the manufacture of drugs to cure diabetes, infertility and skin diseases.

Dr Yusuf Lawan Idrisa of the Department of Agricultural Economics and Extension Services at the University of Maiduguri is an expert in technology adoption and impact studies. He said his studies show that neem "can also be used to control field pests on farms. It only involves drying the leaves and then grinding them into powder and mixing with water," adding that "neem-based pesticides can be used to reduce the incidences of systemic diseases such as cancer, kidney and liver diseases that arise as a consequence of using chemical-based (non-decomposing) pesticides that leave behind harmful but unnoticed residues".

Neem-leaf based pesticides are biodegradable and have no harmful effects on humans. The bitter taste can be washed away with water.

However, of major importance is the seed from which oil and organic fertilizer can be extracted. The oil can be used in the manufacture of pesticides, pharmaceutical products and traditional herbal medicines. [Source: [www.allafrica.com](http://www.allafrica.com), 6 April 2010.]

## PANAMA

### Conserving endangered orchids

APROVACA is a non-profit grassroots organization of El Valle de Anton that is dedicated to the conservation of endangered native species of orchids, many of which are believed to be on their way to extinction.

Estimates vary, but it is generally considered that Panama is home to no less than 1 500 species of orchids, making it one of the most orchid-rich countries in the world. However, the destruction of rain forests, accelerated by the recent rapid economic growth of the country, is depriving

these flowers of their habitat. In El Valle, in particular, poverty plaguing the local population has led some to pick endangered species in the woods illegally and sell them on the market, posing a real and imminent threat to the orchids.

Concerned about such a situation, APROVACA was created in 2001 in order to protect the flowers from extinction and seek a more sustainable way of development. A number of orchid conservation activities are carried out to achieve this objective, including reintroduction of endangered orchids into their original habitat, environmental education for the public and reforestation. The APROVACA Web site reports: "We grow both the endangered endemic species and non-local horticultural ones in our nursery for different motives. We try to conserve the former by reproducing them, while selling the latter to visitors to raise funds for our ecofriendly activities and to make the very act of gathering wild orchids for profits redundant. Overall, we aim to conserve the local biodiversity and promote an environmentally conscious and sustainable form of tourism."

Because of its unique geographic characteristics – the isthmus connecting North and South America – Panama boasts exceptional biodiversity. Indeed, Panama's estimated 1 500 species of orchids is a far greater number than that of the United States of America and Canada combined, and many of these species are endemic to Panama.

The APROVACA Web site features over 200 photographs of Panamanian orchids.

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## PARAGUAY

### Bamboo against deforestation

Uncontrolled expansion of cattle farming in Paraguay has led to rampant deforestation and introduction of "exotic" varieties says environmentalist Guillermo Gayo. To put a halt to this practice in the southern department of Paraguari, the foundation he heads has implemented what is known as "permaculture".

A decade ago, the Takuara Renda Foundation ("the bamboo place" in the Guaraní language) settled near the town of Sapucaí, on a hilltop that forms part of a remnant of the Atlantic Forest, which extends through parts of Argentina, Brazil and Paraguay, with just 7 percent of its original coverage remaining. The foundation chose an area that had been severely degraded by forest fires and logging. It promotes permaculture, which is the design and maintenance of small productive ecosystems, including the harmonic integration of people and their homes, in order to meet their needs in a sustainable way.

This approach utilizes materials such as *tacuara* cane, a type of bamboo, and plant fibres for bioconstruction. Gayo is not trying to establish bamboo as a crop in the area, but rather is using it to help the degraded forest to recover. "If you cut a branch off the bamboo, another grows in its place. That is how we are replacing the wood," he said.

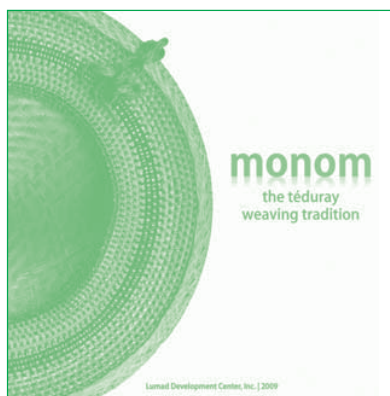
The foundation's landholding is just 6 ha, but its efforts are felt far beyond. On 25 surrounding hectares, a process has begun to expand the forest with larger tree and bush species, and there is an emphasis on preventing fires and halting extensive cattle operations.

"I was surprised by the house made from *tacuara* cane and its furniture," said Myriam Ramírez, a young student from a nearby community who visited the foundation with classmates. Ramírez also participated in workshops about bioconstruction, where she learned about building structures out of bamboo. [Source: *Tierramerica* in Inter Press Service News Agency [IPS], 19 April 2010.]

## PHILIPPINES

### Monom: the Téduray weaving tradition

Daily life for the Téduray revolves around their *safad* or plants, which are considered the extension of the human or animal body; the *barandiya* or things crafted by the Téduray from the materials around them for



various uses; and the *késukat* or means of livelihood to maintain a free, peaceful and progressive society.

Estimates of the Téduray population vary widely, ranging from the 56 000 of a 2004 survey to the approximately 200 000 estimated by the NGO Lumad Development Center, Inc. (LDCI).

One can easily recognize a Téduray household in any community because of the unflinching presence of their traditional baskets. They are known as the symbol of the Téduray, a lasting display of their artistry and flair for craftsmanship.

The general term for weaving is *monom* and includes all kinds of woven handicrafts. The Téduray use the following materials in their weaving: *pawa*, a type of bamboo used for the basket body; *teel*, a type of rattan used for the rim of the basket; *nito*, a type of vine used to sew the rim to the body, and also to make the strap; and *burning*, a dye made of ash from burned tyres or soot from pots used in wood-fired stoves, and mixed with the sap from plants that serves as a fixative.

Commercial logging has denuded the remaining forest in the ancestral home of the Téduray and Lambangian of Upin, resulting in displacement, conflict in the community and a threat to the survival of the indigenous peoples.

LDCI has been promoting weaving as a means to provide income for the people (without cutting trees), while at the same time raising awareness about the importance of the forest and the need to preserve their vanishing weaving culture.

One of the initiatives was to produce *Monom*, a small illustrated booklet highlighting the skills involved in the Téduray weaving tradition. This was only possible with funding support from IUCN's Ecosystems Grant Programme and the Non-Timber Forest Products Exchange

Programme – together with the willingness of the tribal leaders and weavers who shared their ideas and expertise.

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## SOUTH AFRICA

### The socio-economic status of the NTFP subsector in Swaziland

A wide spectrum of NTFPs generally makes a remarkable contribution to the household economy in rural areas, with most communities making a living either from their domestic or commercial use.

The objective of a recent study by Cliff S. Dlamini and Coert J. Geldenhuys of the University of Stellenbosch was to review the current status of the NTFP sector and further compile an up-to-date list of major use categories of NTFPs.

A review of past studies on NTFPs in the four ecological zones of Swaziland indicates the annual economic value of food and drinks, household items, medicinal plants and fuelwood to be at USD1.7, 1.7, 32.1 and 13.8 million, respectively. An analysis of the study on natural resources accounting for the contribution of forests and woodland resources shows that the total value of fuelwood, thatch, edibles, medicines, craft wood, weaving and fodder stand at USD29.6, 1.33, 0.24, 0.10, 0.06, 0.50 and 0.99 million/year, respectively.

This study reviewed past national, regional and international studies and developed a new list of 18 NTFP use categories subdivided into direct, indirect and intermediate uses. Subsequently, a matrix of commonly used botanical NTFPs was designed and includes species such as *Sclerocarya birrea*, *Bauhinia galpini*, *Berchemia zeyheri*, *Dichrostachys cinerea* and others.

However, the study concluded that there is still a profound lack of information on the status and total value of NTFPs and recommended that governments, NGOs, the private sector, communities and other interested and affected parties (including resource users) should work together to conduct research in order to generate,

compile and disseminate information on the quantitative and qualitative statistical data on NTFPs, their socio-economic uses and ecological and environmental values.

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## SUDAN

### Beekeeping and the Bongo people

Beekeeping is the principal activity of the Bongo people in Aguko village in Warrap state, southern Sudan. Chief Sultan Arkanzelo and local beekeepers showed some of their hives and how they are made.

Hives are constructed from split bamboo woven into a cylinder 2 m long and 30 cm wide. This is then coated with mud mixed with the fibres of a creeper called *luyu* (possibly a *Cissus* species). The fibres are slippery and make the mud stick to the bamboo. The hive is then covered with a layer of grass and a second woven bamboo cover is constructed around it. This three to four layer hive ensures that, even if it is put in a tree with little foliage, it will not be affected by heat from the sun. Each end is closed with a palm leaf circle made from *Borassus aethiopicum*. A third entrance may be made halfway along on larger hives.

When the hive is complete, a hole is made in the ground and the bark of *Vitellaria paradoxa* (shea butter tree) is burned and the smoke allowed to infuse the hive for 24 hours. Hives will last five to eight years if well made. The hive is placed horizontally about 4 m high in a tree to avoid damage when the grass is burned. Hives are placed at any time of year and bees normally enter fairly soon. After about one year of being occupied, the first harvest can be made, with a further two later on. Harvesting usually takes place in March, May and September, with a total of about 10 litres of honey being obtained per year. A special grass is used to produce smoke, and at each harvest, combs are only taken from one half of the hive. A central core of comb is left and, as far as possible, only ripe honey is harvested.

Honey forms the main currency for the Bongo people, with any remaining comb being used for brewing. Beekeeping is done only by men, as is all the hive construction work. Honey is sold for approximately SDD4 (USD1.50) per 500 ml bottle and beekeepers have no difficulty in selling it. (Source: *Bees for Development Journal*, Issue No. 95, June 2010.)

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## SYRIAN ARAB REPUBLIC

### **Nature reserves maintain biodiversity, activate ecotourism in Tartous**

Nature reserves play an important role in achieving sustainable development and preserving the stability and balance of the environment in the coastal Syrian province of Tartous. They also provide a suitable environment for conducting scientific research and protecting biological diversity.

Tartous province is famous for its natural and artificial forests which extend over the western cliff of the coastal mountains, since the province embraces four nature reserves: East al-Shaara, al-Nabi (Prophet) Matta, Qarkafti and al-Kahf (Cave) Forest. The Director of the Biological Diversity and Nature Reserve Department in Tartous, Hiba Salhab, said the reserves were established because they enjoy a rich biological diversity, hosting various rare plants, while surrounded by several archaeological monuments.

Salhab pointed to the key role of the reserves in activating ecotourism, while preserving these natural areas. She underlined the importance of forests in the reserves in cleaning the air of pollutants and industrial gases.

The Director of Tartous Forest Department, Hassan Salih, said "the reserve of East al-Sharaa was established to preserve oak and terebinth trees, in addition to protecting rare plant species such as maple, Syrian pear, fir trees and some species of oak trees".

The reserve was established with the aim of preserving the mountainous ecosystem and the forests in the area and protecting endangered animals, as well as

increasing animal diversity and protecting the perennial medicinal and seasonal plants. Medicinal plants growing in the reserve include thyme, wild garlic, hyssop, dandelion, narcissus, *Artemisia* and lilies.

The reserve is also a destination for ecotourism. (Source: Syrian Arab News Agency, 22 June 2010.)

## TAJIKISTAN

### **Mulberry on the roof of the world**

There still exist pristine places without industry and pollution where people live in harmony with their environment. One of them is the autonomous province of Gorno-Badakhshan in Tajikistan. Although its area (about 65 000 km<sup>2</sup>) extends over half the country, only 3 percent is habitable. Most of it is covered by the Pamir Mountains, sometimes called the "roof of the world". The few villages are sited in valleys beside rivers and the population tries to cultivate every piece of available land.

The mulberry is an important food for these valleys. Introduced from China via the Silk Route, it is perfectly adapted to the difficult mountain environment, where it grows between 1 100 and 2 400 m (replacing crops such as wheat and barley that cannot be grown at these altitudes).

There are now more than 60 varieties of mulberry in the Pamir region, the result of centuries of selection and adaptation. They can be eaten raw or transformed into jam, syrups or *pikht* – a flour – which is usually mixed with other seeds and cereals.

The local inhabitants mainly grow mulberry for family consumption: in summer, families put as many as 20–30 sacks of dried mulberry aside as a reserve for the winter. In the local culture, the

mulberry tree and fruit are associated with beauty: the berries are traditionally given to a couple to make their life sweeter and, before starting to build a new house, a mulberry tree is planted.

During some crisis periods, such as the Second World War or the extended civil war that afflicted the country until 1997, mulberry played a crucial role in providing the main nutrition for the local population. The community of mulberry producers from Khorog has been part of the Terra Madre network (Slow Food) since 2004 and is working to defend the traditional Pamir customs of eating mulberry, which have significantly decreased in recent years with the spread of industrial products. (Source: *Platform for Agrobiodiversity Research*, 5th Newsletter, 24 March 2010.)

## THAILAND

### **Poachers turn fungi farmers to save forests**

Nuan Muangchan began to log rosewood illegally as a teenager, creeping at night into Thailand's largest national park and hiding from animals and rangers to smuggle out her loot. Thailand's lush jungles are under daily attack by illegal loggers and poachers, but conservationists in the country's northeast are turning to an unlikely remedy – the common mushroom.

A project that turns former wildlife criminals into fungi farmers is proving a surprising success, giving villagers a decent wage while helping to slow the destruction of forests in the Khao Yai National Park, a World Heritage Site. Under the scheme, set up by Thailand's Freeland Foundation, Nuan now has her own business as a mushroom farmer and no longer relies on precious rosewood, prized for its perfumed sap, as her only means of regular income. And she has persuaded her 33-year-old nephew Boonrod to join her in abandoning the illegal work. Boonrod said he earns USD300 a month from his mushroom farm – a relatively good income in this impoverished rural belt and enough, he said, to stop logging.

Education levels are low in the northeastern region of Isan and most villagers are landless, with many relying on daily hire for farm or construction work to provide for their families. As well as giving potential mushroom farmers all the start-up tools they need, the Freeland





Foundation also trains park rangers, who arrest an average of two poachers or loggers every week. But they said that prosecution alone has not been effective in reducing wildlife crime. "We have to use two strategies: push and pull. The rangers push the poachers out of the forest but we need to pull the villagers into an alternative occupation and convince them to change," said Mukda Thongnaitam from Freeland.

In its efforts to reduce these illegal activities, the Freeland project consulted villagers on their skills and surveyed the local market to see what would sell, before plumping for mushrooms as an alternative income source. The organic oyster mushrooms are sold at the local market and have proved so popular that the farmers cannot grow enough. "At this stage we still cannot meet market demand so we need to expand this project to other villages," said Mukda, who hopes to begin growing *yanagi* or straw mushrooms, and shiitake, which can fetch a higher price. (Source: AFP, 21 January 2010.)

## TRINIDAD AND TOBAGO

### Forests ... much more than timber

In observing World Forestry Day on 21 March, the Environmental Management Authority (EMA) encouraged the people of Trinidad and Tobago to take time to appreciate the value of the country's forest resources. Historically, forests have played important social and cultural roles in the lives of many people, especially those of indigenous communities.

Today, many are realizing that forests offer much more than just timber. Forests provide recreational opportunities and contribute to health and well-being, as well as the regulation of local temperatures and

protection of drinking-water supplies. Trees form the foundation of many natural systems and, as such, provide a wide range of products (timber, fruit, medicine, beverages, fodder) and services (carbon sequestration, windbreaks, water quality and quantity control, coastal protection, shade, beautification, erosion control and soil fertility). The forests of Trinidad and Tobago are home to a wide variety of faunal biodiversity, which facilitate pollination, seed dispersal and germination.

This internationally recognized environmental day is also set aside to promote education and awareness of the importance of forests and the benefits of planting trees. Examples of biodiverse forests in the country include the Matura National Park, which was declared an environmentally sensitive area in 2004, and Main Ridge Forest Reserve in Tobago, which is the oldest protected watershed in the western hemisphere, declared in 1776.

For these reasons, EMA embraced the opportunity to collaborate in a project with the Ministry of Planning, Housing and the Environment; the Forestry Division of the Ministry of Agriculture, Land and Marine Resources; the University of the West Indies; and the Institute of Marine Affairs, among others. The project is called the Nariva Restoration and Carbon Sequestration and Livelihoods Project.

This project will ultimately see the replanting of 1 300 ha of the Nariva Swamp, in areas that were formerly deforested by large-scale rice farmers more than a decade ago. Nariva Swamp, the country's largest and most biodiverse wetland, was declared an environmentally sensitive area under the Environmentally Sensitive Area Rules, 2001. It has the most varied vegetation of all wetlands in Trinidad and Tobago, with distinct zones of tropical rain forest, palm forests, mangroves and grass savannah/marsh. (Source: *The Guardian* [Trinidad and Tobago], 20 March 2010.)



*Coffea* spp.

## UGANDA

### Important woody species, their management and conservation status in Uganda: a case study of Balawoli sub-county

Woody species are threatened everywhere in the world. Loss of species such as these can lead to much suffering among the people who traditionally rely on them to satisfy their needs. To safeguard livelihoods, therefore, it is important that these species are protected.

The aim of this study was to generate information that would contribute to the design of robust management plans for the conservation, and increase, of woody species cover in Uganda. The study was conducted in Balawoli sub-county, in eastern Uganda, between July 2009 and January 2010, and addressed the following questions. (1) Which species are most preferred? (2) What is the conservation status of woody species and for which species have changes in local availability been observed? (3) What tree management practices exist? (4) Which tenure rights exist for trees?

Data were generated through both ethnobotanical and ecological surveys by interviewing respondents and conducting measurements on trees in plots selected at random in the landscape.

Analysis of the respondents' responses showed that 17 species are valued most highly within the community. The priority species are multipurpose and commonly have more than three uses. Altogether, these species have 25 different values for the community. The most frequently harvested products from the woody species are edible fruits, firewood and timber. The value of these species as a source of income appears to be low (only 4 percent of the respondents mentioned it).

Eighty-five woody species were found in the ecological survey. Of these, 17 appear to have a good conservation status because they were fairly well distributed and relatively abundant. Only six of the highly valued species had a good conservation status.

According to local perceptions, the species *Milicia excelsa* (uvule), *Albizia coriaria* (musita), *Combretum molle* (ndaha), *Terminalia glaucescens* (musasa), *Coffea* spp. (mwanyi), *Combretum collinum* (mukoolakoola) and *Citrus* spp. (mangada) are becoming scarce. On the other hand, the species *Artocarpus*



## Priority woody species of Balawoli sub-county

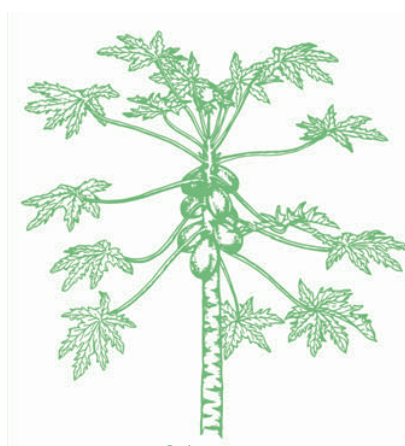
Species (and local name)	Main products	Other products
<i>Mangifera indica</i> (muyembe)	Edible fruit, firewood	Medicine, shade, income, charcoal
<i>Maesopsis eminii</i> (musizi)	Timber, firewood	Income, poles, shade, soil fertility, medicine
<i>Artocarpus heterophyllus</i> (fene)	Edible fruit	Firewood, timber, shade
<i>Citrus aurantium</i> (mucungwa)	Edible fruit	Firewood, income
<i>Milicia excelsa</i> (muvule)	Timber	Firewood, charcoal, construction, shade, rain formation, medicine
<i>Ficus natalensis</i> (mugaire)	Shade	Bark cloth, fodder, firewood, timber, edible fruit, poles, charcoal, windbreak. Does not out-compete crops
<i>Coffea</i> spp. (mwanyi, coffee)	Income	Edible fruit
<i>Eucalyptus</i> spp. (kalitunsi)	Timber	Poles, firewood, income, medicine, windbreak
<i>Albizia coriaria</i> (musita)	Timber	Firewood, charcoal, construction, medicine
<i>Pinus</i> spp. (pine)	Timber	Income, firewood, edible fruit
<i>Persea americana</i> (ovacado)	Edible fruit	Firewood, medicine
<i>Carica papaya</i> (papali)	Edible fruit	
<i>Ficus sycomorus</i> (mukunyu)	Shade	Timber, firewood, charcoal, intercropping, construction, windbreak
<i>Senna siamea</i> (gassia seed)	Firewood	Shade, poles, timber, beautifying compound
<i>Markhamia lutea</i> (musambya)	Poles	Firewood, timber, shade
<i>Citrus reticulata</i> (mangada)	Edible fruit	Medicine
<i>Citrus limon</i> (nimu)	Edible fruit	Medicine, firewood, timber, income

*heterophyllus* (fene), *Mangifera indica* (muyembe), *Ficus natalensis* (mugaire), *Citrus aurantium* (mucungwa), *Acacia* sp. (miwa), *Senna siamea* (gassia seed), *Eucalyptus* spp. (kalitunsi), *Pinus* spp. (pine), *Carica papaya* (papali) and *Lantana camara* (kapanga) are known to be increasing in their availability. There was low consensus between community perceptions and the results of the ecological survey about which species were declining or which were increasing in availability.

The main factors believed to be leading to the disappearance of some species, according to the respondents, include overharvesting; destructive harvesting to produce charcoal, firewood, timber and poles; attacks by pests; non-planting of trees by farmers; and droughts. On the other hand, the key factors leading to the success of some species are that they are planted because they are useful; are drought resistant; regenerate naturally; are easy to manage; mature quickly; and their seedlings are available.

Farmers stated that they maintain many woody species (51) that they plant or retain when found growing naturally on their

land. The common tree husbandry practices are planting, protecting trees against damage and pruning to encourage sprouting. Trees are propagated mostly from seedlings. Some farmers are constrained in planting trees by lack of seedlings, by pests, drought and lack of land. Species are managed mostly in crop fields, courtyards and home gardens. Men own trees in the homestead, and are more involved in tree management and the sale of tree products than women.



*Carica papaya*

In conclusion, many woody species, including the most highly valued ones, appear to be declining in availability. Efforts by extension workers and others interested in maintaining trees on farms should focus on the 17 priority species identified in the table. Second, there is a need to address the key threats identified here, namely poor markets for tree products, destructive harvesting for timber, and wood for construction and charcoal-making. The existing opportunities that have led to increases in some woody species in the area should be exploited.

One specific and pragmatic action to stimulate tree planting should be to increase the motivation of farmers to plant trees by promoting and creating markets for tree products. Improvement of markets or creation of markets will call for investigations into value chains of selected species/products. Additionally, and following respondents' suggestions, there is a need to improve access to water, access to planting material, and to control pests. There is also a need to improve understanding of the germination and seedling establishment behaviour of the priority species by conducting investigations both in experimental gardens and on farms.

The collaboration of farmers in tree planting is likely to lead to increased availability of the priority species without increasing the diversity of woody species. The protection of this diversity, therefore, remains the responsibility of the local administration, which should undertake, among other actions, the reforestation of its district reserves and tree planting on public lands such as road reserves.

Lastly, this study was conducted in eastern Uganda, but the loss of species is occurring all over Uganda. It is necessary to have the study replicated in the different agro-ecological regions of Uganda in order to capture the entire diversity of priority woody species for the country.

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## UNITED KINGDOM

### **Bees for Development helps African beekeepers to trade their way out of poverty**

First Minister, Carwyn Jones, last week visited Bees for Development's Cameroon Honey Trade Project under way in partnership with the Welsh company Tropical Forest Products Ltd. Bees for Development is an international development organization based in Monmouth, Wales, United Kingdom, working to help African beekeepers trade their way out of poverty through selling honey and beeswax.

The Welsh Assembly Government's "Wales for Africa Grant Scheme" is funding Bees for Development to work with Tropical Forest Products Ltd in this project, which aims to produce a Welsh-designed honeycomb separator that will assist Cameroonian beekeepers to improve the quality and yield of their honey and beeswax.

Michael Tchana, Director of the Cameroonian organization Guiding Hope, visited Wales in March to work on the honeycomb separator, with the aim of increasing honey and beeswax exports to Wales in the forthcoming months.

The products will be sold through Tropical Forest Products Ltd, Wales' only registered fairtrade importer. The project outcomes will be shared widely with other beekeepers in Africa and Wales through the information network of Bees for Development.

With the United Kingdom producing less than one-third of the honey it eats, the honey trade presents a real economic opportunity for people in developing countries endowed with natural resources, but with limited financial capital. Bee diseases are highly prevalent in industrialized countries and most beeswax produced is contaminated with the chemical residues of bee medications. African beekeepers have a strong comparative advantage, as they are custodians of the largest remaining wild honey-bee populations in the world, thriving and free from introduced pests and diseases. (*Source: press release, 14 April 2010, Bees for Development.*)

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## UNITED STATES OF AMERICA

### **Totems of Georgia's turpentiners**

The turpentine industry was central to life in south Georgia for 100 years. The work and the profits are gone now, but George Music, Jr is determined to maintain the face of his occupational legacy.

On George Music Road on the outskirts of Waycross, Georgia, a chute of dirt and sand leads into what feels like an infinite pine forest. At the end of the road – and at the centre of this forest – sits the century-old home to three generations of turpentiners in the Music family. Close by is the mobile home of 50-year-old George Music, Jr, the only remaining member of the Music family to have worked in the turpentine woods. These woods and the old home are Music's birthplace.

In the 1970s, the livelihood of turpentine, the only work many people here had ever known, became unreliable, then impossible, a consequence of new technologies, alternative industrial sources of turpentine, and cheaper foreign labour. George Music and his father were forced to acknowledge that the dwindling returns they were receiving per barrel of pine resin would not be enough to sustain their family business much longer.

Today, George Music's forest stands much as it would have before turpentiners ever ventured into this part of the American South. The woods sit silent and empty, devoid of the labour that for so long clattered here. Yet Music's land still bears evidence that his forest was, for nearly a century, devoted to the extraction of crude gum for producing turpentine. Most striking about his property today is that seemingly every other tree in this forest is missing much of its bark. In its

place is a gash extending vertically as much as 10–12 feet (3–3.6 m) from the base of the tree.

Working turpentine required a unique scarification of the tree trunks: using a combination of hacks, turpentiners removed the pine bark to tap into the "veins" of the tree. Once wounded, pine trees secrete resin on to the surface of the wound as a protective coat to seal the opening, prevent sap loss, and resist exposure to pathogenic micro-organisms. Turpentiners wounded trees in V-shaped streaks down the length of the trunks so as to channel resin into cups, where it was collected and processed into the spirits of turpentine. The V-shaped streaks – called "catfaces" for their resemblance to a cat's whiskers – are unmistakably the marks of a turpentine. Half a century ago, most counties in the southern half of Georgia maintained at least 100 000 faces, and some kept over 500 000 in production.

Over the last several decades, however, these telltale signs have become increasingly scarce, as the turpentine industry has declined and timber and construction companies have cleared the forests. At alarming rates, catfaced trees have been sawn down, turned to paper, crumpled, and tossed into garbage cans. Those that do remain are few and far between.

Today, Music stands firm against pressures to surrender his vast extent of natural standing timber for commercial use.

In most forests of what was once the turpentine belt, the sounds of turpentiners' hand tools have been replaced by the racket of mechanized timbering and the frenzy of industrial deforestation. Pine forests today crack with the force of bulldozers, the buzz of



saws and clatter of rattling chains. But not on George Music's land. Indeed, both Music himself and the thick forest that envelops his homestead represent an unusual set of circumstances.

When entrepreneurs dealing in naval stores (turpentine and other resinous products used on wooden ships) first arrived along the Georgia-Florida border, they ventured into old-growth pine woods much like George Music's – forests of virgin timber that had stood for hundreds of centuries, never planted by human hands. Over time, forest after forest toppled like dominos, and naval stores operations were continuously forced to locate new stands of timber in order to survive. It was not until turpentiners had migrated from points north into the pine belt of south Georgia and north Florida that forest researchers discovered how to grow pine trees quickly enough to generate renewable stands of timber.

Most estimates suggest that a sprawling 156 million acres (63 130 960 ha) of natural-standing pine once blanketed the American South, before humans exploited the forests for industry. In the centuries prior to European settlement in south Georgia and north Florida, Native populations of Oconee, Apalachee, Creek and Timucua found their expansive forests a source of food and shelter, defining wealth in terms of what the forests willingly bestowed rather than by what they could seize from the pines. Since at least the 1600s, however, the region's old-growth forests have fallen victim to the monetary value of their resinous properties and, most destructively, of their own lumber. For centuries now, old-growth pines have been negligently sawn, chopped, hacked, and plucked from the earth. The damage was such that by 1952 just 72 million acres (29 137 366 ha) of natural standing timber remained on the southern landscape – less than half of the pine cover from presettlement times. [Source: Daily Yonder [Texas, United States of America], 10 June 2010.]

### Trees offer many immigrants a taste of home

The rush-hour rainstorm did not faze Sara Shokravi as she parked in Rosslyn, Washington, DC. Shokravi, a 27-year-old consultant, pulled out a plastic bag, stopped at a tree laden with red and black berries, and started picking.

It would not have been a strange sight in her native country, the Islamic Republic of Iran, where at this time of year entire families can be seen laying out sheets and shaking trees to collect the berries, which they eat fresh, dried or blended into juice. Here, she acknowledged, her foraging prompts "funny looks". "This is Washington, DC – people aren't going to go out of their way to get something if it's not in a store."

They do not know what they are missing, say mulberry fans, most of whom are immigrants. Just the sight of fruit-laden trees can conjure up sweet memories for people who grew up in the Middle East, Central Asia, the Caucasus and the Far East.

Mir Farid Hashimi, 39, a native of Afghanistan who lives in Woodbridge, said his family makes a day of picking the berries in Maryland parks.

Yet, despite its firm place in nursery rhymes, the fruit of the mulberry bush, or tree, has never caught on in the United States of America. One reason may be that its thin skin makes it hard to transport commercially: the berries taste best immediately after picking. The white ones are light and subtle, almost perky, but the black ones, the ones that stain fingers and lips, are luscious and dissolve on the tongue in a sweet, dusky swirl.

Most people in the Washington area do not know this. Nevertheless, most Americans, if they think about mulberries at all, see them as a nuisance. The soft berries squish underfoot, splat on to cars, and carpet sidewalks and driveways with a sticky mash that, as summer heats up, emits a cloying scent of decay. In the District, the trees are considered a weed. They grow quickly, often sprouting in untended areas, such as between chain-link fences or along road embankments.

"I didn't even know the fruit was edible to the human," said John Thomas, Associate Director of the District's Urban Forestry Administration. "We allow people to remove mulberry trees without any permit because it's such an invasive tree."

The British were partly responsible for that invasion. Although the Washington area has a native red mulberry tree, the most common ones in town are descendants of trees brought over by colonists eager to compete with the silk industry of the Far East. Silkworms feed on the shiny, heart-shaped leaves, especially those on the white trees, said

Alan Whittemore, a botanist at the US National Arboretum.

"For many years, it was a requirement," he said. "If you owned property in the Virginia area, you were required to plant a certain number of mulberry trees each year." The experiment fizzled: silk production required labour that was cheap but skilled, and tobacco proved more profitable.

But the mulberry trees liked Washington and, with the help of birds, who eat the berries and expel the seeds, their population swelled. They now number in the thousands.

Mulberries are not the only "secret harvest" known mostly to immigrants. Natives of East Asia flock to ginkgo trees to harvest the seeds, said Yao Afantchao, ethnic and speciality crops specialist at the University of the District of Columbia, and immigrants from West Africa gather wild amaranth to cook as greens.

In some cities, including San Francisco, New York and Portland, Oregon, the trend has expanded beyond ethnic communities, with urban foraging tours pointing out such delicacies as mustard greens, edible mushrooms and snails. [Source: *Washington Post*, 7 June 2010.]



### Illegal bushmeat, wildlife trafficking at alarming levels

Viet Nam's ecosystems are being seriously threatened by the widespread consumption of wild meat and trafficking of wildlife, experts said at a recent conference. Urgent action is needed on several fronts to prevent this destruction of the nation's wildlife and their habitat, they said. They called for strengthened, more effective public awareness campaigns against hunting and trafficking in wild animals and for the inclusion of this subject in the school curriculum, especially in rural areas.



Tom Osbon of the Viet Nam-based Wildlife Management Office stressed the need to legalize multisectoral cooperation in preventing, discovering and punishing forest violations in order to protect wild animals effectively. "It is also very important to establish special inspectors in localities which record a high number of violations," he added.

Dr Scott Robertson, head of the Wildlife Conservation Society (WCS), said that hunting wild animals for meat and trafficking had been happening in many countries, especially developing ones. In Viet Nam, hunting and trade in wild animals had been alarming, he said.

A WCS study conducted at 200 restaurants in the central region found they consumed nearly two million wild animals per year. Among them, stags and wild boars accounted for around 70 percent of the consumed meat, followed by turtles, snakes, foxes and porcupines.

The study estimated the demand of wild animal consumption nationwide at nearly 4 500 tonnes per year.

The Forest Protection Department discovered 1 042 violations of wild animal protection laws last year, a decrease of 400 cases over 2008. Dr Nguyen Viet Dung, deputy head of the Centre for People and Nature Reconciliation, said that the real number was much higher.

Robertson added that Viet Nam was also an important link in the international wild animal trafficking chain. Last year, authorities found more than six tonnes of elephant tusks trafficked from Africa to Hai Phong City. [Source: Viet Nam News, 22 March 2010.]



### The untapped fruit potential

Fruit is an important food security commodity. Not only does it provide the necessary nutrients for both rural and urban households, but it is also a source of extra income through sales conducted almost all year round.

Zambia is endowed with different varieties of fruit trees, both exotic and indigenous. The tropical climatic conditions in the country provide opportunities for the cultivation of various types of fruit species such as mango, papaya, bananas, guava, passion fruit, loquat, pineapples, avocado, citrus fruit, apples, pears, peaches, pomegranates, apricots, plums and grapes.

Beyond the cultivated species, there are a large number of indigenous fruit species such as *masuku*, *mabungo*, *monsoso*, cashew nuts, *masau* and *mpundu* which, if exploited, could contribute to the economic development of the country and reduce poverty mainly in rural areas.

These fruits, especially indigenous species, are well adapted and can ensure household food security during periods of natural disasters such as droughts.

The production and processing of fruits are labour intensive and therefore provide employment for a large segment of the population.

According to the FAO paper on NWFPs in Zambia, exotic fruit trees such as mango, guava, papaya, avocado and mulberry have been a permanent feature in homesteads and some even grow naturally in open areas without any human interference. These, together with a number of wild fruits, form a nutritious supplementary food in seasons when agricultural crops become scarce.

Species such as *Anisophyllea* and *Uapaca* are common features along main roads and at markets between October to January, when they are offered for sale. The other species that are offered for sale include *Annona senegalensis*, *Azanza garckeana*, *Diospyros mespiliformis*, *Flacourtia indica*, *Strychnos cocculoides*, *Strychnos spinosa*, *Tamarindus indica* and *syzygiums*.

Almost all exotic fruits have been on the market and still continue to command a place in almost every market countrywide.

With the present harsh economic conditions, many more fruits are entering into the trade market and are gaining

importance as major household income and food security commodities.

Trade in fruits and fruit trees could, therefore, create employment for many Zambians and offer a potential commodity that could break into international markets if well researched.

Many of these are highly consumed in numerous rural and some urban settings but have not been offered for sale previously because of the great abundance in past years when they could not fetch a good price.

However, most fruit trees are becoming significant trade commodities as many species continue to become scarce at the local level because of deforestation brought about by the demand for woodfuel and agricultural expansion.

The future is, therefore, expected to be an upward trend in sales of many fruit trees, both exotic and indigenous, as the population increases and alternative income sources become scarce. [Source: allafrica.com, 20 February 2010.]



**An individual has not started living until he can rise above the narrow confines of his individualistic concerns to the broader concerns of all humanity.**

*Martin Luther King, Jr*