

non-wood NEWS

EDITORIAL

Arriving at our ninth issue and looking back over a time span of nine years since the first issue of *Non-Wood News* in 1994 provides us with a unique opportunity to reflect on and take stock of the "lessons learned" in preparing this newsletter.

The purpose of *Non-Wood News* is still as valid now in 2002 as it was in 1994.

Quoting the Editorial of the first issue: *The purpose of Non-Wood News, as an information bulletin, is to provide readers with useful information and insight about the promise that the future holds in the field of non-wood forest products (NWFPs) and the issues to be addressed with regard to their sustainable development.*

In view of the numerous contributions and feedback we receive from readers worldwide, we hope that we have indeed contributed to more information sharing on NWFPs among a wide range of people from different backgrounds and countries. With the increased accessibility to electronic communications, the NWFP-Digest-L was initiated in 2000 as a monthly e-mail information bulletin to strengthen and contribute

further to easier information exchange among people interested in the development of NWFPs.

In addition, *Non-Wood News* also became available online through our NWFP Web site, which contains all previous issues of both *Non-Wood News* and the NWFP-Digest-L, in order to facilitate access to the wealth of information which has been accumulating over these nine years.

Regarding the second point of the purpose of the newsletter, i.e. "... about the promise that the future holds in the field of NWFPs", there indeed we still need to work hard to make this "promise" a reality for the millions of households worldwide who depend heavily on NWFPs for their subsistence needs and income. In response to this challenge, FAO's NWFP Programme, which in its early stages gave strong emphasis to activities on raising awareness of the role and contribution of NWFPs to rural development and poverty alleviation, is now giving greater importance to the activities which contribute directly to the development of the NWFP sector. Key actions include the elaboration of methodologies for assessing resources providing NWFPs, statistical data at the national level for the production and trade of NWFPs, or further clarification of the contribution of certification and benefit-sharing arrangements to the sustainable management of NWFPs, as well as the promotion of selected NWFPs of key importance, such as rattan, edible forest plants or mushrooms, by identifying major constraints and actions and projects required for enhancing their sustainable and equitable development.



NON-WOOD NEWS

is compiled by Tina Etherington, Wood and Non-Wood Products Utilization Branch (FOPW) of the FAO Forest Products Division. Technical support for this issue was provided by Paul Vantomme, Sven Walter and François Ndeckere-Ziangba; design, graphics and desktop publishing were coordinated by Tina Etherington.

Non-Wood News is open to contributions by readers. Contributions may be edited to fit the appropriate size and focus of the bulletin. If you have any material that could be included in the next issue of *Non-Wood News* for the benefit of other readers, kindly send it, before 15 January 2003, to:

NON-WOOD NEWS – FOPW
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www.fao.org/forestry/nwfp/nonwood.htm
FAO home page: www.fao.org

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 - *Revista Forestal Centroamericana*
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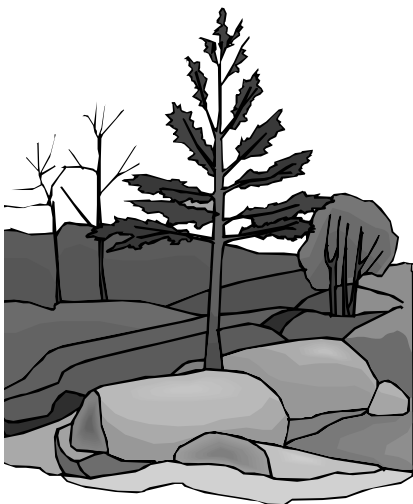
EDITORIAL

In the meantime, there have been some changes in the staffing of FAO's NWFP Programme. Ms Laura Russo has taken up new responsibilities within FAO and is now dealing with the assessment of the environmental impact of forest harvesting. Laura has been with the NWFP group, and particularly with *Non-Wood News*, almost since its conception. We want to thank her for her tremendous and much appreciated contribution and wish her every success in her new assignment. At the same time, we welcome Mr François Ndeckere-Ziangba who has joined us. François has considerable experience with a wide range of forestry issues and knowledge of NWFPs of Central Africa to share with us.

I would like to take this opportunity to give special thanks to the person who actually makes it all happen, Ms Tina Etherington. Without her dedication and many long hours of work in compiling *Non-Wood News* and the NWFP-Digest, we would not even be able to produce them.

And, last but not least, all of this would not have been possible if it were not for the many reactions and text contributions we receive from you, the readers. After all, *Non-Wood News* is made by its readers for its readers. Again our sincere thanks go to all of you.

Paul Vantomme



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- Bangladesh, Brazil, Cameroon, Canada, Chile, Honduras, India, Jordan, Kenya, Lao People's Democratic Republic, Lebanon, Malaysia, Morocco, Nepal, Nigeria, Pakistan, Papua New Guinea, Russian Federation, Somalia, South Africa, Thailand, Turkey, Uganda, United Kingdom, United Republic of Tanzania, Viet Nam, Zimbabwe

Non-wood forest products (NWFP) are goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests. Non-timber forest products (NTFP), another term frequently used to cover this vast array of animal and plant products, also includes small wood and fuelwood. However, these two terms are used synonymously throughout this bulletin. Other terms, such as "minor", "secondary" or "speciality" forest products, are sometimes used to keep original names and/or titles.

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BUSHMEAT

Commercial trade in wild animals threatens species and deprives poor communities of food.

Bushmeat – a resource at risk

The next time you go to a restaurant in Africa and bushmeat is on the menu, think before you eat. The chances are that the animal on your plate is the victim of commercial hunters, whose activities are robbing African communities of important natural resources and the world of irreplaceable biodiversity.

“Along with habitat loss, the commercial bushmeat trade is probably the biggest threat to wildlife in Africa,” says Douglas Williamson, an FAO wildlife expert. Bushmeat is the meat of animals who live in forests, from gorillas to rodents.

The devastating impact of the bushmeat trade is global, but Africa’s paradox is that the continent contains both the world’s highest levels of food insecurity and some of its richest and most vulnerable biodiversity. In the continent’s marginal environments, what threatens wildlife also threatens the food security of people. Commercial hunting deprives local populations of crucial food.

Emotive images of dead gorillas have highlighted the situation in West Africa, where forests already depleted by logging contain fewer species of larger mammals than do savannah regions. But wildlife across the continent is under threat. “The death of what conservationists call ‘charismatic’ animals attracts publicity,” says Mr Williamson. “But increasing demand for bushmeat and declining wildlife populations mean that smaller species are targeted as well.”

Natural fauna have important ecological roles in forest ecosystems – some tree seeds, for example, will not germinate unless they pass through the digestive tract of elephants. Therefore, the extinction of indigenous species can change ecosystems in unpredictable ways.

“Rural communities depend on bushmeat because domestic meat is too expensive,” says Mr Williamson. “But the

growing commercial market in the cities is driving the trade – and this urban fashion for bushmeat feeds off rural poverty. Basically, a rich man hands out guns and a few pennies to the locals, and then goes back to the city with a fortune in meat.”

Other forest products and activities that generate revenue are also threatened by the booming and illegal bushmeat trade. These include animal parts used for medicinal and ritual purposes, photographic safaris and trophy hunting – the backbone of eastern and southern Africa’s multimillion dollar tourism industry.

Statistics on the bushmeat trade are hard to come by because it is usually illegal, and reports are informal or misleading. But an FAO report written in 1997 cites figures of more than 1.2 million tonnes of bushmeat (excluding elephants) harvested in just one month in Nigeria. And a 2001 survey of eastern and southern Africa by TRAFFIC, an organization that monitors the wildlife trade, reveals a widespread unregulated slaughter by commercial hunters.

Increasing demand and declining wildlife have given rise to unsustainable hunting. “Peak hunting periods coincide with the dry season when vegetation is less dense, which makes the hunting easier,” explains Mr Williamson. “In one incident in Mozambique, commercial hunters shot more in one night than the whole village ate in a year. But the commercial hunters don’t care – they don’t live there.” And that, he says, is the root cause of the rise in the bushmeat trade. “Traditional community wildlife management mechanisms have been replaced by state responsibility,” he



Species No. 34 - 2000

explains, “so nobody feels they own the forest, and wildlife is considered ‘fair game’ to the person who gets there first or can pay the biggest bribe.”

Hunting sustainability

Bushmeat is a huge industry, but many developing countries lack the capacity to collect taxes or enforce hunting regulations, and bribery of poorly paid local and national officials is a problem. Moreover, wildlife protection has generally consisted of punitive and selective laws aimed at protecting a few charismatic animal species while ignoring the needs of surrounding human populations.

Attitudes have changed in the last two decades, and FAO is helping to promote dialogue among organizations working in environmental conservation, commercial use of forest resources and rural development. FAO cohosted a bushmeat workshop last September in Cameroon and is working with other United Nations agencies and conservation organizations to implement a major project in West Africa that designates forests as World Heritage sites – areas of irreplaceable value needing international protection – and encourages community management of wildlife. And this, according to Mr Williamson, is the key to the bushmeat crisis. “Without community management of forest resources, the threat to wildlife will grow. If communities are the main beneficiaries of the resources, they will have an incentive to manage them well.” (Source: www.fao.org/news/2002/020203-e.htm)

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The sustainable use of wild species for meat
 The countries with the richest and most diverse levels of biodiversity also have the highest levels of human poverty and food insecurity. The utilization of wild meat is part of this overall dilemma and solutions

SPECIAL FEATURES



to overexploitation of biodiversity will require finding ways of addressing human needs and promoting a more equitable and ethical sharing of global resources.

In recognition of the need to bring together the conservation and development communities as partners in preparing and implementing the actions needed to address the issue effectively, and in response to the World Conservation Congress Resolution 2.64, the World Conservation Union (IUCN), FAO and Trade Records Analysis of Flora and Fauna in Commerce (TRAFFIC) organized a workshop from 17 to 20 September 2001 in Yaoundé, Cameroon. The workshop was attended by 47 participants representing 18 organizations.

Participants agreed that activities should focus on three areas: a holistic approach including improved intersectoral cooperation; improved management of wild meat resources; and effective incentives for sustainable use of natural resources. Under each of these themes, specific activities were defined and, where possible, implementation plans were developed.

The Cameroon workshop communiqué is available from the IUCN Web site (www.iucn.org/info_and_news/press/wildmeat3.html). (Source: *Species*, No. 36.)



Bushmeat Crisis Task Force

The Bushmeat Crisis Task Force (BCTF), founded in 1999, is a consortium of conservation organizations and scientists dedicated to the conservation of wildlife populations threatened by the commercial hunting of wildlife for sale as meat. BCTF's primary goals are to:

- work with the general members of BCTF to focus attention on the bushmeat crisis in Africa;
- establish a database and mechanisms for sharing information regarding the bushmeat issue;
- facilitate the engagement of African

partners and stakeholders in addressing the bushmeat issue; and d) promote collaborative decision-making, fund-raising and actions among the members and associates of BCTF.

According to BCTF, bushmeat has become the most immediate threat to the future of wildlife populations in Africa. Animals commonly used as bushmeat include elephants, gorillas, chimpanzees and other primates, forest antelopes or duikers, crocodiles, porcupines, bush pigs, cane rats, pangolins, monitor lizards and guinea fowl. Many animal species are being hunted at a rate that outpaces their ability to reproduce and replenish their populations.

The primary goals identified by BCTF are the general education of key international decision-makers about the problems of wildlife poaching. The group also supports its members' efforts in the areas of public education, proposal development, catalysing local action, disseminating information and archiving.

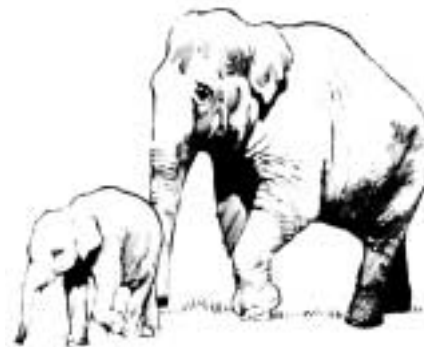
In its new plan, the group details specific long- and short-term actions to take place in both the United States and Africa. Short-term actions include forming hunter and market seller trade associations; building the physical and technical capacity to control trade routes; brokering linkages among non-government organizations, governments and private industry; public outreach and raising awareness; and developing economic and protein alternatives to wildlife hunting. Long-term actions include new wildlife management policy development, sustainable financing for conservation activities, public education, and protected area management and monitoring. Specific steps included in the plan are assisting in the development of national wildlife policies, addressing issues related to food security and poverty reduction, and strengthening existing wildlife protection measures.

Dr Michael Hutchins, chair of the BCTF Steering Committee, stated that this unmanaged and unsustainable hunting has the potential to result in a human tragedy of immense proportions. "Some 60 percent of the protein needs of rural

Africans are currently met by bushmeat and, if the forests are emptied of their wildlife, then what will become of the people?"

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<http://ens.lycos.com/ens/may2001/2001L-05-22-06.html>



Hunting in the Taï region, Côte d'Ivoire

Game is an important food resource in West Africa, but in Côte d'Ivoire hunting is forbidden. Hans Ulrich Caspary and his colleagues argue that only the regulated reopening of hunting will reduce poaching in protected areas. Sustainable wildlife management is urgently needed. Poaching is a typical phenomenon throughout Côte d'Ivoire and the Taï region, at the border with Liberia, is no exception. The influx of migrants has increased the pressure on land and the marginalized farmers need access to game resources for their animal proteins and to supplement their income. The illegality of hunting means, however, that the marketing of bushmeat does not generate any income for the state, while the local population has no say in wildlife management. These problems could be solved under a new sustainable game management strategy. To support such a strategy, a study was carried out under the Tropenbos Côte d'Ivoire Programme in

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1998-1999 to shed light on different forms of hunting and the various links in the bushmeat supply chain in the Taï region.

The results showed that in the Taï region there are about 73 000

subsistence hunters, 2 200 semi-professional and 220 professional hunters. In the periphery of the park there are about 20 000 subsistence hunters, 600 semi-professional and 60

professional hunters. The yearly game takeoff by the subsistence hunters, who operate principally in the peripheral zones of the park, is estimated to be between 1 500 and 3 000 tonnes and is valued at US\$1.5 to \$3 million. The hunters' catch, mainly rodents and other small game, reflects the impoverished range of wildlife. The professional hunters' takeoff, working in the park itself, is estimated at between 56 and 720 tonnes (valued at US\$43 000 to \$920 000). Monkeys and Bovidae dominate the hunting catch.

Hunting in the Taï region is highly destructive. In order to preserve the unique biodiversity of this and other regions, sustainable wildlife management models need to be developed. These models should combine protection and utilization and be applied in close collaboration with all parties concerned. (Source: H.-U. Caspary, I. Koné, C. Prouot and M. de Pauw. 2001. *La chasse et la filière viande de brousse dans l'espace Taï, Côte d'Ivoire*. Tropenbos Côte d'Ivoire Series 2. Tropenbos International, Wageningen, the Netherlands. ISBN 90-5113-148-1. Price: €20.)

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RELATED LINKS: DOCUMENTS AND NEWS ARTICLES

Defining the way forward for more community-based management of forests
www.fao.org/waicent/ois/press_ne/english/2002/2680-en.html

FAO warns of "bushmeat crisis" caused by excessive hunting of wild animals for food
www.fao.org/waicent/ois/press_ne/presseng/2001/pren0114.htm

International experts discuss options for combating illegal forest practices
www.fao.org/waicent/ois/press_ne/english/2002/2240-en.html

Wildlife and food security in Africa (FAO Conservation Guide No. 33)
www.fao.org/docrep/w7540e/w7540e00.htm

Wildlife management for rural development in sub-Saharan Africa
www.fao.org/docrep/t8850E/t8850e03.htm#TopOfPage

Conserving World Heritage Forests in Africa
www.unfoundation.org/grants/9_14_conserving_world_heritage_forests_in_africa.asp

Conservation, food security and the use of wild species for meat
www.iucn.org/info_and_news/press/wildmeat.html

Creating a revolving fund for wildlife in Zambia
<http://biodiversityeconomics.org/incentives/topics-303-41.htm>

Food for thought – the utilization and trade of wild meat in eastern and southern Africa
www.traffic.org/bushmeat/

Hunting of wildlife in tropical forests

Hunting for wild meat in tropical forests, especially with increasing commercialization, is both extirpating many species of mammals and birds and destroying a critical resource base for forest-dwelling people. This report describes the extent of the crisis, and summarizes its implications for biodiversity conservation and the well-being of tropical forest peoples. Recommendations are made on institutional ways to control the trade and economic mechanisms to reduce demand.

<http://lnweb18.worldbank.org/essd/essd.nsf/f308a5a687dbdec8852567eb00658cb7/2660fd7345e87cff8525696900550ac1?OpenDocument>

National Geographic story: "Bush meat" crisis needs urgent action
http://news.nationalgeographic.com/news/2001/05/0522_bushmeat.html





The Jane Goodall Institute

African forests teemed with wildlife at the turn of the nineteenth century. Compare that with the African forests of today. Recent figures indicate that fewer than 150 000 chimpanzees – our closest living relatives in the animal kingdom – remain in the African wilderness, where one to two million lived in the year 1900.

The most recent crisis to have evolved is one that threatens not only chimpanzees, but also other great apes and species of flora and fauna in the African forests. As logging roads are cut into previously unreachable areas, the hunting of wildlife for bushmeat – once a practice supporting forest peoples – has become commercial, catering to the cultural preference of many urban dwellers for the meat of wild animals and also supplies the logging camps with food. How serious is the problem? The commercial hunting of bushmeat could well lead to the loss of several species, including chimpanzees, gorillas and elephants.

Along with an array of other groups and individuals around the world, the Jane Goodall Institute – and Dr Goodall herself – is addressing this crisis. Dr Goodall continues to educate the public in North America, Europe, Africa and the Far East about the horrors of the commercial bushmeat trade and its potential consequences. Through continuing efforts, the institute has begun a Congo Basin Project to explore ways in which we can make a difference on the ground, promoting alternative patterns of economic development that would benefit both people and wildlife. The Congo Basin Project is striving to eliminate the illegal commercial bushmeat trade in endangered species, and regulate the legal trade, as part of an integrated approach towards sustainable forest resource management with the participation of the forestry industry, governments and local communities. Our proposed programmes are increasingly focusing on the role of community stakeholders, and especially women, in the commercial bushmeat trade, in order to provide local populations with the opportunity and ability to live sustainably.

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“Do we really care that within 15 years there may be no chimpanzees or gorillas or elephants, or any other amazing beings, roaming the forests of the Congo Basin and other parts of Central and West Africa. Does it matter?

That is something everyone must ask in his or her own heart. We are not asking for charity to help save the wildlife – and ultimately the people – of African forests. We are asking for a collective investment in the future, and in a legacy that we can be proud of. We do not have much time left. We must act now.”

Dr Jane Goodall

RELATED LINKS: WEB SITES

FAO News & Highlights archive
www.fao.org/News/new02-e.htm

FAO Forestry home page
www.fao.org/forestry/

CAMPFIRE

Since 1975, Zimbabwe has allowed private property holders to claim ownership of wildlife on their land and to benefit from its use. Under CAMPFIRE, people living on Zimbabwe’s impoverished communal lands, which represent 42 percent of the country’s land area, claim the same rights of proprietorship. Conceptually, CAMPFIRE includes all natural resources, but its focus has been on wildlife management in communal areas, particularly those adjacent to national parks, where people and animals compete for scarce resources. Since its official inception in 1989, CAMPFIRE has engaged more than a quarter of a million people in the practice of managing wildlife and reaping the benefits of using wild lands. www.campfire-zimbabwe.org/

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) - www.cites.org

IUCN – World Conservation Union
www.iucn.org

IUCN Species Survival Commission
www.iucn.org/themes/ssc

The Bushmeat project
<http://bushmeat.net/>

TRAFFIC

The wildlife trade arm of the World Wide Fund for Nature and the World Conservation Union - www.traffic.org

World Conservation Monitoring Centre
www.wcmc.org.uk



Trade in bushmeat

Wildlife throughout Africa, South America and Asia is threatened not only by habitat destruction, but also by hunting for the live animal trade, for food, skins, medicine and other products. The focus on the trade in wild meat (also referred to as bushmeat) has been increasing in recent years. The trade is primarily on a local to national scale, with the majority of meat being consumed within the country of capture, although a small percentage does cross national borders. By comparison, the level of wild meat trade in African species found outside Africa is far less significant. However, as ethnic African populations outside Africa continue to grow, so too does the demand for wild meat and this has resulted in wild meat being imported into European countries. It has been found on sale in outlets in Brussels, Paris and London, as well as at points of import in Spain and the United Kingdom.

On 15 June 2001, in the first conviction in the United Kingdom for offences relating to the smuggling of wild meat, the two proprietors of a shop in London, which offered wild meat for sale, were each sentenced to four months' imprisonment for illegally importing and selling CITES specimens, some in the form of wild meat. All the species involved are listed in CITES Appendix II (EU Annex B) and, as such, their importation into the European Union requires an import permit.

As awareness of the wild meat trade has grown, governments as well as conservation organizations have taken up this issue. Wild meat was on the CITES agenda at the meeting of the Conference of the Parties in 2000 and resulted in the formation of the Bushmeat Working Group. This trade is a key focus of the programme of Trade Records Analysis of Flora and Fauna in Commerce (TRAFFIC). In addition, a number of other non-governmental organizations (NGOs), chiefly through the Ape Alliance in the

United Kingdom and the Bushmeat Crisis Task Force in the United States, have also focused attention on this subject.

Law enforcement agencies are now more aware of the possibility of wild meat being imported from Africa, and are faced with the challenge of trying to identify species offered for sale from the animal parts or whole animal carcasses. (Source: *TRAFFIC Bulletin*, Vol. 19, No. 1 [2001].)

[Please see under *International Action – Convention on Biodiversity* – for more information on bushmeat.]

BIOMETRICS

The last decade has witnessed a steep increase in interest and activities concerning NWFPs. The current interest in NWFPs among conservationists, foresters, development workers and indigenous peoples' groups has prompted numerous initiatives aimed at promoting NWFP use and commercialization as a means of improving the well-being of rural populations and, at the same time, conserving existing forests.

These initiatives are rarely linked to studies on the sustainable exploitation of the products that are promoted, and no accurate information is available on the resource abundance, distribution and reproductive biology, which is necessary for the determination of the biologically sustainable harvest levels of a product.

Although there is often considerable indigenous knowledge for specific NWFPs, formal resource assessment of NWFPs, especially in tropical countries, is relatively new and has received little attention to date. The multitude and variety of NWFPs, the multiplicity of interests and disciplines involved in NWFP assessment, the organizational and financial constraints, the lack of globally, or even nationally, recognized common terminology and units of measurement all contribute to make the assessment of NWFPs, and of the resources providing them, a difficult task.

To raise awareness of the importance of accurate and precise resource

assessments at all levels of forest use for NWFPs, and to provide guidance on the design and selection of appropriate methods for resource quantification in different situations and for different products, a publication was prepared, *Resource assessment of non-wood forest products. Experience and biometric principles*, in which a review and analysis of the wide range of approaches used and developed to date to measure NWFP resources was made. However, the methodology proposed still needs to be tested and fine-tuned to specific NWFP types, such as for assessing fruits, barks, lianas, roots, etc. The EC-FAO project aims to produce tools for inventory of NWFPs.

[Please see the following articles for more information on the publication and the EC-FAO project.]



Design of techniques to assess non-wood forest products in ACP African countries (EC-FAO project, component 4)

Non-wood forest products make important contributions to livelihoods in Africa, especially for people living in poor rural areas. These contributions encompass edible foods, medicines and income generation. In addition, such NWFPs also provide various food products for local markets and raw material for local industries creating local employment. Because of the increasing demand, these products need to be sustainably managed otherwise they will disappear. The lack of sound knowledge on the distribution in the forests, on the abundance and on the yield growth dynamics of the NWFP resources constitutes a real uncertainty for their wise management. These resources, therefore, are constantly under threat, preventing people from managing



them sustainably. The intention for designing component 4 of the EC-FAO project GCP/INT/679/EC (Data Collection for Sustainable Forest Management in ACP Countries – Linking National and International Efforts) is specifically to provide a response to this problem through the development of practical inventory guidelines and tools to assess NWFP resources. National forest services, NGOs and local people in ACP African countries will also use this to design policy and to manage sustainably their forests providing NWFPs. Without such assistance, these populations are unable to benefit fully from the NWFP resources in the forest areas near their homes.

In the project design, a two-way traffic for the exchange and provision of practical knowledge was recognized as an important means for the identification of major problems facing the assessment of NWFP resources. A lack of reliable data prevents the setting up of priorities for the design of an appropriate NWFP resource assessment policy or NWFP management device that better suits the needs and work conditions of people in ACP African countries. By the end of 2002, the FAO Forest Products Division

with European Commission financial support hopes to elaborate guidelines so that people in ACP African countries henceforth benefit from the management and utilization of the NWFP resources occurring in natural forests.

The main project objective is to develop practical NWFP inventory guidelines that include biometric rigour and test protocols, taking into account the different specific life forms and occurrence period of the product.

The expected outputs of component 4 of this project are to:

- hold an international expert consultation on NWFP resource assessment and produce draft NWFP resource assessment guidelines;
- review and evaluate at the broad level and compile current work on NWFP resource assessment in African ACP countries;
- test draft NWFP resource assessment guidelines in the ACP African subregion through case studies on selected products;
- produce final NWFP resource assessment practical tools and hold a workshop to discuss the results of case studies and review implementation of newly developed guidelines.

Expert Consultation, English-speaking African countries

An expert consultation was held in Lusaka, Zambia from 15 to 17 October 2001 in which 14 experts from nine countries participated. The meeting objectives were:

- review and amendment of draft inventory guidelines to improve the methodological approach suggested for the final document;
- identification of main problems underpinning progress in the development of NWFP resource assessment;
- verification through field tests of three specific NWFP life forms of inventory protocols for the elaboration of the final guidelines;
- development of partnerships within the region for collaboration on NWFP issues.

As a follow-up to the Lusaka meeting, the development of three case studies testing draft NWFP inventory protocols on three different products was recommended. National experts were selected to carry out these case studies in Kenya, Malawi and Zambia and work is already under way. The three case study reports and the final report of the expert meeting will be completed by mid-2002.

CASE STUDIES

The following three case studies are being carried out to field-test the draft protocols developed for inclusion in the final document of NWFP inventory guidelines.

Case study No. 1. The purpose is to test the hypothesis that local knowledge can be used as a basis for biometric quantification of seasonal wild mushroom production. The site selected for the study is the Perekezi Forest Reserve in the Mzimba District of Malawi. The study will be closely carried out with local mushroom collectors. The study team will accompany the collectors into the

forest and enumerate the size, species and productivity of the collection sites.

Case study No. 2. The purpose is to compare inventory techniques for single product versus multiple products for selected NWFPs. An inventory will be made for six species (*Uapaca kirkiana*, *Anisophyllea boehmii*, *Parinari curatelifolia*, *Strychnos cocculoides*, *Rhynchosia insignis* and *Satyria siva*) in Mwekera National Forest, Zambia. The first inventory will use systematic sampling and enumerate all species. Then three to six other inventories will be undertaken depending on the characteristics of the species found in the study sites.

Case study No. 3. The aim is to develop methods for estimating average densities and fruit yields of baobab trees. An inventory will be made of baobab tree (*Adansonia digitata*) density and fruit yields of individual trees to enable resource planning of the trees' fruit production. Suitable and appropriate resource inventory techniques for NWFPs to estimate plant densities (combination of local knowledge and known adaptive clumped sampling as assessment methods) will be identified and selected. During the fieldwork, non-conventional forestry sampling methods will also be used for the quantification of fruit yield per tree.



Taiga-news - No. 36 - 2001

Consultation d'experts, pays francophones d'Afrique

Une consultation d'experts de pays ACP francophones d'Afrique sur l'évaluation des ressources des PFNL s'est tenue du 12 au 15 février 2002 à Yaoundé, Cameroun. Les co-organisateurs de la réunion étaient la Division des produits forestiers de la FAO, le Bureau de la FAO au Cameroun, le Ministère de l'environnement et des forêts et le Centre pour la recherche forestière internationale (CIFOR).

Le but de la Composante n° 4 du programme de l'Union européenne sur les produits forestiers non-ligneux (PFNL) est de contribuer au soutien de la gestion durable des forêts, dans les pays ACP d'Afrique. Le développement des guides pratiques d'inventaire des PFNL ainsi que le suivi du test d'expérimentation de ceux-ci constitueront l'essentiel de cette contribution.

Le but de tels guides est de permettre aux administrations nationales des forêts et d'autres dépositaires appropriés d'améliorer et d'assurer un suivi régulier des ressources fournissant les PFNL, ainsi qu'un développement soutenable des régimes de récoltes de ces produits, notamment en faveur des communautés locales.

En parallèle avec d'autres projets, deux réunions d'experts ont été planifiées en vue de:

- revoir les méthodes courantes utilisées pour l'élaboration des guides d'inventaire;

- contribuer à l'amélioration de l'avant-projet sur les guides d'inventaire des PFNL en cours d'élaboration; et
- partager des expériences personnelles et institutionnelles sur les inventaires des PFNL.

Les objectifs généraux

Développer des guides pratiques pour l'évaluation des ressources des PFNL afin de contribuer à une gestion soutenue des forêts dans les pays ACP d'Afrique.

Objectifs spécifiques

La réunion de consultation avec les experts des pays ACP francophones d'Afrique visait les objectifs spécifiques suivants:

- Informer les experts sur les objectifs du projet GCP/RAF/354/EC et présenter les résultats de la revue littéraire sur les méthodes courantes ainsi que l'approche proposée pour le développement des guides d'inventaire des produits forestiers non ligneux y compris les documents techniques préparés à cet effet.
- Revoir et modifier l'ébauche des guides pratiques d'inventaire des produits forestiers non ligneux et améliorer si possible l'approche méthodologique proposée pour la conception des guides plus appropriées pour l'inventaire de telles ressources.
- Identifier des problèmes se posant lors de la conception des guides d'inventaire des produits forestiers non ligneux et suggérer des solutions potentielles pour résoudre ces problèmes.
- Valider les résultats des travaux de Lusaka sur les sujets thématiques tels que les clés scientifiques, les idées directrices pour la conduite des études de cas pour le test des protocoles et les grandes lignes du format de présentation du document final des guides.
- Identifier quatre produits dans des pays différents pour le test sur les problèmes prioritaires relatifs à l'application et la fiabilité des protocoles d'inventaire proposés par la consultante de la FAO.
- Enfin créer un partenariat entre les

experts pour faciliter les échanges d'expérience et de connaissance sur ce nouveau secteur émergent qui est celui des inventaires des produits forestiers non ligneux.

La rencontre de Yaoundé a été un véritable succès au regard des objectifs qui sont atteints, notamment la participation massive des experts dont le nombre atteignait le double de ce qui était initialement prévu (30 personnes au lieu de 15) et, surtout, de la médiation de l'événement par les moyens de communications mobilisées par les autorités locales.

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Resource assessment of non-wood forest products. Experience and biometric principles – new publication in FAO's NWFP series

A new publication in FAO's NWFP series is intended as reference material for practitioners considering inventory of NWFP resources. Through review and analysis of experience it provides an overview of biometric issues in the design of NWFP inventory in the following areas:

- a description of the range of approaches used and developed to date and their biometric adequacy; and



ÉTUDES DE CAS

Les quatre études de cas ci-dessous ont été proposées pour le test souplesse et de flexibilité sur le terrain des protocoles d'inventaire des PFNL avant d'être inclus dans le document final des guides d'inventaire des PFNL. Pour réaliser le programme de l'étude, le consultant devra se servir du document de protocole d'inventaire élaboré dans le cadre de la préparation des guides d'inventaire des PFNL d'une part et, d'autre part, la notice sur les idées suggérées par la Réunion de consultation des experts de Yaoundé.

Étude de cas n° 1. Estimation de la quantité des feuilles de *Combretum micranthum* disponible pour le prélèvement. Le but de l'étude, qui sera réalisée au Bénin, est de quantifier la masse foliaire des feuilles par unité de surface et hauteur moyenne par la méthode d'échantillonnage aléatoire à surface fixe carrée de 1 000 m² (31,62x31,62 m) sans compromettre à la survie de la ressource.



Combretum micranthum

Étude de cas n° 2. Estimation de la quantité des écorces de *Pausynlara yohimbe*. Ainsi l'étude visera à développer des techniques de quantification de l'écorce du Yohimbé au niveau des tiges et des branches de la ressource et comparer la productivité de celles-ci avec du fût (tronc). Cette étude, qui sera réalisée au Cameroun, permettra de déterminer la quantité optimale de produit à prélever sur une tige tout en

garantissant la pérennité de la ressource.

Étude de cas n° 3. Développement d'une méthode pour la récolte des lianes (*Gnetum* sp.) en vue d'assurer une gestion durable de ce produit. Le consultant chargé de mener l'étude veillera à développer une méthode de quantification de la ressource et la tester sur le terrain en vue de sa validation pour assurer une gestion durable du produit dans la région du bassin du Congo. Cette étude sera réalisée dans la Forêt de Ngotto en République centrafricaine.

Étude de cas n° 4. Techniques de quantification des *exsudats* et plus précisément de la gomme de *Sterculia setigera*. L'objet de l'étude sera de déterminer la production saisonnière en gomme dans une parcelle inventoriée (à partir du nombre de pieds disponibles par chasse de diamètre). Les conclusions de cette étude, qui sera menée au Tchad, permettront de proposer une approche pour la gestion soutenable de cette ressource.

- a suggested method for selecting appropriate biometric methods for resource quantification in different situations and for different products.

This publication will be of most interest to people with some previous knowledge of the basics of inventory. It is based on the outputs of Forest Research Programme (FRP) pre-project ZF0077 (of the United Kingdom Department for International Development [DFID]) on the biometrics of current NWFP resource assessment methods. This project organized a workshop which brought together a range of people interested in NWFP assessment to discuss the need for quantitative assessments and to decide on priority research themes. The workshop was held in Rome in May 2000 and was hosted by the European Tropical Forest Research Network

(ETFRN) and FAO. The workshop endorsed the findings of the review and provided the impetus for the publication of this paper.

Jennifer Wong wrote the review paper and the final draft of the publication was prepared by Jennifer Wong, Kirsti Thornber and Nell Baker. FAO undertook the publishing in its Non-Wood Forest Products series, within the framework of a current partnership programme with the European Commission aimed at developing methodologies for NWFP assessment.

The publication has been translated into French and Spanish and is accompanied by a trilingual CD-ROM.

Copies of all three versions can be purchased from FAO's Sales and Marketing Group (publications-sales@fao.org).

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"Non-Wood Forest Products (NWFP) consist of goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests."

"Les produits forestiers non ligneux sont des biens d'origine biologique autres que le bois, dérivés des forêts, des autres terres boisées, et des arbres hors forêts."

"Productos forestales no madereros son los bienes de origen biológico distintos de la madera derivados de los bosques, de otras tierras boscosas y de los árboles fuera de los bosques."

(FAO's working definition)

ANTICONVULSANT ACTIVITY OF INDIAN HERB



Rubia cordifolia

Scientists from Nagpur University, India, have found that the compound triterpene extracted from *Rubia cordifolia*, a climbing herb that grows extensively in the Himalayas and the northwestern hills of India, possesses considerable anticonvulsant activity. The team collected dried roots and rhizomes of *Rubia*, prepared an extract in acetone, and fractionated triterpene crystals out from it. The scientists reported the details of their procedures in the *Indian Journal of Experimental Biology* and said that the triterpene crystals produced an antidepressant effect on the central nervous system. (Source: *MFP News*, Vol. XI, No. 4 [October-December 2001].)

ASOCIACIÓN PARA LA CONSERVACIÓN DE LA CUENCA AMAZÓNICA

La Asociación para la Conservación de la Cuenca Amazónica (ACCA), a través de su proyecto «Conservando castañales», viene trabajando desde 1997 en el desarrollo del manejo de bosques de castaña en Madre de Dios, Perú, y ha generando resultados de investigación básica y aplicada así como políticas para promover la conservación de los bosques de castaña a través del manejo sostenible de los mismos.



Manejando bien tu castañal

«*Manejando bien tu castañal*» y «*Mejoramiento del sistema de cosecha de castaña (Betholletia excelsa) en Madre de Dios y sus impactos en la economía del productor castañero*» son frutos del programa «Mejoramiento de sistemas de cosecha de castaña en Madre de Dios», un componente del proyecto «Conservando castañales», dedicado a la implementación, difusión y capacitación del manejo forestal en los bosques castañeros. El proyecto ha sido ejecutado por ACCA en consorcio con la Asociación de Extractivistas de Castaña de Madre de Dios (ASECAM) y el Instituto Nacional de Recursos Naturales (INRENA), y ha recibido el apoyo financiero de la Agencia para el Desarrollo Internacional de los Estados Unidos (USAID) a través de su programa de donaciones BIOFOR.

Estos manuales recogen algunas experiencias de manejo en el

aprovechamiento de la castaña dentro del bosque, así como el mejoramiento de los sistemas de transporte, recolección y almacenamiento destinados a minimizar los costos de producción y mejorar la calidad del producto.

Para más información, dirigirse a:

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[Véase mayor información en la sección Publications of Interest.]

AYURVEDA

The Ayurvedic healing system has its origins in India and has been practised for thousands of years. The final goal is perfect health. The system uses careful application of natural healing methods, e.g. herbs, minerals, healthy nutrition, etc.

Demand for Ayurvedic medicines on rise
If Nepal utilizes its abundant potential in Ayurvedic science, considerable foreign currency could be earned by selling Ayurvedic medicines abroad. Moreover, it would also help replace the huge amount of allopathic medicines the country imports each year.

According to a survey conducted by the Industrial Information Centre (ICC), Nepal imports NRs 7 billion worth of allopathic medicines each year. Of this, up to 25 percent is spent on importing Ayurvedic medicines.

The people practising Ayurvedic science see plenty of opportunities to develop this as a major source for earning foreign currency. In view of its geography, Nepal could be a centre for unique Ayurvedic treatment, if the methods of treatment are modernized.

Ram Narayan Shah, Managing Director at Singhadurbar Vaidya Khana, says that the demand for Ayurvedic medicines is on the rise owing to the low risks or the



absence of any side effects and their easy availability. Shah considers that the production of herbal medicines is not enough to fulfil internal demand. Although the traditional medical practitioner or Vaidya and Ayurvedic doctor or Kaviraj prescribe herbal medicines produced in the country, they have no other option than to sell medicines imported from across the border. According to ICC, many herbal medicines (such as Chiraito, Amala, Pachaunle, Jatamashi, Harro and Pakhanbet) are exported to India and the finished products are re-imported into Nepal. If Nepal could do the processing, it could boost the country's economy.

Shah admits that there is a need for research into the processing of Ayurvedic medicines. The Singhadurbar Vaidya Khana is the biggest Ayurvedic manufacturer in the country and produces medicines amounting to roughly NRs 12.5 million each year.

In the Ninth Five-year Plan (2054-2059), the government has accorded due priority to promote Ayurved in the country. In the upcoming Tenth Five-year Plan (2059-2063), the government is in the process of giving extra emphasis to the development of Ayurved.

A regional summit at the South Asian Association for Regional Cooperation (SAARC) level on Ayurved was held in Nepal in 1991. The summit had prepared a framework to prepare a common agenda for the development of Ayurvedic science. However, so far nothing has been done. An independent survey has shown that the demand for Nepalese Ayurvedic medicines in Europe and the United States is also on the rise. (Source: Extracted from *The Rising Nepal*, 23 December 2001, quoted in <tp-tibmed-plants> Vol. 3, No. 4 [October-December 2001].)



What is equivalent to the biodiversity here, to the things that surround us, is my life. If you took these things away, it would be like taking part of my life, and then my survival would be questionable.

(Pera, Bakalaharil tribe, Botswana)
(Source: *Biodiversity – a crucial issue for the world's poor*. DFID, UK. ISBN 1-86192-341-4.)

BIOPROSPECTING OR BIOPIRACY?

Biopirates raid trees

The bintangor tree, which grows in swampy ground in the Malaysian part of Borneo, may have its uses. But it certainly does not look as if it is worth about US\$360 million. It looks like what it is – a rubber tree that grows to a height of about 10 m, with a diameter of 12.5 cm and long waxy leaves.

The native Dyak people, who still live in the jungle in the Malaysian state of Sarawak, know that the poisonous latex that oozes from it can be used for stunning fish, and that a poultice made from the bark will ease headaches and skin rashes. But even after an American scientist turned up and took away samples, none of the Dyaks realized what vast potential riches the tree contains.

But, if tests carried out in the United States are to be believed, the humble bintangor contains buried treasure: a treatment for HIV and AIDS. Clinical trials show that a drug called Calanolide A, originally extracted from the tree's latex, reduces the levels of the AIDS virus in the blood. It also works against tuberculosis. The drug is several years away from being sold commercially, but if it is – and if it is as profitable as other anti-HIV drugs – it could earn as much as US\$360 million a year. And the Dyaks may not see a penny.

The discovery of Calanolide A in the Sarawak jungles is one of the great successes of a new profession:

bioprospecting. Just as treasure hunters in the past panned silt on the beds of streams in search of gold, so bioprospectors sift through living matter in search of equally lucrative commodities. The most lucrative area of biosprospecting is in pharmaceuticals, and it is here too that the most pointed ethical questions are being raised.

To growing numbers of people, in Sarawak and around the world, much of what passes for scientific research is actually an act of biological copyright infringement perpetrated upon native people – not so much bioprospecting as biopiracy. The issues are legally, ethically and politically complex, and in Sarawak they are being debated fiercely.

The vast mass of the earth's most biologically diverse material is found in developing countries – above all in tropical rain forests along the equatorial belt of the Amazon, central Africa and Southeast Asia. But, ironically, the scientific expertise necessary to exploit it is overwhelmingly found in the developed world.

In the 1980s – when Calanolide A was discovered by a pharmacologist working for the United States National Cancer Institute – scientists were free to come and go. Then, in 1993, the international Convention on Biological Diversity (CBD) came into effect. The convention, which has been adopted by 179 countries – the United States being the most striking non-signatory – recognizes the sovereign right of each country to regulate the use of its own biological resources. It is on this basis that the state government of Sarawak founded the Sarawak Biodiversity Council (SBC) to monitor and license bioprospectors and stamp out biopirates.

In the two and half years of its existence, the SBC has received about 100 requests for prospecting licences. Ninety percent were granted, although often with strict provisos. In all cases, the foreign researchers are required to share their knowledge with the state of Sarawak.

Even though Calanolide A was discovered before the CBD came into effect, it has turned out well for Sarawak. The pharmaceutical company that synthesized the drug has entered into a



joint venture with the government, meaning that 50 percent of any future profits will return to Sarawak. Other finds may be imminent. Sarawak's chief minister, Taib Mahmud, recently announced the discovery of a jungle substance that may provide a treatment for prostate cancer.

But not everyone is happy. "The people who make money out of it will be the usual ones: politicians, rich businessmen. It won't be the local people," says Mark Bujang of the Borneo Resource Institute, a non-governmental group lobbying for the Dyaks' rights. Mr Bujang fears that bioprospecting will be like logging. Although the state government promises benefits for all, the people at the bottom suffer the disadvantages but not the gains. Mr Bujang would like to see local people being trained to do this kind of research themselves and to apply the research to their own traditional knowledge.

But where does traditional knowledge intersect with scientific knowledge? The Dyaks may have used the bintangor tree for their headaches, but they would never have isolated Calanolide A. "What the communities want is a fair share from the benefits that arise from research," Mr Bujang said. "Their land has been taken away, then their forest has been taken away. Now they take away their traditional medicine." (Source: *The Independent*, 2 August 2001.)



Calophyllum lanigerum, germination

From the jungle to the clinic

In a clinical trial in the United States, people infected with HIV, the virus that causes AIDS, are receiving an experimental drug that has its roots in the rain forests of Malaysia. The results so far

are promising. The drug, called Calanolide A, reduces the levels of human immunodeficiency virus in the blood. It is also simple to administer and effective against strains of HIV that quickly became resistant to other drugs. It even shows signs of effectiveness against tuberculosis, a major killer of HIV carriers in the developing world. If it is proved successful and commercialized, the drug could be worth US\$200 million to \$400 million per year, in line with the sales of comparable anti-HIV drugs.

The journey of Calanolide A from the rain forest to the market has been paved by a pioneering partnership between an American pharmaceutical firm and a Malaysian state government. It is also a case study on how the discovery of natural compounds now offers financial and technical rewards unimaginable 20 years ago to the countries in which the compounds were found.

The drug's remarkable journey began in 1987, when researchers from the University of Illinois in Chicago roamed the jungles of the East Malaysian state of Sarawak, collecting plant samples for the United States National Cancer Institute (NCI). They were hoping to find naturally occurring compounds that could be developed into anti-cancer drugs. What they found instead was a substance from the bintangor tree (*Calophyllum lanigerum*) that in NCI research showed promising activity against HIV.

Since NCI only conducts initial research, it regularly passes on worldwide rights for specific compounds to private firms. NCI passes the rights to Calanolide A to a small American company, MediChem Research, which had previously worked on another compound from the institute. But MediChem lacked the funds to develop Calanolide A. So, in 1996, it formed an unprecedented partnership with the state government of Sarawak, which agreed to finance the first stages of Calanolide A's clinical development. A fifty-fifty joint venture – Sarawak MediChem Pharmaceuticals – based in Illinois, United States, was born. Profits from future sales of the drug will be divided equally between the partners.

The Sarawak government's continuing investment is estimated to be US\$100 million to \$200 million by the time the drug is commercialized, and it will be three to eight years before Sarawak sees a return on its investment, if at all. Malaysian scientists have received training at MediChem and some of them will staff a new drug-screening and discovery facility that is being added to the government-funded Sarawak Biodiversity Centre in Kuching.

However, as Sarawak MediChem prepares for the third and final phase of clinical trials, it is uncertain whether the Sarawak government will be able to provide all of the US\$25 million needed. To obtain more funding the company has invited other investors to come on board. Additional investors would dilute the Sarawak government's share of future royalties. But the actual and potential benefits Sarawak enjoys from this deal are already a far cry from the past experience of source countries.

Historically, Western plant explorers felt no obligation to compensate the countries in which they found new drug compounds. But there has been a growing awareness by biodiversity-rich but cash-poor countries of the value of their natural resources. In the mid-1980s, tropical countries began to argue for compensation. This spurred the National Cancer Institute to revise its agreements with the countries in which its scientists explored. Starting in 1991, NCI required companies taking up NCI-sponsored research to negotiate agreements for benefit sharing with source countries. Thus, MediChem was required to negotiate benefit sharing with the Sarawak government. Forming a business partnership with the Sarawak government, instead of with another pharmaceutical company, was also a bonus: it meant just one set of negotiations for MediChem, instead of two.

If Sarawak MediChem is an innovative model for profiting from biodiversity, it also offers a cautionary tale: the *Calophyllum lanigerum* tree from which materials were collected in 1987 had been chopped down by the time a second expedition was



mounted in 1993. Samples taken from other trees of the same species were not as high in Calanolide A, so MediChem had to synthesize the compound before it could continue with its research. It is a vivid lesson that the conservation of biodiversity is a prerequisite for its profitability. (Source: *Far Eastern Economic Review*, 14 June 2001.)



Muirapuama

Brazil sees promise in jungle plants, but tribes see peril

The Brazilian Government, increasingly fearful of what it regards as “biopiracy” by foreign pharmaceutical companies, universities and laboratories, is moving to impose stricter controls on medicinal plants in the Amazon region. The effort is motivated largely by a desire to build and profit from a domestic biotechnology industry instead of allowing non-Brazilians to get most of the benefits. But the government is also facing growing pressure from shamans and elders of the 230 indigenous peoples of Brazil, who worry that they are losing control of tribal wisdom and who also want a share of any revenue.

Brazil has nearly a quarter of the world’s plant species. Many species grow only in Brazil and have yet to be tested by Western science, even though they have been used for thousands of years by the indigenous peoples to treat a variety of ailments. That gives Brazil a prominence in biotechnology regulation far beyond that of any other country in the tropics, the region many scientists view as perhaps the most promising for the development of new drugs.

In a declaration after three days of meetings on the eastern edge of the Amazon in early December 2001, shamans from a tenth of Brazil’s tribes called on the government to “create punishment mechanisms to deter the robbery of our biodiversity”. They suggested that it might even be necessary to impose a total “moratorium on the commercial exploitation of traditional knowledge of genetic resources” until a more equitable system could be created. “We’re not against science, but we also don’t want to be just suppliers of data,” said Marcos Terena, a member of the Terena tribe and an organizer of the conference. “We want to be part of the whole process, from research to the economic results.”

The system favoured by the Brazilian Government is that of a centralized databank that would store the knowledge accumulated by “traditional scientists”, as the shamans are sometimes called here. Any researcher wanting to make use of that information would have to pay an initial access fee, which would be followed by regular payments during the research process and royalties if the final result were a commercially viable drug.

For the most part, the promise of miracle drugs made from jungle plants remains elusive, because of the costly and lengthy research process required. But during the conference, Brazilian Government officials and advocates for the indigenous peoples complained of what they described as a pattern of undue appropriation of native plants and bacteria and even blood samples from indigenous peoples.

A Japanese pharmaceutical company, for example, has sought to patent an extract derived from a root called *muirapuama*, considered an aphrodisiac in Brazil. In addition, an American businessman tried to patent *ayahuasca*, a hallucinogen that is used for religious purposes by Amazon shamans but also thought to have therapeutic effects.

But pharmaceutical companies and other research institutions in the United States and Europe say that none of their activities are illegal under Brazilian or

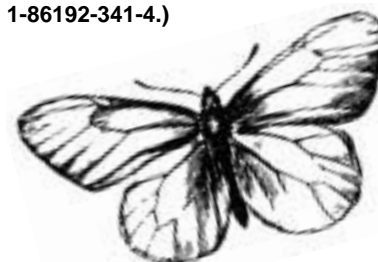
international patent law. In 1992, an International Convention on Biological Diversity that granted some patent protections to “traditional knowledge” was negotiated at a United Nations conference in Rio de Janeiro. The United States, however, has yet to ratify the accord, in part because of lobbying in Congress by the pharmaceutical lobby.

Over the long term, Brazil wants much of the research on medicinal plants and the manufacture of any drugs derived from them to take place on its own territory. Hoping to foster that kind of research here, an Amazon Biotechnology Center is now under construction in Manaus, in the heart of the jungle. Scheduled to open in April 2002, the centre will have 22 laboratories, and its directors hope to attract foreign investment and partners.

At the same time, Brazil is pressing for an overhaul of the international rules governing intellectual property rights so that more protections can be extended to its indigenous peoples. But overcoming the mutual mistrust between Brazilians and foreign researchers may prove to be the most difficult task of all. (Source: *New York Times*, 23 December 2001, quoted in the RECOFTC e-letter 2002.1.)

To me, biodiversity is all the beings that are related in nature: man, animals and plants, even vegetables, rivers, seas, animals in the jungle and all the beliefs we have kept from our ancestors and from our dreams. Wisdom itself is also a part of biodiversity.

**(Piedad Cabascango from Ecuador)
(Source: *Biodiversity – a crucial issue for the world’s poor*. DFID, UK. ISBN 1-86192-341-4.)**





ECOPORT – ACCESS PORTAL TO ECOLOGY KNOWLEDGE FOR NATURAL RESOURCE MANAGERS

In 1998, FAO created a Global Plant Production and Protection Information System (GPPIS) which established a network of individuals and institutions who agreed to share freely their separate knowledge to create a communally owned database on the Internet.

Very soon we realized the limitations of seeing the world only in terms of pests and crops, and decided that we need to *practise* holistic ecology and interdisciplinary integration as comprehensively as we *preach* it.

Accordingly, FAO formed a consortium with the University of Florida (UF) and the National Museum of Natural History of the Smithsonian Institution (SI) in the United States to build EcoPort: a service similar to GPPIS, but this time widened to *ecology as cause* to build on the pooled information power and institutional perspectives and mandates of FAO, UF and SI as a foundation to exploit and deliver the benefits of the Internet. While EcoPort operates under the auspices of FAO, UF and SI, it is in fact a forum and global network of institutions (currently 90) and volunteer, expert authors (currently about 500), who actively contribute their knowledge to be shared freely through EcoPort.

EcoPort went public on 1 January 2000 and by June 2001, 127 000 entity records had been established, including 143 000 species of which 42 000 are plants. There are more than 516 000 references, 100 slide shows, 35 000 glossary terms, 19 000 pictures, 200 hypermemes, 55 taxonomic keys, 100 interactive tables, etc. Since going public, the database has been updated at an average daily rate of 100 changes per day, made by the community of volunteer experts. The Web site serves 1 000 pages per day (about 5 000 "hits" per day) and, for example, the number of visitors from Africa amounts to half of the total for Europe.

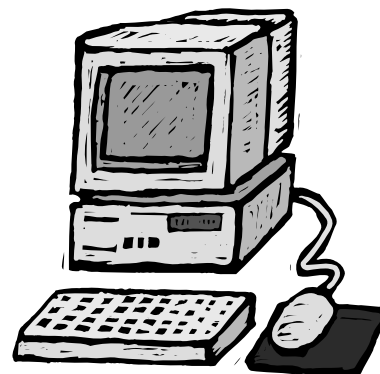
Each contributing author or editor receives a username and password which

enable the author to write information into the shared database, much as a group of authors write chapters for a book, except that the "book" we are writing is a public database on the Internet. This process uses methods and tools invented by FAO, which allow editors (not only webmasters) to write hypertext directly. Technical authors, e.g. FAO staff members, publish their shared knowledge under a banner that displays the logo of the sponsoring institution. In this way, EcoPort is a collection of records, each owned, controlled and displayed by a separate author or institution, but all using the integrating tools of EcoPort and sharing each other's contributions and resources, such as pictures entered into the communal EcoPort picture database. Data quality is maintained by the same process of peer review that has kept scientific publishing going ever since it started. All changes are notified to other community members. This makes all of us "quality controllers". An automatic e-mail notification system informs a network of Gatekeepers and the EcoPort Supervisor when changes are made. Since each contributor's shared information is displayed under his or her own banner and logo, ownership and responsibility go hand in hand and the whole process is open to public scrutiny on the Internet. We have clearly demonstrated that sharing and generosity does not threaten identity or responsibility and professional goodwill.

As we all put sharing ahead of copyright and many other territorial aspects that unnecessarily increase the transaction costs associated with using data, our pooled knowledge has grown very rapidly. Furthermore, since many users either do not have Internet access or have slow and expensive connections, we will, in future, be distributing EcoPort data sets on free CD-ROMs as well. Many of these records need editors.

If you are interested, please send an email to: contact@ecoport.org. We will explain the procedure for registering in order to contribute your information to EcoPort. (*Contributed by:* Peter Griffée, FAO, Rome.)

For more information, please contact:
Peter Griffée, Senior Officer, Industrial Crops, Crop and Grassland Service, Plant Production and Protection Division, FAO, Rome, Italy.
E-mail: peter.griffée@fao.org;
www.ecoport.org



EQUATOR INITIATIVE SEEKS NOMINATIONS FOR TROPICAL BIODIVERSITY AWARDS

The Equator Initiative, an innovative programme launched in January 2002 by the United Nations Development Programme (UNDP) and several partners, is seeking nominations for five awards recognizing extraordinary accomplishments in reducing poverty through conservation and sustainable use of biodiversity in the equatorial belt.

The Equator Initiative is designed to support the upcoming World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa and the Convention on Biological Diversity. Through recognition of local achievements, fostering South-South capacity building, and contributing to generating and sharing of knowledge, the programme aims to promote a worldwide movement that links efforts to reduce poverty and conserve biodiversity across the tropics.

Partnering with UNDP in the initiative are the Government of Canada, the International Development Research Centre and the United Nations Foundation. BrasilConnects and the International Council for Local

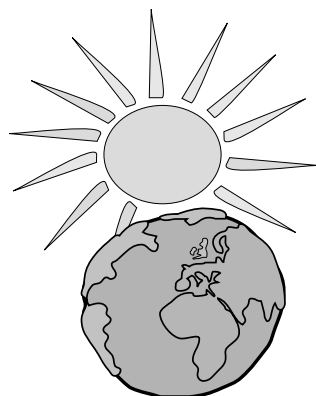


Environmental Initiatives supported the launch, attended by 450 development and environmental leaders and ambassadors from around the world.

From Brazil to Ecuador, and Indonesia to Kenya, the countries around the equator possess diverse natural environments – from dry, arid deserts to moist rain forests – and are home to a large percentage of the world's poor. Many live on US\$1 or less a day, lack access to safe drinking-water and remain undernourished. Nonetheless, biological riches in the tropics offer amazing opportunities that can create lasting improvements in people's lives – such as marketing local forest products, developing new medicines and food crops, ecotourism and other income-generating endeavours.

The deadline for nominations is 15 May 2002 and the awards will be presented at the WSSD from 26 August to 4 September. Award recipients will receive US\$30 000, a certificate of recognition and a trophy. The initiative will also enable them to carry out capacity-building exchanges with other organizations and communities. (Source: *Newsfront*, 1 February 2002.)

For more information, please contact:
Equator Initiative, Environmentally Sustainable Development Group
Bureau for Development Policy,
United Nations Development Programme (UNDP), One UN Plaza,
New York, NY 10017, USA.
Fax: +1 212 9066973;
e-mail: EquatorInitiative@undp.org;
www.EquatorInitiative.org



FAOTERM

FAOTERM is a multilingual terminology database in Arabic, Chinese, English, French and Spanish. The database has been developed over many years and was launched on the Internet in January 2001.

As at January 2002, FAOTERM consisted of 54 407 records in English (as the base language), 51 168 records in French, 46 261 in Spanish, 16 492 in Arabic and 11 878 in Chinese. It comprises technical terminology in FAO's specialized subjects: agriculture, biology, forestry, fisheries, economics, statistics, nutrition, etc. A total of 7 615 records comprise official titles (bodies) of organizations, institutes, programmes, slogans, expert consultations, FAO structure, etc.

There are several ongoing meetings within FAO specifically discussing forestry and wood-energy terminology and definitions.

The new five-language FAOTERM database (<http://faoterm.fao.org:8080/>) has been incorporated into the FAO Terminology site (www.fao.org/faoterm/default.htm). A separate, newly designed database for Names of Countries, now incorporating all five languages and following United Nations practice, (www.fao.org/faoterm/nocs/html/Default-e.htm) was added to the FAO Terminology site in December 2001.

For more information, please contact:
Ingrid Alldritt, Terminology Officer,
Programming, Reference and Terminology Group, Meeting Programming and Documentation Service, GICM, General Affairs and Information Department,
FAO, Rome, Italy.
Fax: +39 0657056241;
e-mail: ingrid.alldritt@fao.org

FIELD COURSES IN RAIN FOREST AND MARINE ECOLOGY

Rainforest and Reef is a non-profit organization specializing in field courses in rain forest and marine ecology that

are currently offered in ten countries. All programmes are operated by partner organizations which have shown a strong commitment to conservation and education. Ninety-nine percent of all participation fees stay with our partners to assist in local conservation and education projects.

Local guides and biologists are featured in the study of natural history, rain forest and coral reef ecology, medicinal uses of native plants, conservation, land management, local cultures, archaeology and geology. While most of the programmes are customized, standard field course itineraries can be found on the Rainforest and Reef Web site.

For more information, please contact:
Mike Nolan, Rainforest and Reef, 29
Prospect NE Suite #8, Grand Rapids,
Michigan 49503, USA.
Tel./fax: 1 616 7765928;
toll free: 1 877 7693086;
e-mail: mnolan@rainforestandreef.org;
www.rainforestandreef.org



FINGERPRINTING BAMBOO

Phyllostachys (Poaceae) is one of the largest genera of woody bamboos, with approximately 75 species. It is widely used in the temperate zone, particularly for construction, but also in the case of two species, *Phyllostachys heterocycla* and *P. rubromarginata*, for edible "bamboo shoots". In phylogenetics, the bamboos have been problematic because they exhibit extremely low levels of divergence in sequenced DNA



regions, so little has been published about their infrageneric relationships based on genetic studies. Scientists at Kew and Trinity College, Dublin, however, have obtained good results by applying one of the recently developed fingerprinting techniques, amplified fragment length polymorphisms (AFLP). In addition to finding that the currently accepted taxonomic scheme for the genus was generally accurate, they were also able to assess accurately some species that had been difficult to place previously, such as *P. sulphurea* (which some authors thought was the same as another). AFLP, therefore, appears to be an ideal technique for groups in which low levels of genetic divergence are a problem. (Source: *Kew Scientist*, issue No. 20 [October 2001].)

For more information, please contact the author: **Prof. Mark Chase, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, UK.**
E-mail: m.chase@kew.org;
www.kew.org

FRUITS FOR THE FUTURE

Tropical fruit-trees are important multipurpose species that supplement and improve the quality of diets and provide fodder, fuel, timber and medicine for smallholders. Harvesting these trees enables rural people, particularly women and children, to provide nutrition for a balanced diet, supplement family incomes and strengthen food security.

The major constraints to the effective use of these crops are access to information on use, production and processing, and ineffective marketing.

Fruits for the Future is a three-year project which aims to redress this balance and facilitate technology transfer to farmers through media, by distributing extension manuals emphasizing products, marketing and processing, as well as production. Monographs and annotated bibliographies will be produced to collect and summarize

existing research, in order to make better use of existing research results and identify possible gaps in the knowledge base for further research.

A group of species has been selected on the basis of their regional or global importance, because there are no comprehensive compilations of information already in existence and because of their suitability for adaptation, income generation, nutrition and food security, diversification and use in agroforestry systems. They are:

- *Ziziphus mauritania* (ber)
- *Tamarindus indica* (tamarind)
- *Dacryodes edulis* (African pear)
- *Adansonia digitata* (baobab)
- *Annona* species (cherimoya, sweet and sour sops, custard apples and other species)

Ber (*Ziziphus mauritania* Lam.) is cultivated all over the drier parts of the Indian subcontinent for its fresh fruits, which are rich in vitamins (C, A and B-complex) and minerals. It can be successfully cultivated even in the most marginal ecosystems of the subtropics and tropics. It also exists in wild groves which are widespread in the warmer parts of India, Pakistan, Bangladesh, Sri Lanka, central to southern Africa and in the northern parts of Australia.



Fruits for the Future No. 2 - Ber - 2001

Fruits for the Future is a project of the International Centre for Underutilised Crops and is funded by the United Kingdom Department for International Development (DFID).

For more information, please contact: **Angela Hughes, International Centre for Underutilised Crops, Institute of Irrigation and Development Studies, University of Southampton, Southampton SO17 1BJ, UK.**
Fax: +44 (0)2380 677519;
e-mail: a.hughes@soton.ac.uk;
www.soton.ac.uk/~icuc/frunut.htm

JOURNALS AND NEWSLETTERS

Conservation and Society

Conservation and Society is a new journal dedicated to the advancement of the theory and practice of the conservation of natural resources. It aims to be a valuable source of reference material on the problems of conservation in the Asian geographical area. The journal is peer-reviewed, with an interdisciplinary focus drawing on both the natural and social sciences and covers basic and applied research in areas including, but not restricted to, political ecology, human-wildlife conflicts, decentralized conservation, conservation policy, ecosystem structure and functioning, systematics, community and species ecology, animal behaviour and behavioural ecology, landscape ecology, restoration ecology and conservation biology.

For more information, please contact: **Kamal Bawa, Professor of Biology, University of Massachusetts, USA.**
E-mail: Kamal.bawa@umb.edu; or
Ashoka Trust for Research in Ecology and the Environment (ATREE), No. 659, 5th A Main, Hebbal, Bangalore 560 024, Karnataka, India.
Fax: +91 80 3530070;
e-mail: editor@conservationandsociety.org or info@conservationandsociety.org;
www.conservationandsociety.org



Forest certification newsletter

Forest certification is an important instrument to halt and reverse the loss and degradation of the world's forests and the World Wide Fund for Nature (WWF) is working with governments, industry, local communities and consumers to encourage sustainable forest management worldwide.

To receive a copy of WWF's certification newsletter, please contact:

Ellen von Zitzewitz, European Forest Policy Officer, WWF-European Policy Office, Avenue de Tervuren 36, bt. 12, 1040 Brussels, Belgium.
Fax: +32 2 7438819;
e-mail: Evonzitzewitz@wwfepo.org;
www.panda.org/resources/programmes/lepo/publications/forpub.cfm

Forest Integrity Network (FIN) newsletter

The Forest Integrity Network (FIN) newsletter aims to serve the community of professionals concerned about open and effective governance of forest resources. FIN grew out of a May 2000 workshop at Harvard's Kennedy School of Government cosponsored by Harvard's Center for International Development, the World Conservation Union (IUCN) and Transparency International (TI). The workshop brought together scholars, activists, and government officials concerned about forest corruption. Since then, FIN has remained a loose alliance of committed individuals, without formal structure or funding.

For more information, please contact the editor:

E-mail: FINnews@syenco.com;
www.syenco.com/FINnews1.html



Journal of Tropical Medicinal Plants

More efforts are required to create and disseminate scientific knowledge on tropical medicinal plants, including research and development on conservation, utilization, efficacy and safety of the products used, commercialization, bioprospecting and quality control of drugs for human health improvement. This journal provides an information platform to publish the results that emerge from various fields of study and from different parts of the world.

For more information, please contact:

A.N. Rao, Editor-in-Chief.
E-mail: info@totalhealthconcept.com

Natural Product Radiance

The herbal world, its history and its potential value, make it fascinating to study and attractive to use. Tropical countries such as India have a rich repository of natural resources. Research on exploration of natural wealth hidden in the form of herbs, shrubs, micro-organisms, etc, has been attracting increasing awareness and attention. As a result, products (varying from food, timber and textiles to pharmaceuticals and cosmetics) have starting entering the market. It is indeed essential to disseminate such a knowledge and information explosion in a simplified, user-friendly manner to the targeted groups. For this reason, the National Institute of Science Communication (CSIR), New Delhi is producing *Natural Product Radiance*, a new bimonthly periodical providing information on research papers, special features, book reviews, Web sites and seminars, etc. related to the herbal and animal world.

For more information please contact:

Dr (Mrs) Sunita Garg, Scientist, Wealth of India Division, National Institute of Science Communication, Dr K.S. Krishnan Marg (Near Pusa Gate), New Delhi 110012, India.
Fax: +91 11 5787062;
e-mail: sunitag@niscom.res.in

Revista Forestal Centroamericana

La *Revista Forestal Centroamericana* brinda una perspectiva regional sobre la conservación, manejo y aprovechamiento de los recursos naturales. Aborda diversidad de temas como problemas forestales y ambientales de la región, silvicultura, plantaciones, economía, género, taxonomía y práctica forestal, entre otros.

Para más información, dirigirse a:

Revista Forestal Centroamericana – CATIE, 7170 Turrialba, Costa Rica.
Fax: +506 556 6282/1533;
correo electrónico: acortes@catie.ac.cr ó rforest@catie.ac.cr;
www.catie.ac.cr/informacion/RFCA



Voices from the Forest

Voices from the Forest, the bulletin of the NTFP Exchange Programme in Southeast Asia, aims to provide a platform for sharing forest community-based NTFP ideas and concerns, mainly through practical information and cases. The bulletin is available on the Internet (www.NTFP.org).

For more information, please contact:

Eric van Poederooijen, ProFound, Hooghiemstraplein 128, 3514 AZ Utrecht, the Netherlands.
Fax: +31 (0)30 2720878;
www.ThisIsProFound.com



INTERNATIONAL DOCTORAL PROGRAM FOR DEVELOPMENT STUDIES

The Center for Development Research (ZEF) in Bonn, Germany, invites highly qualified, young scientists from developing countries to participate in its International Doctoral Program for Development Studies. ZEF supports individual students with funds for field research. Fellowships from several national and international foundations and sponsors are offered primarily to students from the developing countries.

For more information, please contact:
Dr Gunther Manske, Coordinator,
International Doctoral Program for
Development Studies, Center for
Development Research (ZEF), Walter-
Flex-Str. 3, 53113 Bonn, Germany.
Fax: +49 (0)228 731889;
e-mail: docp.zef@uni-bonn.de;
www.zef.de

INTERNATIONAL YEAR OF MOUNTAINS



We are all mountain people

The official launch of the International Year of Mountains took place at United Nations headquarters in New York on 11 December 2001. FAO held its own launch on 15 February 2002 at its headquarters in Rome. The event was attended by about 500 people and attracted more than 20 journalists.

The FAO event and the global launch at United Nations headquarters were part of a worldwide series of events that have ushered in the International Year of Mountains. Countries which have held ceremonies to inaugurate the International Year include: Bolivia, China (Hong Kong Special Administrative Region), France, Germany, India, Italy,

Japan, Kyrgyzstan, Mexico, Nepal, Pakistan, Peru, the Philippines, Poland, the United Kingdom (Scotland) and the United Republic of Tanzania.

Information on the International Year of Mountains activities around the world can be found on the national Web sites:

- Australia: www.australianlps.ea.gov.au/iym.html
- Bolivia: www.aim2002bolivia.org/
- Canada: www.yearofmountains.ca/
- France: www.montanea.org/
- Germany: www.berge2002.de
- Italy: www.montagna.org/
- Japan: www.iym-japan.org/index.htm
- Liechtenstein: www.berge2002.li/intro_flashless.html
- Mexico: www.conafor.gob.mx/aim.htm
- Peru: www.condesan.org/peruAIM2002/
- Switzerland: www.berge2002.ch (German); www.montagnes2002.ch (French); www.montagna2002.ch (Italian)
- United Kingdom: www.iym.uhi.ac.uk/

The International Year of Mountains' coordination unit prepares an informal newsletter that is sent out on a monthly basis to a wide variety of organizations and individuals interested and involved in mountain issues and in the International Year of Mountains, in particular. For copies of the newsletter, which is also available in French and Spanish, please contact: Luciana Ambrosiano (luciana.ambrosiano@fao.org).

For more information, please contact:
Douglas McGuire, Senior Forest
Conservation Officer, Head,
Coordination Unit – International Year
of Mountains 2002, Forestry
Department, FAO, Viale delle Terme di
Caracalla, 00100 Rome, Italy.
Fax: +39 0657055137;
e-mail: info@mountains2002.org;
www.mountains2002.org



LOS BOSQUES PUEDEN CONTRIBUIR AL ALIVIO DE LA POBREZA

Se requiere acción para aprovechar ahora las maneras en que la actividad forestal puede ayudar a reducir la pobreza. Sin acción, es decir, sin inversión en actividades forestales centradas en las personas, se verán minadas las otras medidas para enfrentar la pobreza y mejorar los medios de vida de los pobres.

La comunidad internacional se ha comprometido en la eliminación de la pobreza. Las metas internacionales de desarrollo para el año 2015 incluyen la reducción a la mitad del número de personas afectadas por inseguridad alimentaria y una reducción en la proporción de personas que viven en la extrema pobreza.

Los bosques y los árboles pueden ayudar. Los bosques contribuyen a la seguridad alimentaria. Pueden proporcionar oportunidades comerciales y empleo para los pobres. Con frecuencia son aspectos importantes para el desarrollo de un buen gobierno local. Un enfoque centrado en las personas puede aumentar aún más el impacto de los bosques y los árboles en la reducción de la pobreza. Lo que se requiere es la remoción de las barreras que impiden que los bosques y los árboles contribuyan a la subsistencia de los pobres además de sustentar las oportunidades emergentes.

Una actividad forestal centrada en las personas las coloca al centro del desarrollo y les proporciona los derechos y los medios para manejar los recursos del bosque y los árboles.

¿Qué obtiene la gente pobre de los árboles y los bosques?

Bienes de subsistencia, tales como leña, medicinas, madera para construcción, sogas, carne de animales silvestres, forraje, setas, miel, hojas comestibles, raíces y frutas.

Bienes para la venta, tales como los productos enumerados antes, artesanías, madera y otros productos de la madera.



Beneficios indirectos, tales como tierra para otros usos, sitios sociales y espirituales, servicios ambientales, incluida la protección de cuencas y conservación de la biodiversidad.

Aproximadamente 1,6 billones de personas en el mundo dependen para su subsistencia, en gran parte, de los recursos forestales. Con la creciente desigualdad económica, los pobres, más que nunca, requieren salvaguardias y crecen las demandas sobre los bosques y los árboles. El cambio acelerado de la realidad mundial representa mayores retos para los pobres, pero también puede proporcionar nuevas oportunidades para una subsistencia mejorada sobre la base de la utilización sostenible de los recursos naturales. Si se ejecutan acciones claves, aún los productores forestales más pobres, los comerciantes y los trabajadores podrán participar en iniciativas locales que ofrecen perspectivas comerciales.

Los recursos forestales contribuyen directamente a la subsistencia y pueden complementar otros componentes importantes de la reducción de la pobreza a través de la producción de alimentos, la educación y el cuidado primario de la salud. El desafío consiste en apoyar aquellos cambios específicos que conducirán a establecer un papel más decisivo a los recursos forestales y a los árboles en la subsistencia de los pobres. Este desafío requiere acciones inmediatas.



Dependencia de los bosques

60 millones de personas indígenas que viven en los bosques húmedos de América Latina, Asia Sudoriental y África Occidental dependen en alto grado de los bosques.

350 millones de personas que viven dentro o en las cercanías de bosques densos dependen de ellos para su subsistencia o ingresos.

1,2 billones de personas en los países en desarrollo utilizan los árboles en los predios agrícolas para generar alimento y dinero en efectivo.

Beneficios para la subsistencia local proporcionados por la actividad forestal centrada en las personas

Derechos de acceso, control y utilización de los recursos del bosque y los árboles.

Mayor participación en las decisiones relativas a la utilización y manejo de los recursos del bosque.

Menor vulnerabilidad, no sólo a través de recursos forestales seguros sino también por el mayor peso político.

Ingresos de los bienes y servicios del bosque.

Mejor gobierno a través de instituciones locales más eficaces.

Asociación para reforzar capacidades.

Beneficios directos de los servicios ambientales.

Mayor poder de negociación.

Puntos de acción (identificados en el Taller de Cortevecchia, septiembre de 2001)

Fortalecimiento de los derechos, capacidades y gobierno.

Reducción de la vulnerabilidad.

Captura de las oportunidades emergentes.

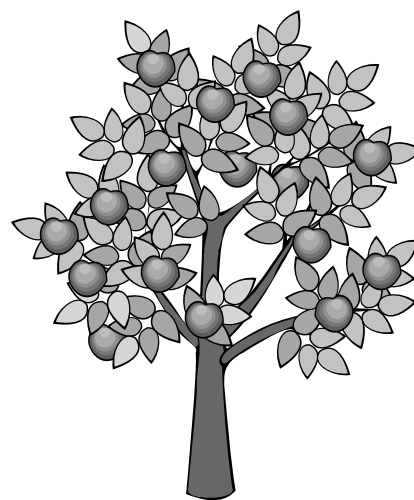
Trabajando en sociedad.

Conclusión

Agricultura, bosques y reducción de la pobreza

Los árboles prestan numerosos tipos de utilidad agrícola, tales como alimentos, combustible, forraje, fertilizante, sombra, cortavientos, cercos, embalaje, regulación del agua y prevención de la erosión. Los agricultores pobres en Nepal, que no tienen la posibilidad para adquirir fertilizantes, se esfuerzan por

mantener una relación de 3 a 1 entre las tierras forestales y las agrícolas, para de tal manera garantizar el suministro de forraje para el ganado y de estiércol para fertilizar sus cultivos.



Salud, bosques y reducción de la pobreza

Los bosques proporcionan medicinas y suplementos alimentarios esenciales. Un billón de personas dependen de productos farmacéuticos derivados de plantas forestales para enfrentar sus necesidades medicinales. Las poblaciones que viven al lado de los bosques húmedos en Ghana reciben más proteína de los productos forestales que de los cultivos o del ganado. En los ambientes áridos, los bosques son esenciales para la seguridad alimentaria en las épocas y años secos. Por lo tanto, la actividad forestal debe captar las sinergias potenciales entre los diversos sectores para maximizar el impacto positivo.

El mensaje es claro

Los bosques y los árboles tienen una función importante en la lucha para reducir la pobreza. Las iniciativas basadas en manejo forestal sostenible, como parte de las estrategias de desarrollo rural y de subsistencia, pueden apoyar el buen gobierno y aumentar los beneficios para los pobres. El desafío actual es el de hacer realidad este potencial. (Fuente: Boletín informativo de los programas forestales nacionales, FAO 5(12), Santiago, Chile, diciembre de 2001.)



NEW FORESTS PROJECT

The New Forests Project is a people-to-people, direct-action programme established in 1982 in an effort to initiate reforestation and reduce deforestation in "developing countries". Their informative Web site is also available in Spanish.

For more information, please contact:
The New Forests Project, 731 Eighth Street SE, Washington, DC 20003, USA.
Fax: +1 202 5464784;
e-mail: icnfp@erols.com;
www.newforestsproject.com/index.htm



PLANT RESOURCES OF SOUTH-EAST ASIA (PROSEA)

PROSEA is an international programme focused on Southeast Asia. Its purpose is to make available the wealth of dispersed knowledge on plant resources for education, extension, research and industry through a computerized data bank and an illustrated multivolume handbook. A thorough knowledge of plant resources is essential for human life and plays a key role in ecologically balanced land-use systems. Extensive information on the plants growing in the region is needed to enable the plant resources of each country to be used optimally.

One of the main objectives of PROSEA is to publish illustrated multivolume handbooks. A large international team of experts is invited to prepare the texts on particular species or genera, which are published in

commodity groups. All taxa are treated in a similar manner with details on uses, distribution, botany, ecology, agronomy or silviculture, genetic resources, diseases, breeding, prospects and literature.

For more information, please contact:
Agus Rachmat Hadi, Distribution Officer, PROSEA Network Office, PO Box 332, Bogor 16122, Indonesia.

E-mail: agus@proseanet.org
[Please see under Publications of Interest for more information on PROSEA.]

PLANT RESOURCES OF TROPICAL AFRICA (PROTA)

In tropical Africa thousands of plant species are found which provide food, fibre, pharmaceutical products, building materials, fuel, etc. for personal use and for sale on local, regional or international markets.

Information on these plant resources is stored in an overwhelming and ever-growing amount of literature. For the user, the information has become inaccessible, partly because of its sheer volume and the dispersion in time, partly because it is scattered over several continents, is in several languages and in all kinds of publications.

The PROTA programme is an initiative of Wageningen University, the Netherlands. In cooperation with institutes in Africa and Europe, PROTA intends to survey, compile, edit, publish and disseminate existing knowledge on some 7 000 useful plants of tropical Africa. It will build on the experiences gained by the twin programme Plant Resources of South East Asia (PROSEA), 1985-2002. In due course the publications will be accessible from the PROTA Web site.

The PROTA programme has been divided into three phases. The Preliminary Phase (1998-1999) was an in-house exercise by Wageningen University. The aim of the Preparatory Phase (2000-2002) is to "internationalize" the programme and to

establish cooperation with a number of African and European institutions. PROTA offices are currently being set up in seven African and three European countries, while an international group of editors and authors is contributing to the first PROTA publications. PROTA's First International Workshop (September 2002), which will be in both English and French, will be instrumental in further defining the organization of the programme, including the framework of the Web databases. In the Implementation Phase (2003-2012), emphasis is on the actual compilation and editing of the monographs, making them widely available in electronic and printed forms, and also transforming the information into derived products.

For more information, please contact:
PROTA Programme, Wageningen University, PO Box 341, 6700 AH Wageningen, the Netherlands.
E-mail: prota@pros.dpw.wag-ur.nl;
www.prota.org

[Please see under Forthcoming Events for more information on the First International Workshop.]



POTENTIAL OILSEED TREES OF AFRICA

Humankind depends on a very limited number of crops to meet the needs of staple diets and on a few major non-food crops to meet associated needs. Among them a small portion of the world's food comes from tree crops. The utilization of



a large number of species for various products has not been exploited for sustainable livelihood. The International Centre for Underutilised Crops (ICUC) has initiated a series of programmes on the domestication and utilization of non-wood forest products, such as jackfruit, mangosteen and pummelo in Asia and *Vitellaria paradoxa* in Africa.

Africa is a rich heritage of useful indigenous multipurpose tree species. These resources have played an important role for centuries in feeding people, keeping them healthy and giving them shelter through good years and also through bad years, particularly when drought persisted and crops failed. Many of these multipurpose species are oilseed-bearing trees and are part of the forestry ecosystems. People who live with this system protect and use them every day. However, population pressure along with modern need is destroying this system.

Oilseeds constitute an important group of crops of the total global cropped area. Vegetable oils account for about 70 percent of the total availability of all oils and fats. There are two distinct types of vegetable oil-yielding crops: perennial and annual crops. In the past vegetable oils, fats and tallow have been utilized for food (80 percent) and animal feed (70 percent and 13 percent in the industrial sectors).

There is impressive growth in the consumption of oils and fats worldwide. This will increase further, together with population growth. The increased demand for fats and oils can be met by the African heritage, as has been seen with the oil-palm's contribution to world production. There are many perennial species, similar to oil-palm and coconut, which provide vegetable oil, not only for use as cooking oil for the marginalized women and men of the world but also for small-scale industries, to generate income. The uses of these trees are only known to those who live locally. Several organizations have started to gather information on these species for domestication and for establishing them in agroforestry systems.

The present status of some of the underutilized African oil-bearing tree species, their constraints to utilization and marketing, are highlighted in a recent paper presented at the third International Conference of Oilseed Trees by N. Haq, ICUC, University of Southampton. It is hoped that the existing information will provide a consensus to develop an effective regional programme on oilseed tree species for sustainable livelihood and food security. ICUC is willing to take part in developing such a programme for the effective utilization of African resources. (Source: *Global Newsletter on Underutilized Crops*, June 2001.)



POTENTIAL ROLE OF NON-TIMBER FOREST PRODUCTS IN THE COPING STRATEGIES OF RURAL HIV/AIDS-AFFECTED HOUSEHOLDS IN SUB-SAHARAN AFRICA

The HIV/AIDS epidemic is drastically reducing the agricultural workforce of sub-Saharan Africa, threatening household and national food securities. Contributing to household nutrition and health at low labour inputs, NTFPs should be considered in efforts to mitigate the socio-economic impact of HIV/AIDS on rural agrarian households. Because there exist few references to this subject in the literature concerned with the coping mechanisms of HIV/AIDS-affected households, a recent paper is drawing attention to the

importance of forestry research in the context of these coping strategies.

The human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) epidemic in sub-Saharan Africa has been recognized as an epidemic requiring a multisectoral response. The main social cost of this epidemic is not the direct costs of medical care and prevention, but rather the costs of lost household output owing to the burden of caring for the sick, the elderly and orphaned children. For example, in Uganda, food insecurity and malnutrition are the most critical concerns among female-headed AIDS-affected households, not medical treatment and drugs.

As a drastic reduction in the continent's workforce is directly threatening national food securities, agriculture, the foundation of the region's national economies, is currently being acknowledged as a critical focal point of the multisectoral response. For this reason, recent epidemiological studies have focused on the epidemic's effects on rural agricultural communities and households. These studies suggest that NTFPs from natural forests and agroforestry systems may be important components of the coping strategies for HIV/AIDS-affected households.

Despite documentation of household socio-economic conditions that suggests potential intensification of NTFP utilization (specifically, low-labour supplies), current literature reveals minimal reference to forest and tree resources in HIV/AIDS coping strategies, although their significant roles in meeting local nutritional demands have justified recent calls for the integration of forestry and nutrition in policy and planning. With more credence being given to a multisectoral response to sub-Saharan Africa's HIV/AIDS epidemic, governments, NGOs and international institutions should make an effort to understand the current and potential role of NTFPs in HIV/AIDS-affected households.

As HIV/AIDS and strategies for mitigating its impact have not been a



focus of rural development workers and/or agricultural staff, the authors hope that their paper conveys the timely need for inclusion of forest and tree resources in cost-effective response efforts to agrarian societies heavily affected by HIV/AIDS. (Source: Extracted from a paper prepared by Marc Barany, A.L Hammett, Abdou Sene and Beyhan Amichev, College of Natural Resources, Virginia, USA.)

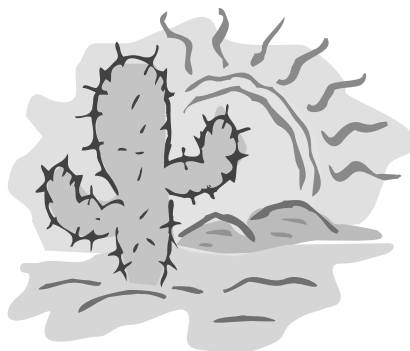
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SCIENTIFIC BOARDS SOCIETY OF RESEARCH INSTITUTE OF FORESTS & RANGELANDS

The Scientific Boards Society of Research Institute of Forests & Rangelands (SBS-RIFR) has recently been formed with some 100 expert members. Fields covered include: forestry, forest management, forest harvesting, agroforestry, silviculture, biotechnology, rangelands, medicinal plants, forest health and environmental pollution, genetic resources, desertification control, forest improvement, etc.

SBS-RIFR is ready to start joint venture projects with other companies and organizations in Iran and throughout the world.

For more information, please contact:
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SUSTAINABLE FOR WHOM?

Sustainable for Whom? is a brochure jointly published by the Taiga Rescue Network and the Boreal Footprint Project summarizing a new report on Forest Stewardship Council (FSC) certification and community benefits. It contains exploratory case studies of four forest communities in the boreal or near-boreal zone with experience of the FSC certification. It is hoped that the information in the brochure and the full-length report will contribute to increased awareness of the potential benefits as well as the limitations of market-based certification in relation to forest communities and forest peoples.

The full-length report *Sustainable for Whom?* is available in pdf format at: www.taigarescue.org/publications/reports.shtml

For more information, please contact:
Taiga Rescue Network, Box 116, S-
96223 Jokkmokk, Sweden.
E-mail: info@taigarescue.org;
www.taigarescue.org

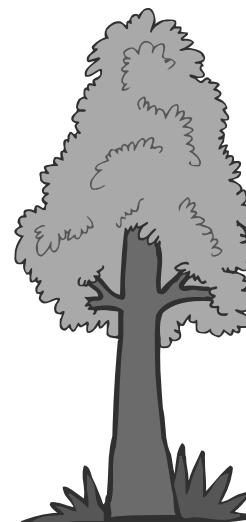
The Boreal Footprint Project (BFP) is an American participant of the Taiga Rescue Network. BFP aims to reduce Americans' ecological footprint on the boreal forests of Canada and Alaska through education, advocacy and campaigning.

TRAINING PROGRAMME ON LEADERSHIP AND ADAPTIVE MANAGEMENT IN FOREST ENVIRONMENTS

Collaborative adaptive forest management (CAFM) aims at achieving a balance between the conservation and utilization of forest resources in the pursuit of rural development and sustainable livelihood. Foresters who work in CAFM, therefore, need a balance of social and technical skills and insights.

In response to this need, a training programme of the International Agricultural Centre (IAC) covers the following broad areas of interest: collaboration and decision-making between stakeholders, integrated land use, sustainable adaptive forest management, biodiversity conservation, poverty reduction, equity and empowerment. The programme offers five short courses and one seminar addressing different aspects of CAFM.

For more information, please contact:
IAC, PO Box 88, 6700 AB Wageningen,
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www.iac.wageningen-ur.nl





TREES INTERNATIONAL TRAINING COURSES

With the world's current environmental issues and concerns, human resource development has been considered as one of the most important components that can help achieve sustainable natural resources development. Through the years, the Training Center for Tropical Resources and Ecosystems Sustainability (TREES) maintains its commitment to upgrade the knowledge, skills and attitudes of individuals involved in tropical resources development and ecosystems sustainability through its continuing education and training programmes. TREES continues to develop and conduct training courses and study tours that keep environment and natural resource professionals updated with recent developments and prepared to meet the challenging demands of the future.

For the next two years, TREES has designed 12 training courses and one study tour that aims to address the needs of forestry and natural resources professionals. These training courses include:

- Biodiversity monitoring and assessment
- Forest products marketing
- Agroforestry for sustainable development
- Sustainable forest resources management and project planning.

For more information and a complete list of all courses available, please

contact: Domingo M. Ramirez, Director, TREES, College of Forestry and Natural Resources (CFNR), University of the Philippines Los Baños (UPLB), College, Laguna, Philippines. E-mail: trees@laguna.net

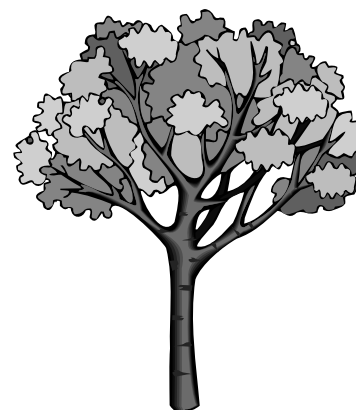
USING LOCAL KNOWLEDGE IN NWFP INVENTORY

An interesting North American study that contains some lessons for tropical NWFP assessment is the work that has been done in Canada on inventory for Pacific yew (*Taxus brevifolia*) bark harvested to manufacture a breast cancer drug. As a preliminary to large-scale inventory, a decision needed to be made about which of two available forest maps (an ecosystem map and a forest cover map) would provide the best stratification and whether local knowledge could be used to select which strata should be sampled for yew. A questionnaire was sent to local foresters and ecologists to elicit their knowledge about the occurrence and distribution of yew among the mapped units on each map. The questionnaire data were compiled and used to identify high- and low-probability strata for yew on each map. Field sampling was weighted so that 80 percent and 20 percent of samples were placed in high- and low-probability strata, respectively.

Analysis of the data showed that overall estimates of yew populations produced using either map as a basis for stratification were not statistically different, but the standard errors for the ecosystem map were much smaller, indicating that it is more precise and hence a more efficient stratification. The validity of the high and low yew occurrences strata as determined by the questionnaire was not challenged or tested in the analysis of results. Presumably this is because they were confirmed as accurate. If this is the case, then the local knowledge was reliable even though a diverse range of individual opinions on yew distribution

were expressed by the questionnaire respondents.

This study demonstrates a means of using local knowledge in the context of a biometrically sound sampling scheme that does not compromise its integrity and may offer useful lessons for the use of indigenous knowledge in tropical NWFP inventory. (Source: *Resource assessment of non-wood forest products. Experience and biometric principles*. FAO NWFP No. 13.) ●



The secret of happiness is to admire without desiring.

**Francis H. Bradley
British Philosopher (1846-1924)**



AGARWOOD

Agarwood, eaglewood, gaharu, aloeswood – these are just a few of the names for the resinous, fragrant and highly valuable heartwood produced by and other species of the Indomalaysian tree genus *Aquilaria*. The wealth of names for this dark and heavy wood (its Chinese name literally means “wood that sinks”) reflects its widespread and varied use over thousands of years. Both agarwood oil and incense are used for their fragrant properties, notably in the Near East. Agarwood incense is used in religious ceremonies by Buddhists, Hindus and Muslims, while a revival of the *Koh doh* incense ceremony in Japan has rekindled interest in agarwood in that country. In Taiwan Province of China, agarwood is an aromatic ingredient in *Chu-yeh Ching* and *Vo Ka Py* wine. Although less common, agarwood may also be carved into sculptures, beads and boxes, which are sometimes also used for religious purposes.

Accounts of international trade in agarwood date back as early as the thirteenth century, India being one of the earliest sources of agarwood for foreign markets. Agarwood is currently traded in large quantities: more than 700 tonnes of agarwood from *Aquilaria malaccensis* were reported in international trade in 1997. Available trade data report approximately 20 countries as exporting and re-exporting agarwood from 1993-1998, with exports from Indonesia and Malaysia taking the lead. Although overall trade volumes may appear small in “timber trade” terms, they are not small in monetary terms. Agarwood chips and segments may sell for several hundred to several thousand US dollars per kilogram. The price of oil distilled from agarwood is generally between US\$5 000 and \$10 000 per kilogram, but can be significantly more for agarwood oil of exceptionally high quality.

Unfortunately, the demand for agarwood currently far exceeds the available supply, which is naturally

restricted owing to the nature of its formation – agarwood is only found in a small percentage of *Aquilaria* trees of those species known to produce it. Although research into the origins of agarwood is ongoing, it appears that the fragrant resin that permeates the heartwood of some *Aquilaria* trees is produced as a response to wounding and/or a fungal infection. It is this resinous wood, or “agarwood”, that is sought, the non-impregnated wood being considered too soft to be useful for construction. Agarwood is harvested by felling and then splitting trees open. External signs of the presence of agarwood are not always obvious. As a result, *Aquilaria* trees are often cut down indiscriminately in the search for those containing agarwood. The high value of agarwood products is also stimulating illegal harvest and trade in several range countries.

Populations of eight *Aquilaria* species have already declined to the point where they are considered threatened according to the World Conservation Union (IUCN) Red List Categories. Of these, six species are considered at risk from overexploitation for agarwood.

In view of the evidence of unsustainable harvest and trade, intergovernmental action has been taken to bring the international trade in one of these species, *Aquilaria malaccensis*, within sustainable levels. *A. malaccensis* was listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) with effect from February 1995. This listing obliges all CITES member countries exporting or re-exporting *A. malaccensis* parts and derivatives (e.g. wood, chips, oil) to issue CITES documents for those shipments exported. In the case of exports from range states, the Convention stipulates that such permits should only be issued once the exporting government has confirmed that the agarwood to be exported was obtained both legally and in a manner not detrimental to the survival of the species.

The CITES Plants Committee considered it a priority to review the implementation of the CITES listing for

A. malaccensis during the 1998-2000 triennium. Trade Records and Analysis of Flora and Fauna in Commerce (TRAFFIC) was contracted by the CITES secretariat to undertake such a review in 1998. TRAFFIC’s research initially focused specifically on CITES implementation. However, as several different *Aquilaria* species are in trade and agarwood is extremely difficult to identify to the species level, TRAFFIC’s research was broadened to encompass a more general review of agarwood use and trade. Information was gathered through: interviews with government authorities, other agarwood researchers and traders; compilation and analysis of CITES and customs trade data; and a review of available legislation and literature. Market surveys and visits to harvest sites and processing centres were undertaken in several countries.

The results of TRAFFIC’s research are reported in the TRAFFIC Network report *Heart of the matter: agarwood use and trade and CITES implementation for Aquilaria malaccensis*. The full report can be downloaded (www.traffic.org/news/agarwood.pdf). (Source: Extracted from the executive summary of *Heart of the matter: agarwood use and trade and CITES implementation for Aquilaria malaccensis*.)

**For more information, please contact:
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[Please see under Country Compass – Papua New Guinea – for more information on agarwood.]





Seventy-five percent of the world's population depends primarily on traditional medicines, many of which are gathered from the wild. Products derived from the "sweet wormwood" plant are increasingly important in combating drug-resistant strains of malaria, particularly in Africa. (Source: Biodiversity – a crucial issue for the world's poor. DFID, UK. ISBN 1-86192-341-4.)

BAMBOO CHARCOAL AND VINEGAR

Bamboo charcoal and vinegar production is more and more prosperous in China and most of the products are exported to Japan and other countries. *Bamboo charcoal* has a good market in Japan owing to a felling ban in natural forests and the good character of bamboo charcoal. In addition to bamboo charcoal being used for fuel, there are several other uses:

- **Agriculture.** As a carrier of organic manure and micro-organisms in the soil, bamboo charcoal can improve the vigour of the soil.
- **Chemicals.** Bamboo charcoal can be used as the raw materials of bamboo active carbon. Bamboo charcoal shows strong absorption because of the special structure of micro holes of the bamboo stem. Tests show that the absorption properties of bamboo active carbon are extremely good.
- **Medicine and health care.** Pillows and mats made of bamboo charcoal can soothe the nerves, relax backaches and control snoring. Bamboo charcoal also functions as a deodorizer, dehumidifier and fungicide.
- **Environment protection.** Bamboo charcoal can be used as a water clarifier, a shield for electromagnetic waves and absorber of poisonous gases. Pollution indoors would be absorbed if the panels were made of

bamboo charcoal instead of the asbestos flakeboard and plastic boards. Ninety-five percent of the nicotine and other poisonous materials would be absorbed if cigarette filters were made of bamboo charcoal.

- **Other fields.** Bamboo charcoal can be made into many kinds of compound materials in the material industry. It also can be made into handicrafts, feed additives and high-capacity rechargeable storage batteries, etc.

Bamboo vinegar consists of 80 percent water. When it is dehydrated, the vinegar consists of about 80 to 200 components, or 32% organic acid, 40% phenolic compound, 3% aldehyde, 5% alkone compound, 5% alcohol compound, 4% ester compound and 5% others.

Bamboo vinegar is a by-product of bamboo carbonization. Bamboo vinegar can be used as soil fungicide, plant root growth promoter and deodorizer, in cosmetics, health drinks, medicines, etc. (Contributed by: Jinhe Fu, INBAR, China.)

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EDIBLE INSECTS

Edible insects in Ngao Model Forest, Thailand

Insects have been consumed by the human race for a long time because of their availability and high nutritional value. It is estimated that people eat at least 100 species of insects. The

cooking method for insects varies from species to species and place to place. Some insects are fried in oil, others roasted directly and some are fermented with whisky, while many species are eaten raw. There are different stages in insect development and each stage, namely egg, larva, pupa and adult, has a different method of processing.

Most insect consumption seems to be limited to rural areas at the forest fringes, where it is easy to collect the insects. In the Ngao Model Forest (NMF) area of Thailand, however, it is not only the local people, but also the people from towns, who collect and consume insects. Sometimes, people from outside the NMF come and collect insects, not only for their own consumption, but also to sell in the market.

The extent of insect consumption is rising sharply. Earlier, the insects used to be collected from the wild; it was not necessary to rear them since consumption was on a small scale. Nowadays, some edible insects are being reared for mass production and to reduce collection from their natural habitats. But most of the edible insects such as the giant cricket, cicada and bamboo worm are still collected from the wild, and only a few species are reared (cricket and some red ants).

In the NMF area, local people collect and consume insects regularly. They have the local knowledge of where and when to find insects and the techniques for searching and harvesting insects. They use the insects for household consumption, and the rest are sold in the market or along the roadside. Many edible insect species are harvested in the NMF area, including giant cricket, cicada, ant, mole cricket, giant water bug, water scavenger beetle, grasshopper, scarab beetle, etc. Most are harvested in the rainy season (early May to September). The giant cricket is usually found during June to August.

People usually only eat the eggs and young nymphs of red ants. The ants build their nest on evergreen trees such as mango and wood apple. The peak season for egg production is around



March-April. Eggs are sold in the market for very high prices, about B 10 to 20 for one small heap of eggs.

The mole cricket, giant water bug and water scavenger beetle always come out during the rainy season. The mole cricket and water scavenger beetle are also sold in small heaps (30 to 40 individuals) and are priced at B 15 to 20 per heap. For giant water bugs, the male has a higher value than the female, because the male has a good odour while the female does not. The price for males and females in the market is about B 2.5 and B 1.5 per individual, respectively. (Source: Extracted from *Model Forest Approach News*, July 2001.)

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Mopane worms

Mopane worm, the larval stage of *Imbrasia belina*, has been consumed as a delicacy in most southern African countries such as Zimbabwe, South Africa, Botswana, Zambia, Malawi and Namibia since time immemorial. The edible caterpillars, which are mostly found feeding on mopane trees (*Colophospermum mopane*), are a larval stage of the *Saturniid* moth. Full-grown larvae measure 50 to 80 mm and are fat, spiny, mottled black, yellowish, red-speckled caterpillars. Adults are large, brown, heavily scaled moths with conspicuous eye-spots on each wing. Adults have atrophied mouth parts, hence they do not feed.

These edible larvae are widely harvested in the southern parts of Zimbabwe for food (subsistence) or for sale by the local people. These are degutted, cleaned, boiled or roasted and dried without any further processing taking place. Despite the popularity of the mopane worm in Zimbabwe, little is known about its biology and ecology. An interesting phenomenon, however, is that although the mopane worm's favourite host is mopane, it is not found throughout its host range in Zimbabwe: it is absent in areas of a mopane veld on basalt preferring a mopane veld on granite. Mopane worms are also collected from miombo woodlands, although this is associated with dimorphism. Its alternative hosts include *Brachystegia spiciformis*, *Julbernardia globiflora* and *J. paniculata*.

Local residents in mopane worm areas of Zimbabwe feel that there has been a steady decline in the insect's populations. Mopane worms are also disappearing from parts of Botswana after heavy harvesting. The economic hardships and change in urban diets have led to the commercialization of this resource, resulting in its use going beyond that of the subsistence level. It is considered as having the potential to generate income to the resource-poor farmers in areas of mopane worm abundance. The major threats to mopane worm availability now are the effects of late-season burning on miombo woodlands, overutilization of the caterpillars, unavailability of hosts owing to deforestation and the cutting of large branches to collect the resource and the changes in climate, e.g. drought. In Zimbabwe the availability, in general, of edible caterpillars is reported to have diminished markedly; of the 14 species commonly said to have been consumed in the past, most have decreased in abundance and some are very rare.

A recent study on Zimbabwe has reported that there have been changes in the patterns of mopane worm exploitation for income which has been driven by availability of the resource, the need for cash and the changes in taste and market demands especially from urban dwellers who have maintained their rural tastes.

Commercialization of mopane worms in mopane worm abundant areas of Zimbabwe has brought about a wide range of social, economic and environmental degradation problems. The study recommended that the biology and ecology of the mopane worm be studied as a matter of urgency by the Forestry Commission. With sustainable utilization being one of the current ecological catchwords, the relevant scientific investigations will be necessary before enlightened inferences on the sustainability and the impact of harvesting on natural mopane worm populations can be made. At present, the impact of harvesting and utilization of mopane worms on the basic reproductive functions of mopane woodlands is not known. There are already fears of a decline in mopane worm populations in most southern African countries owing to overutilization. These studies should not be carried out in isolation from mopane woodland ecology, as there is already a delicate balance between the insect and its host. The study also recommended that mopane woodland ecology should be studied and that silvicultural management approaches incorporating mopane worm harvesting should be developed by the Forestry Commission. Non-wood forest products (NWFP) generally play a pivotal role in the sustainable management of forests, thus supporting biodiversity. Their commercial exploitation has been found to be less ecologically destructive than timber harvesting and therefore to have greater potential for sustainable forest management.

Mopane worms contribute significantly to rural household economies through nutrition and health contributions and as an important household food security resource. Nutritionally, mopane worms are comparable to and have even higher protein, fat, carbohydrate and calcium contents than beef, chicken and milk. The mopane worm's potential in enterprise development is actually dependent on the fact that it is a high-protein food source. Nutritional studies of mopane worms in local food industries have been carried out in Botswana and South Africa, but not yet



in Zimbabwe. These help to add value to the product and the full realization of the mopane worm potential in the sporting and livestock feeding industries and in infant food formulation. The potential of mopane worms in enterprise development will help in employment creation, especially in rural communities where income is only limited to agriculture.

Currently not much processing is done on the raw product, hence its marked absence on the international market. There is, however, a danger of overharvesting of the resource as a response to increased demand. Currently the buyers determine the prices because the harvesters have no transport, storage facilities and the marketing is not organized and is done at the harvesting camps.

The situation at present in Zimbabwe regarding NWFPs is marked by a serious dearth of information, especially for those products that are consumed locally, e.g. mopane worms. (Source: Pilot Studies – Zimbabwe. Data Collection and Analysis for Sustainable Forest Management in

ACP Countries – Linking National and International Efforts. EC-FAO Partnership Programme, 1998-2001.)

HONEY



Apiculture Development Programme

Apiculture is one of the most attractive and promising income-generating activities for PROSHIKA-facilitated group members owing to high returns and low investment.

Since the inception of the Apiculture Development Programme in 1976, PROSHIKA, one of the largest NGOs in Bangladesh, has innovated and introduced a number of new technologies to modernize apiculture practices in Bangladesh. Through its organized group members, PROSHIKA is moving towards

immense success and proven commercial viability, besides reaching its prime goal – poverty alleviation.

Beekeepers with two *melifera* colonies can earn Tk 5 000 to 6 000/year with only one hour per week. The total financial investment per box is Tk 1 000 and each box lasts about ten years. Group members are especially interested as they can run the programme at the same time as their other activities. Besides the Revolving Loan fund, group members also carry out many apiculture projects with their savings, since the capital required in such projects is very low.

The table below shows the success over the last three years with the active participation of group members of PROSHIKA.

Beekeeping and honey production

Component	1997-98	1998-99	1999-2000
Beekeepers (No.)	134	92	95
Bee colonies (No.)	808	796	388
Bee boxes (No.)	503	237	193
Honey production (kg)	16 586	13 562	13 727

FLOATING ON THE WINGS OF BEES

Birbal was a day-labourer in Bangshi Nagar village in the Tangail district of Bangladesh. He did not have any land of his own and had been living in a tiny hut on a piece of land that belonged to the government. He had to work hard on other people's farms to provide for his family of five and had nothing to look forward to.

The turning point came in 1994 when, with PROSHIKA's help, Birbal organized a group from his village and named it Daridra (the poor). His group started saving Tk 5 as required every month until the total savings stood at Tk 12 000. During that time, he received training in apiculture from PROSHIKA, after which he started his beekeeping venture. He bought four boxes with a credit support of Tk 2 000 from PROSHIKA.

The first year he produced 90 kg of honey, worth almost Tk 11 000. He easily repaid all the loans from his earnings and multiplied those four boxes into ten bee colonies. This time he produced 200 kg of honey worth Tk 24 000 and earned Tk 4 000 from selling the colonies. He soon became a man known in his area for selling pure honey.

In 1996 he built a tin-shed house for his family by selling eight bee boxes from his stock of 20 for Tk 8 000. That year his income from selling 240 kg of honey reached Tk 28 000. He has not taken any more assistance from PROSHIKA since. Beekeeping has been enough to lead him to brighter days.

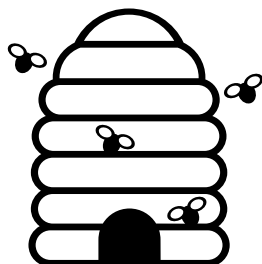
Then Birbal invited his brother to participate in his enterprise. In 1997, they had 22 bee colonies, which

produced 270 kg of honey worth Tk 37 800. This time he purchased two cows, a goat and some poultry from the earnings of the honey and bee boxes. In 1997, his family savings amounted to Tk 30 000. In 1998, he bought 40 decimal lands from his earnings and planted seasonal crops to earn even more money. He also installed a sanitary latrine at his house. Soon he owned 28 bee colonies and decided to cultivate *melifera*.

From being a day-labourer, Birbal thus became a self-reliant, well-off man and is now the leader of a PROSHIKA-facilitated group. His group now has savings of Tk 150 000 and has inspired seven other members of his group to come forward with apiculture projects. (Contributed by: A.Z.M. Manzoor Rashid, Bangladesh.)



Besides the group-based project for conducting training and experimenting further for the development of bee rearing, PROSHIKA runs three model apiaries. The developed varieties of *melifera* bees are reared in these apiaries through 227 bee colonies. In 2001 a total of 20 000 kg of honey was produced in these apiaries.



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Honey market ecoprotectionism?

Ecoprotectionism is the concern that applying environmental tests to the origin of products will provide a new excuse for limiting the imports of products from poor countries. Is this happening in the case of honey imports to the European Union (EU)?

On 12 February 2001, the EU Commission adopted a new decision (2001/158/EC) listing countries authorized to import honey into the EU. No African nations are included in this list and from Asia, only China, India and Viet Nam are eligible. The purpose of the legislation is to prevent honey containing undesirable residues from being imported into Europe. To be listed,

countries must submit a plan, setting out guarantees regarding the monitoring of various residues including antibiotics, pyrethroids, organochlorines and heavy metals.

For a country to be permitted to export honey to the EU, it must first be added to the list of permitted countries. Zambian honey exporters recently formed themselves into a group and, overseen by their Ministry of Agriculture, have successfully applied for Zambia to be added to the list. (Details of EU decision 2001/158/EC can be found at www.forum.europa.eu.int/public/irc/sanco/vets/info/)

Beekeepers working in remote areas of poor countries have good possibilities to produce top-quality, non-contaminated honey and beeswax. We must ensure that they also have a fair opportunity to obtain top prices for their premium products. (Source: *Beekeeping and Development*.)

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MUSHROOMS



Species No. 3.4 - 2000

Fungi, mushrooms and FAO

The FAO NWFP Programme is currently involved in various activities related to the sustainable use of fungi. These activities include:

- Compilation of a global study on *Wild edible fungi and rural livelihoods*. This study aims at compiling in one volume widely scattered information on the

uses and prospects for the development of wild edible fungi worldwide. The study is being compiled by CABI Bioscience on behalf of FAO. (For further information, please contact Sven Walter, FAO NWFP programme; e-mail: Sven.Walter@fao.org)

- Compilation of a subregional study on *Forest-based mushrooms in East and Southern Africa*, which aims at documenting and assessing mushrooms and community management, harvesting and trade. (For further information, please contact Michel Laverdiere, Forestry Officer, FAO Subregional Office, PO Box 3730, Harare, Zimbabwe; e-mail: Michel.Laverdiere@fao.org)
- Case study on the *Assessment of wild edible mushrooms in Malawi*. This field study is being carried out in the context of the European Commission-FAO Partnership Programme in order to support FAO's activities in the development of generic NWFP inventory guidelines. (For further information, please contact François Ndeckere-Ziangba, FAO NWFP Programme; e-mail: Francois.Ndeckere@fao.org)

Mushroom studies in Zimbabwe
Mushrooms in indigenous forests

An extensive literature review was carried out on the productivity and contribution of edible mushrooms found in miombo woodlands to rural household economies. It was observed that mushrooms occur in flushes during the rainy period, from November to April. Mushrooms have been observed to have 20 to 40 percent of crude protein, 3 to 28 percent of carbohydrates and a wide range of both macro- and micro-elements. Any assessment of the contribution of mushrooms to the rural economy should thus consider the total economic value (i.e. both consumed and traded quantities). Road survey results indicated that on average each household consumed approximately 20 kg of fresh mushrooms per annum. It is estimated that about 10 tonnes of fresh mushrooms are exported from miombo



woodlands annually, realizing about US\$500 000 to corporate organizations.

There is an apparent dearth of information on the productivity of mushrooms occurring in natural forests, which makes it difficult to assess their contribution to household incomes. Productivity has in the past been estimated from the amounts collected by mushroom gatherers, a method that can result in unreliable data because of the disparity between forest productivity and amounts harvested. Since most of the mushrooms occur in ectomycorrhizal associations with some specific trees, forest depletion can have significant impacts on mushroom yields. Of about 60 species of edible mushrooms used in Zimbabwe, those of the genera *Amanita*, *Cantharellus*, *Termitomyces* and *Lactarius* are the most preferred for collection.



Pine plantation mushroom (*Boletus edulis*)

Boletus edulis is an edible mushroom commonly found in pine plantations where it grows in symbiotic association with the roots of pine trees. A case study (survey) was carried out on three forest estates in the Eastern Highlands of Zimbabwe to assess mushroom production from the plantations, and their contribution to household income for the local communities. The findings show that pruned and thinned stands with slash scattered on the forest floor tend to yield higher volumes of edible mushrooms. Although mushroom harvesting is a high foreign currency earner business, its contribution to household income for local communities engaged in picking and processing operations is only at the subsistence level. However, the mushroom business was observed to have created

employment opportunities mainly to women (92 percent of the labour force).

Difficulty in obtaining reliable quantitative information on productivity stems from a significant level of illegal mushroom picking in the plantation forests. Further research on mushroom productivity is recommended in order to increase the income levels of the rural communities engaged in the picking operation. Moreover, educational programmes aimed at identifying other edible mushrooms on exotic plantations must be conducted so as to contribute to the development of the local mushroom pickers.

**For more information, please contact:
Sven Walter, FAO NWFP Programme.
E-mail: Sven.Walter@fao.org**

[Please also see under International Action – FAO in the field, for more information on these case studies.]

Développer des protocoles pour contrôler des populations de champignons

Une équipe du Service forestier de la Station de recherche du Nord-ouest Pacifique à Corvallis, au Département de l'agriculture des Etats-Unis (USDA), a développé une méthodologie pour inventorier, évaluer les rendements et contrôler la production de champignons sauvages comestibles depuis 1993. Leur expérience et le processus de développement des idées sont très bien documentés dans une série de publications et fournissent une étude de cas riche d'informations sur les problèmes d'inventaire des produits forestiers qui ne sont pas issus des arbres.

Les problèmes principaux qui se posent à l'équipe de conception viennent du fait que les champignons cibles (*Matsutake*, chanterelle et morilles) apparaissent comme des colonies dispersées, réparties spatialement de manière très inégale, très énigmatique (en grande partie invisible sur le sol) et également saisonnières. Il a été reconnu dès le début que la distribution inégale exigerait le développement de nouveaux schémas d'échantillonnage et analyses.

La première tentative d'inventaire a utilisé des méthodes empruntées aux études sur la diversité des champignons dans trois forêts étudiées. Dans chaque forêt, trois emplacements ont été choisis pour représenter les trois types de végétation les plus productifs de la forêt. À chaque emplacement, trois zones d'étude de 225x225 m (5 ha) ont été choisies pour représenter l'altitude, l'aspect et l'accessibilité à travers le type de végétation, fournissant ainsi neuf sites d'étude dans chacune des trois forêts étudiées. Chaque site a été entouré par des affichages qui en limitaient l'accès, et dans chacun d'eux, six échantillons en bande de 2x50 m, marqués de manière permanente, ont été systématiquement placés selon une orientation aléatoire. Les échantillons ont été mis en place pendant la période où les champignons n'avaient pas fructifié, afin d'éviter de prendre conscience de leur emplacement et d'introduire un biais. Les champignons ont été décrits en mesurant le chapeau et les diamètres des pieds, la distance verticale du voile au chapeau, la distance par rapport à l'arbre le plus proche et le volume récolté. Les chapeaux mesurés ont été marqués pour éviter les répétitions. Les échantillons ont été ré-examinés chaque semaine pendant la période de fructification. Après quelques années d'expérience, cette méthode a été en grande partie abandonnée car elle était trop chère et demandait trop de temps. Il a été également estimé que la zone d'échantillonnage était bien trop petite pour être correctement représentative de chacune des espèces. Les échantillons ont également été compromis par le prélèvement illégal et le vandalisme, alors que les collecteurs légitimes étaient quant à eux intimidés et ne pouvaient pas récolter normalement les placettes. De plus, des rapports météorologiques hors-site n'ont pas correspondu aux rendements. Après cette expérience il a été décidé de changer la méthodologie de l'échantillonnage. L'expérience japonaise a suggéré que le contrôle du shiro



(corps individuel de mycélium ou «château» en japonais) serait utile pour des champignons Matsutake.

Cependant, cette méthodologie est très consommatrice de temps et pourrait seulement être considérée pour des travaux de recherche et pas pour le contrôle ordinaire. Deux faits nouveaux dans le domaine de la méthodologie découlent de cette première expérience.

Il est proposé que le contrôle au niveau régional devrait être réalisé par des énumérateurs volontaires, choisis parmi les cueilleurs locaux et une proposition dans ce sens a été faite. Le plan consiste à utiliser des permis de récolte exclusifs, attribués comme motivation aux volontaires pour qu'ils fassent des relevés détaillés de la récolte à partir de placettes d'échantillons marquées.

L'échantillonnage stratifié systématique au niveau régional doit être mis en œuvre pour choisir des sites de contrôle locaux et les données utilisées pour étudier les relations entre la gestion forestière et la productivité des champignons. Le suivi des sites doit être contrôlé par le personnel du Service forestier. Le programme est destiné à être volontaire et basé sur une collaboration flexible et décentralisée, encourageant l'appropriation volontaire du programme.

Pour le Matsutake, une approche cartographique a été adoptée avec des champignons cartographiés en utilisant des arbres de référence, qui sont localisés au moyen du GPS (Global Positioning System). Dans un groupe de champignons, on inclut les champignons situés à une distance inférieure à 0,5 m, la distance entre les groupes étant d'au moins 2 m. Les groupes délimités ont subi des traitements de récolte expérimentaux et ont été contrôlés par le personnel forestier, avec la coopération des cueilleurs locaux qui ont conservé les zones alentours bien exploitées, de manière à décourager d'autres cueilleurs opportunistes. La méthode de sélection des arbres de référence n'est pas décrite, mais cette méthode semble être un moyen efficace pour échantillonner.

La recherche est toujours en cours pour trouver un protocole adapté au suivi des populations de champignons. Un manuel décrivant l'expérience actuelle et présentant les meilleurs conseils est en cours de préparation. (Source: Extrait de la publication *Évaluation des ressources en produits forestiers non ligneux. Expérience et principes de biométrie. Produits Forestiers non Ligneux n°13, FAO.*)

MUSHROOM WEB SITES

Many links to a wide variety of Web sites on mushrooms can be found at: www.phone-soft.com/cyber-world/make-frame.php3?framename=2569i.htm

Fungal Jungal

The Fungal Jungal is the Web site of the Western Montana Mycological Association (WMMA). The WMMA mission statement is to educate people further about fungi, edible and otherwise, encourage sustainable and responsible mushroom harvest, and preserve mushroom habitat. www.fungaljungal.org

SilviShrooms

A Web site on predicting edible mushroom productivity using forest carbon allocation modelling and immunoassays of ectomycorrhizae. www.fsl.orst.edu/mycology/ss/Index.htm



RATTAN

L'Afrique sur le marché mondial de produits en rotin: une place dérisoire

Le rotin est incontestablement l'un des plus anciens et importants PFNL qui font l'objet d'un commerce international de grande envergure. Son commerce mondial est évalué à près de 6,5 milliards \$EU et implique presque tous les continents. Dans ce sous-secteur, comme dans bien d'autres domaines enviables, l'Afrique se contente des derniers rôles.

L'Asie du Sud-Est a elle seule contrôle plus de deux tiers environ des exportations des produits finis en rotin estimées à plus de 3 milliards \$EU par an au cours des années 1990. Les principaux pays concernés sont l'Indonésie, les Philippines, la Malaisie, la Thaïlande, la Chine, le Singapour et la République démocratique populaire lao. En guise d'illustration, on peut retenir que les Philippines (moins de 100 000 km² de forêts) contribuent pour près 250 millions \$EU à ce commerce, soit environ 16 pour cent de la valeur de leurs exportations globales annuelles. À côté de ces géants, les ténors africains (le Nigéria, le Cameroun, le Ghana, la République démocratique du Congo, la Guinée équatoriale, la République-Unie de Tanzanie) sont pratiquement invisibles. Le Cameroun par exemple (plus de 200 000 km² de forêts) réalise des exportations annuelles d'articles en rotin de moins de 50 000 \$EU environ, soit largement moins de 0,5 pour cent de ses exportations totales. Au niveau des importations, les pays africains tout comme les ténors asiatiques suscités ne comptent presque pas, la consommation alimentée par les flux internationaux étant essentiellement la chasse gardée des pays développés (les importations annuelles d'articles en rotin et matières proches au cours des années 1990 représentaient au Cameroun environ 25 000 \$EU contre plus de 30 millions \$EU pour les Pays-Bas, par exemple). Compte tenu de la faiblesse des revenus en Afrique, c'est la quasi-absence des pays africains au niveau des exportations qui suscite le plus

PRODUCTS AND MARKETS



de curiosité à première vue. Ceci d'autant plus que l'Afrique dispose de quelques atouts potentiels dont une importante disponibilité de matière première, le faible coût de la main-d'œuvre et la proximité géographique des grands marchés de consommation européens et nord américains.

Ces avantages relatifs de l'Afrique par rapport à L'Asie du Sud-Est sont malheureusement annihilés par une foule de lacunes techniques, organisationnelles et commerciales. La faiblesse des facteurs de production est l'une des lacunes les plus handicapantes. Il s'agit notamment des techniques et d'outillages rudimentaires ou archaïques, de l'effectif d'intervenants réduits (deux personnes en moyenne par unité de transformation contre plusieurs dizaines aux Philippines, par exemple), des fonds de roulement très modestes (inférieur à 50 \$EU par unité de transformation) et d'un manque de formation technico-commerciale appropriée pour les acteurs. Cette faiblesse est à l'origine d'une production de qualité quelconque ou médiocre (retraits, fissures, fentes, traces de brûlures, attaques biologiques, imitation servile au niveau du dessin). La faiblesse des facteurs de production entraîne aussi la fabrication des articles en quantités réduites (au Cameroun il faut en moyenne trois à quatre mois à une unité de transformation pour exécuter une commande de 500 petits paniers tandis qu'aux Philippines ce délai ne peut en aucun cas excéder une semaine pour une unité de transformation de taille moyenne) et non uniformes. Ce qui est contraire aux exigences des circuits de ravitaillement et de distribution moderne débouchant sur une consommation de masse.

L'absence de filière d'exportation bien établie constitue aussi un handicap à grande portée. Les canaux de ventes à l'extérieur des pays producteurs du continent africain sont pour la plupart très occasionnels ou sporadiques et sont le fait des étrangers de passage, des organisations non gouvernementales (ONG) et des organisations caritatives internationales. Enfin, le manque de marketing est aussi une des origines de la

position plus que marginale des pays africains sur le marché mondial d'articles en rotin.

Face aux pays africains noyés dans ces lacunes, on retrouve des pays de l'Asie du Sud-Est qui, depuis plusieurs décennies, ont mis en place un puissant arsenal de production et de commercialisation dynamique et efficace fait d'outils, de techniques, de mesures et autres stratégies efficaces:

- un dispositif apte à faire face aux fortes demandes dans des délais courts tout en offrant des articles standardisés et de qualité satisfaisante;
- développement de «joint ventures», mise en place ou utilisation des structures de promotion efficaces (ASMINDO, CITEM, l'IKEA) et création des circuits d'exportation contrôlés par des professionnels;
- des mesures d'appui des gouvernements (prêts à des taux favorables, exemptions fiscales, aide à la formation, transfert de technologies) et des rapports étroits avec des ONG et ATO du Nord qui font la promotion des articles asiatiques pour diverses raisons.

Au regard de la situation ainsi présentée, les pays africains doivent nécessairement opérer une véritable révolution dans le sous-secteur rotin pour espérer tirer parti de la forte demande mondiale de produits finis de ce PFNL. Les partenaires des pays africains intéressés par la situation des populations forestières devraient les aider à développer cette activité compte tenu des potentialités de ce PFNL en matière d'emploi, de lutte contre la pauvreté et de conservation des forêts. (*Contribution de:* Louis Defo, CML, Université de Leiden (bourse WOTRO), Pays-Bas et Université de Yaoundé, BP 8297, Yaoundé, Cameroun; mél.: defotls@yahoo.fr)

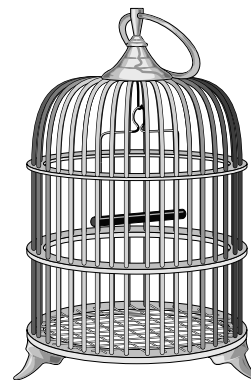
FAO and rattan

Rattan proceedings

The proceedings of the Expert Consultation on Rattan Development, which was held in Rome from 5 to 7 December 2000, have now been published in FAO's Non-Wood Forest

Products series as *Rattan. Current research issues and prospects for conservation and sustainable development.*

Printed copies of this publication are available through FAO's Sales and Marketing Group (publications-sales@fao.org); the electronic version is available at: www.fao.org/docrep/003/y2783e/y2783e00.htm



Unasylva

Worldwide, hundreds of millions of people trade in or use rattan for purposes ranging from furniture – the best-known rattan product – to walking sticks, umbrella handles, baskets, matting, hats, ropes, birdcages, fish traps and numerous other local uses. However, rattan resources (which comprise some 600 species), throughout their natural range in the tropical forests of Asia and Africa, are being depleted through overexploitation, poor forest management and loss of forest habitats.

A recent issue of *Unasylva* spotlights this important but perhaps underappreciated non-wood forest product. The articles in this issue have all been adapted from papers presented at the Expert Consultation on Rattan Development, which was held in Rome from 5 to 7 December 2000 to assess the current status of the resource and its utilization, identify the major issues facing the rattan industry and formulate recommendations for promoting economic and technical cooperation for the development of rattan globally. The complete papers have been published in the proceedings.



A problem underlined by the expert consultation, and voiced by many authors in this issue, is the absence of reliable statistics on rattan at all levels. National forest inventories, with few exceptions, do not include rattan, and quantitative information on the resource base and volume and value of trade is scarce.

Collection of statistics and exchange of information on rattan are among the main objectives of the International Network on Bamboo and Rattan (INBAR), established in 1997 with a global mandate to promote the development of bamboo and rattan for socio-economic and environmental well-being. In addition, international agencies such as the Center for International Forestry Research (CIFOR), the International Tropical Timber Organization (ITTO), the International Plant Genetic Resources Institute (IPGRI) and FAO deal with rattan, either through specific programmes or indirectly in their livelihood support programmes.

Given its economic, ecological and socio-cultural importance to a large number of people in the world, there is an urgent need to ensure a sustainable supply of rattan. Attention to property rights, quality improvement, control of illegal harvesting, market information, prevention of post-harvest losses and supportive tax policies are recommended to help improve benefits to harvesters and producers, providing an incentive to maintain the resource sustainably. (Source: *Unaysylva*, No. 205.)



Development of rattan for edible shoots in the Lao People's Democratic Republic
Although globally rattan is seen principally as a cane-producing plant, in the Lao People's Democratic Republic (and also in northeastern Thailand) rattans also supply edible shoot tips. These are consumed locally or exported to Southeast Asian communities in France, the United States and elsewhere.

The trade in edible rattan shoots from wild plants is large, unquantified and essentially unregulated. *Daemonorops jenkinsiana* thrives in the north of the country in areas of shifting cultivation and appears to be the main source of shoots for the markets there. Its profusely clustering clumps survive fire, deforestation and repeated shoot removal very well. The cane of this species is not highly sought after, so trade in its shoots has little effect on overall commercial cane production. However, in some places valuable cane-producing species are targeted, and this trade is of greater concern.

Rattan plantation development is beginning to get under way in the country, and plantations for edible shoot production are a dynamically growing subsector. Small-scale nursery trials have been made for six or seven species with commercial potential. Only one or two very small trials of plantations for cane production have begun, but one species (*Calamus tenuis*) has already become a major commercial success in plantations for edible shoot production. Many fields begin producing saleable shoots only a year or so after planting and can then be harvested monthly for many years thereafter, offering a return that is competitive with rice production. Rattan prefers sites where regular flooding would damage most other crops.

In the Lao People's Democratic Republic the techniques for rattan cultivation for edible shoot production were first developed in 1994, inspired by large-scale commercial planting in Thailand of three species (mainly *Calamus viminalis* with some *Calamus siamensis* and *C. tenuis*) which began

three years earlier. It is estimated that more than 50 planters have planted areas of more than 100 ha in at least five provinces.

The outlook for expanding edible shoot production is much better than that for cane production. There is a large domestic market, and the Lao People's Democratic Republic competes only with Thailand in supplying the export market. Furthermore, planting is spreading rapidly without the need of special policy support because, unlike cane, shoots of *C. tenuis* offer a rapid and proven return on the open market.

The edible shoot sector seems to be the most promising area for support of rattan development. The Lao Forestry Research Centre and Oxford University and Kew Gardens in the United Kingdom have drawn up a programme for which funds are currently being sought.

The shoot subsector could also offer some spin-off benefits for the cane sector. The plantations have little potential for conversion to cane production because the rattan is grown in open sun with no available climbing supports. However, the abundance of cheap seedlings and the widespread expertise in growing these species will make cane plantations easier to establish if economic conditions become attractive in the future. (Source: *Unaysylva*, No. 205.)

**For more information, please contact:
Mr Tom Evans, Researcher, The Darwin Initiative, Lao Rattan Research Project, Oxford Forestry Institute, Oxford, UK. ●**





BANGLADESH

Rare and endangered economic plants of Bangladesh

Plants of economic and medicinal value were once abundant in the forests of Bangladesh. But, unfortunately, these important resources are getting rarer day by day. Unless immediate attention is given, the country may lose these important and useful resources forever.

Forest land is decreasing at an alarming rate and in that context the Forest Department of Bangladesh cannot provide land for any plants except for commercially important timber-yielding species in normal plantation programmes. As a result, other economic plants are becoming rarer in the forest area.

Herbal medicines are still a most popular and accepted way of treatment for the vast majority of people (tribal) in rural and hilly areas across the country. It is part of their belief and cultural heritage. Therefore, to meet the needs of these people in remote areas where herbal medicines are their only form of remedy, we cannot but emphasize conservation and extension of cultivation of economic plants of medicinal and other values. In that context, the question is how can the problem be met, as these are not priority species in the normal plantation programme of the Forest Department? The only way is community-based forestry programmes where these important economic plants can easily be included. If this is done, it will not only serve the people but will also save these important resources from extinction.

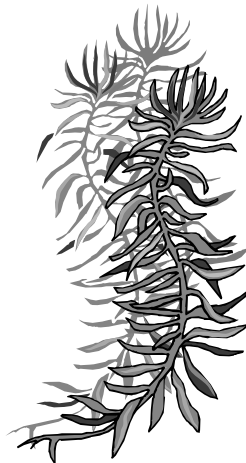
To achieve this, some important and widely used economic plants should be included in community-oriented forestry programmes. A short list of threatened multipurpose economic plants of socio-economic importance is given in the table.

It is high time that initiatives were taken to protect our valuable economic plants from extinction in order to serve the ailments of the rural poor of

Plants with economic value

Local name	Scientific name
Haritaki	<i>Terminalia chebula</i>
Bohera	<i>Terminalia belerica</i>
Amlaki	<i>Embllica officinalis</i>
Arjun	<i>Terminalia arjuna</i>
Khair	<i>Acacia catechu</i>
Neem	<i>Azadirachta indica</i>
Chalmogra	<i>Hydnocarpus kurjii</i>
Bel	<i>Aegle marmelos</i>
Ashok	<i>Saraca indica</i>
Tetul	<i>Tamarindus indica</i>

Bangladesh. (Contributed by: A.Z.M. Manzoor Rashid, Lecturer, Department of Forestry, Shahjalal Science & Technology University, Sylhet-3114, Bangladesh; e-mail: pollen-for@sust.edu or pollen_for@hotmail.com)



BRAZIL

Preliminary study into NTFPs at a new ecological reserve in southeastern Brazil

The Reserva Ecológica de Guapiaçu (REGUA) is located in the Serra do Mar mountain range, approximately two hours northeast of Rio de Janeiro by car. Encompassing 7 385 ha and an altitudinal range of 35 to 2 100 m, this Atlantic rain forest reserve was created to preserve permanently one of the biologically richest and most important examples of this extraordinary forest type remaining.

A preliminary study was conducted from September 2000 to March 2001 to

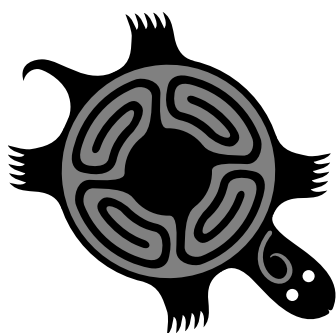
assess the potential for REGUA to provide local employment through the development of selected non-timber forest products (NTFP). As part of this study into potential NTFPs, local interviews were conducted with community elders during the second half of 2000 to ascertain the level of knowledge regarding traditional plant use and to identify species worthy of further study. Sadly, little ethnobotanical knowledge exists to date. Although NTFP studies have been conducted on the Atlantic rain forest, they are few and, given the wide intersite variation in flora due to differences in aspect, altitude and microclimate, of little use until an inventory of the reserve's flora has been conducted. It is hoped that the research team from the Jardim Botânico in Rio de Janeiro will undertake such an inventory in the near future.

Identification of potential NTFPs, therefore, is difficult at present, although exploration of the reserve has suggested several possible avenues of investigation. The forest contains a rich diversity of begonias, ferns and heliconias, all with a potential market as ornamental or houseplants. Owing to their ease of cultivation, begonias would seem to offer the most promise. Given the reserve's proximity to a major urban market (Rio de Janeiro), the sale of ornamental and houseplants cultivated from forest species may prove to be a valuable source of income for the reserve and the local population.

REGUA was established under Brazilian legislation in 1998 and is managed in association with the local communities centred around the village of Guapiaçu. The reserve is supported by and is a project of the Brazilian Atlantic Rainforest Trust, a United Kingdom-registered charity committed to the preservation of this unique and highly threatened environment. REGUA publishes a quarterly newsletter which includes regular articles about the reserve's conservation, research, environmental education and community outreach programmes. (Contributed by: Simon Comerford, Temporary Site Manager, June 2000-March 2001.)



For further information about REGUA, or to subscribe to the newsletter, please contact: Stephen Knapp, Project Director, REGUA Administrative Office, 1 Compton Cottages, Upper Norton, West Sussex PO20 9DZ, UK. Tel./fax: +44 (0)1243 601029; e-mail: Stephen.Knapp@smre.demon.co.uk; www.regua.org



Ashaninka Indians will manage ecological hotel in Acre

The Ashaninka Indians will be the first indigenous community in Brazil to run a small ecological hotel. The hotel, which will be located in the Marechal Thaumaturgo region in the extreme west of Acre, close to the border with Peru, will begin to be constructed in the next few days on the banks of the Amonia river.

In Pará, in the Altamira region, Tataquara Hotel is already in operation. It is administered by the cooperative Amazoncoop, which involves the participation of the Arawete Indians. The cooperative was created four years ago to help develop economic activities which would guarantee the Indians' survival. The cooperative also manufactures copaiba oil, which it exports to the United Kingdom-based Body Shop chain.

The Ashaninka hotel is being financed by the state government of Acre with resources from the National Social and Economic Development Bank (BNDES). It will accommodate up to 40 people in eight chalets. The head of the Brazilian Indian Foundation (FUNAI) in the state said that the proposal is to create a centre for the study of traditional knowledge.

A further two hotels are planned in Acre. BNDES is investing a total of \$R 1.1 million in the project. (Source: Amazon News, 7 February 2002 [newsletter@amazonia.org.br].)

CAMEROON

Community leaders' forum is playing leading conservation role

Nyasoso-Cameroon-Mount Kupe, in southwestern Cameroon, is one of the last remaining areas of montane forest in Cameroon. Extending over an area of about 30 km², and rising to an altitude of 2 050 m, the mountain is covered in pristine forest. It is home to many rare and unique species. It is also a place of great importance to the Bakossi people, for whom it provides food, water, medicine and building materials – as well as being the sacred home of their ancestors.

However the proximity of the mountain to a major highway has encouraged an ongoing influx of non-native people from other parts of the country into the area. The population around the Mount Kupe conservation site is now estimated at 140 000, spread over an area of 350 km². Subsistence farming is quite intensive in the forests along the mountain slopes, with some farms being found at an altitude of 1 000 m.

The use of the forest by this increasing population together with attempts to derive subsistence from the natural resource base of the area constitute important threats to the conservation of wildlife and plants in the forest and the mountain.

To address some of the issues facing the mountain and the people who live around it, the Kupe All Chiefs Meeting, representing 19 village communities from the area, meets regularly to discuss problems facing the natural environment and to mobilize the local people to seek solutions to them.

The WWF Coastal Forest Programme has been working with the local people to demarcate a farm/forest boundary around the mountain and ensure that farms do

not take over the entire mountain. By this demarcation, no farms can cultivate above 1 000 m on the mountain slopes. The farm/forest boundary is 4 m wide and a total of 40 km have so far been demarcated. Traditional boundary markers (dracaena) have already been planted on 30 km of the demarcated boundary. Patrol teams are being set up in areas where demarcation has been accomplished to make sure people do not encroach on the conserved areas within the boundary. Here again, the chiefs will be on the frontline, moving around their villages, sensitizing their people. Each chief leads his village demarcation team and is there to resolve any conflicts that arise.

When demarcation is completed, the conserved forest will be gazetted, maps will be produced and community management plans drawn up. However, WWF's funding for the Mount Kupe Forest Project has now run out, and more funds are being sought to help the chiefs ensure the ongoing protection of this important area. (Source: www.panda.org/news/features/story.cfm?id=2681, in RECOFTC e-letter 2002.3.)



Quelques plantes à fruits comestibles de la Réserve Forestière des Monts Rumpi (RFMR) sud-ouest du Cameroun

Une étude des plantes à fruits comestibles a été menée entre juin et septembre 1997 dans la Réserve forestière des Monts Rumpi (RFMR) située dans le sud-ouest du Cameroun qui regorge d'une grande variété de ressources naturelles et plus particulièrement d'espèces animales et végétales. Dans sept villages (Meta, Iyombo, Madie, Dikome-Balue, Kita,



Monsongisele Ngolo et Meka), 10 à 20 pour cent des ménages ont été interrogés et un total de neuf plantes à fruits comestibles ont été identifiées. L'enquête a révélé la présence de plusieurs taxons à fruits comestibles dans ce site (plus de 1 000 espèces). Cependant, l'identification précise et la promotion de ces plantes à fruits comestibles, qui constituent pour les villages proches de la réserve la troisième source de revenu après l'agriculture et la chasse, posent encore quelques problèmes. Il s'agit notamment de la crise économique que traverse le Cameroun, de manque de route pour l'écoulement des produits vivriers et de l'interdiction de chasse dans les aires protégées.

Les espèces suivantes ont été retenues sur plus de 20 fruits qui sont récoltés et consommés par les habitants de la périphérie de la RFMR:

- *Irvingia gabonensis* (mangue sauvage). Il existe deux variétés de cette espèce; *I. gabonensis* var. *gabonensis* et *I. gabonensis* var. *excelsa*. La poudre des cotylédons de ces deux variétés est utilisée dans la préparation d'une soupe gluante très appréciée dans la plupart des régions d'Afrique. Ces graines rentrent aussi dans la fabrication de divers produits tels que les savons et les produits cosmétiques et pharmaceutiques.
- *Cola lepidota* (cola du singe). Son péricarpe blanc mou et sucré est très consommé dans la région. L'huile extraite des fruits secs est utilisée dans la cuisson des aliments, dans le traitement des plaies, des brûlures, des douleurs rhumatismales et des vers ronds. Elle est aussi utilisée comme vermifuge.
- *Tetracarpidium conophorum* (acajou). L'endosperme est huileux et est communément bouilli et consommé. L'huile extraite des graines est aussi utilisée dans la cuisson des aliments.
- *Garcinia kola* (cola amer). Les graines sont mâchées en dépit de leur goût très amer. Elles sont utilisées en médecine traditionnelle dans le traitement de plusieurs maladies (l'écorce de la tige est

utilisée comme purgatif et dans le traitement des tumeurs) et sont aussi utilisées pour soigner le rhum de cerveau ou de poitrine et la toux. Elles sont aussi mâchées comme aphrodisiaque.

- *Ricinodendron heudelotii* (njangsa). Les fruits écrasés sont utilisés comme épice pour assaisonner les soupes. Le latex et les feuilles sont localement utilisés comme purgatif.
- *Piper guineense* (piment sauvage). Les fruits et les feuilles secs sont utilisés comme épices pour assaisonner les soupes. En médecine traditionnelle, les feuilles et les fruits sont utilisés dans le traitement de la toux, les graines sont utilisées dans le traitement des douleurs d'estomac et comme antibactérien. Les feuilles, les racines et les graines sont incorporées dans les préparations pour le traitement de diverses maladies infectieuses. L'huile extraite des fruits contribue à la production des savons et des parfums.
- *Afrostryax lepidophyllus* (oignon de pays). Le fruit est une noix sèche indéhiscente, à graine unique, avec un exocarpe brun et dur. Il dégage une odeur caractéristique de l'oignon. Les fruits écrasés sont utilisés pour assaisonner les aliments.
- *Dacryodes eludis* (safou, prune, beurre sauvage). Les fruits sont bouillis et le mésocarpe consommé.
- *Cola acuminata* (noix de cola). Les graines sont mâchées pour stimuler le système nerveux. Elles sont aussi utilisées pour couper l'appétit.

Cependant les fruits d'*Irvingia gabonensis* et d'*Afrostryax lepidophyllus* sont les plus récoltés par rapport aux *Piper guineense*, *Dacryodes eludis* et *Cola acuminata*. Ces différences au niveau des récoltes et des ventes s'expliquent par l'usage de chacun des fruits.

Le paradoxe c'est que tout le potentiel de la production des fruits comestibles de la RFMR n'est pas suffisamment exploité. À la sous-estimation de la diversité des fruits s'ajoutent le manque d'informations et le risque lié à la

destruction progressive de la forêt. Or l'afflux des commerçants de fruits venant du Nigeria devrait faire en sorte que la récolte de ces fruits profite à l'économie de ces villages.

Cet article, une sorte d'éveil de conscience, a permis d'inventorier quelques plantes à fruits comestibles rencontrées dans la Réserve forestière des Monts Rumpi, mais surtout de mettre en avant l'importance de ces ressources pour les régions avoisinantes. (Source: Département de biologie végétale, Faculté des sciences, Université de Dschang, BP 67, Dschang, Cameroun.)



Cola acuminata

CANADA

Northern Forest Diversification Centre
The Northern Forest Diversification Centre (NFDC) is a subsidiary of Keewatin Community College and is located in The Pas, about 600 km north of Winnipeg. It currently operates as a demonstration project funded by Western Economic Diversification and the Province of Manitoba.

Keewatin Community College's geographic territory covers all of Manitoba north of the 53rd parallel. This region comprises five urban centres and approximately 65 remote or semi-remote communities. The total population of the region is 79 000, of which approximately 50 percent are of aboriginal descent, residing predominantly in the remote communities. Keewatin Community College operates two campuses, five regional centres and training sites in several other communities, depending upon demand.



The programme targets unemployed or underemployed residents of remote communities in northern Manitoba. While there are no population restrictions placed on participating in the programme, the programme's focus on remote communities means that almost all participants are aboriginal. In addition, more than 75 percent of programme participants to date have been women.

The NFDC's conceptual base is to link the demand for wild, natural products and ecologically harmonious recreational experiences with the need to create sustainable and culturally appropriate employment opportunities in remote communities. Economic forecasters indicate that the potential of these two emergent industries – the non-timber forest products industry and ecotourism – is to achieve a fourfold increase.

Non-timber forest products (NTFP) typically refer to a wide variety of products derived from forests, including aromatics, cones and seeds, forest botanicals, nutraceuticals, wild flower honey, conifer boughs, wild rice, berries, maple and birch sap products, mushrooms and medicinal herbs. While the term NTFP is relatively unknown, a consumer simply has to walk into any craft store, pharmacy, supermarket, garden centre, florist shop, gift stand, market garden or health food store to see the many uses of NTFPs.

Ecotourism is an economic activity at the heart of the "green economy", where tourist dollars turn local people into entrepreneurs and partners in conservation. Ecotourism depends upon local resources, wisdom and expertise, and translates these into economic advantage at the local level. Indeed, the definition of ecotourism is "... responsible travel to natural areas which conserves the environment and improves the welfare of local people".

Both of these industries are based on the sustainable use of local products and environments in a way that is compatible with the skills, knowledge, culture and aspirations of residents of remote communities. Furthermore, the long-term viability of these two industries is

founded upon conserving – even enhancing – the biodiversity of the natural environment to the greatest extent possible. With 51 percent of its landmass covered by boreal forest, Manitoba is a veritable storehouse of NTFPs. Its rich history and culture, huge expanses of unspoiled wilderness and lakes and diverse ecosystems ranging from prairie to tundra provide Manitoba with the potential to become an ecotourist's paradise.

Linking the supply of these natural resources to the growing demand that exists for them, and to do so in ways that create sustainability and maximum benefit for those who live closest to the resource, is the vision of the NFDC.

In keeping with the community college mission, the NFDC aims to provide learning that will restore the self-respect and self-sufficiency of adults who have been culturally and economically marginalized through inappropriate social and economic change.

The NFDC is an innovative community economic development model. It directly links adult learning with income generation, while also sustaining local cultural values, enhancing individual self-respect, re-establishing traditional harvesting practices and returning income to the community.

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Medicinal Plant Project, Canada

For the past year, a variety of commercially valuable medicinal and nutraceutical botanicals have been cultivated on a section of BC (British Columbia) Hydro's right of way on the Sunshine Coast, as part of the Medicinal Plant project.

The purpose of the Medicinal Plant project is to:

- showcase the commercial potential of cultivating medicinal and nutraceutical botanicals;
- show the compatible uses of BC Hydro's rights of way;
- encourage private sector growers, small landholders and First Nations to develop their own medicinal plant operations;
- discourage unregulated commercial harvesting of wild plant species from British Columbian forests, which can cause significant environmental damage; and
- demonstrate alternative forest practice methods that can be adopted throughout the province.

Maintaining its rights of way and promoting low-growing plant species helps BC Hydro increase safety and reliability by reducing the number of power outages caused by trees and branches coming in contact with power lines. Medicinal plants demonstrate the company's commitment to environmental sustainability and compatible uses of its rights of way. BC Hydro is contributing \$150 000 to help fund the MP project, which involves growing selected, commercially viable, botanical species including *Echinacea*, St John's wort, mullein and devil's club. These species are well suited to the unique combination of conditions found on the rights of way, require minimal tending once established and are in demand as cash crops. Shade-tolerant medicinal plants are also being grown on the periphery of the right-of-way corridor. Both native and non-native plants and fungi with a variety of beneficial properties have been planted.

The final report of this medicinal plant project is available from: bryan.bodell@bchydro.bc.ca (Contributed by: Russel Wills; e-mail rmw@idmail.com)



North Island non-timber forest products projects

The Inner Coast Natural Resource Centre (ICNRC) has been at the forefront of NTFP development on North Island (Vancouver) since its formation in 1997. With the help of external partners such as the University of Victoria and the Royal Roads University, ICNRC has sponsored two NTFP workshops, a regional strategy session and a major NTFP demonstration project.

From these projects, the following issues were identified:

- significant potential for NTFP-based economic development;
- concern about the possibility of overexploitation of yet another set of natural resources;
- lack of information about, and management of, the sector;
- potential implications of NTFP industry expansion for First Nations.

One of the strongest issues that emerged from the first NTFP workshop in 1998 was the conviction that in British Columbia there is still an opportunity to "get this industry right".

"BENEATH THE TREES"

To receive a copy of *beneath the Trees*, the North Island Non-Timber Forest Products Newsletter, please contact:

Diane Carley, Communications Coordinator, NTFP Demonstration Project, Box 32, Sointula, BC, Canada. Fax: +1 250 9736168; e-mail: dhcarley@island.net

Subsequent projects have helped lay the groundwork for the development of new business and employment opportunities. The most recent NTFP demonstration project sponsored by ICNRC in 2000-2001 played a role in:

- the creation of two to three new businesses;
- the creation of approximately 20 jobs in the region (both seasonal and full-time);

- the expansion/enhancement of three existing enterprises;
- the development of an NTFP inventory methodology.

Many of those who benefited from the project were First Nations residents and others impacted by downturns in the traditional forestry and fishing sectors. Perhaps most important, the demonstration project served as a foundation for further NTFP work on North Island, such as the current Integrated Demonstration Project for Non-Timber Forest Products led by Royal Roads University.

The ICNRC hopes to provide a repository for information gathered through this project (e.g. reports, maps) and to help communicate project results through their Web site.

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CHILE

Innovación tecnológica y comercial de Productos Forestales No Madereros (PFNM) en Chile

En Chile tenemos una amplia variedad de PFNM que constituyeron los alimentos, medicinas y utensilios que tuvieron los primeros habitantes del país. Hoy aún son de una importancia capital, ya que más de la mitad de la población tiene como ayuda medicinal de primera necesidad el uso de plantas medicinales, yerbas, cortezas, frutos, hojas, y otros productos se utilizan como

materiales de construcción, tejido y alimento. Grupos étnicos, como los pehuenches, utilizan el pehuén o piñón de la araucaria como su principal alimento. Tradicionalmente también ha habido un desconocimiento oficial del aporte de los PFNM a la economía nacional, local y especialmente rural, y a la alimentación de vastos sectores de la población, generalmente los más pobres, y de su contribución como fuente de trabajo a más de 200 000 personas en zonas deprimidas y en épocas de mayor escasez de trabajo.

El presente proyecto apunta a contribuir a la formalización y expansión de la actividad económica que genera la utilización racional de los PFNM. El objetivo general es "perfeccionar la gestión tecnológica y comercial de los PFNM asociados a la actividad silvícola nacional, e incrementar su productividad y rentabilidad en función de la demanda de los mercados nacionales e internacionales".

El proyecto contempla en su esquema metodológico, la obtención, análisis y validación del conocimiento de los sistemas productivos derivados del bosque, a partir del actual estado de desarrollo de las diferentes cadenas productivas. Se espera obtener información del conjunto de los PFNM, para luego focalizar las investigaciones y desarrollo hacia uno o dos productos seleccionados entre los de mayor relevancia e importancia económica.

Las investigaciones pertinentes comprenden el análisis de todos los eslabones de la cadena productiva de los productos seleccionados, de aspectos de biología y ecología de la especie, silvicultura y manejo, y de los métodos de recolección y cosecha, los tratamientos pre y post cosecha, manipulación, normalización, comercialización y escalamiento más adecuado, para transferir luego este conocimiento a los actores involucrados en el tema.

Participarán en este proyecto dos institutos de investigación y desarrollo (INFOR e INTEC-Chile) que disponen de amplios conocimientos y experiencia en el sector forestal, en general, y en los



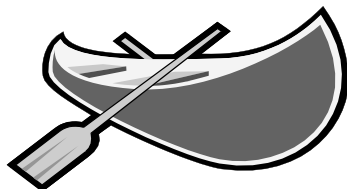
PFNM, en particular. Se ha incorporado, además, a un grupo de empresas, grupos campesinos y étnicos, e instituciones nacionales como CONAF, INDAP, CONADI, que han participado activamente tanto en la formulación y, como se espera, en la ejecución del proyecto. Diversas instituciones extranjeras brindarán su apoyo a través de asistencia técnica y asesorías en materias pertinentes; tal es el caso de la FAO, de la Academia China de Ciencias Forestales (CAF), de la Red Internacional del Bambú y Ratán (INBAR) y de entidades de Europa y Asia interesadas en el desarrollo y conservación armonioso de los bosques nativos.

La metodología de transferencia considera la capacitación y articulación entre operadores forestales, empresas vinculadas, organizaciones e instituciones. Se utilizarán técnicas tradicionales de difusión como seminarios, días de campo, charlas, exposiciones, y métodos más modernos ya antes señalados. Además, se utilizarán los medios de difusión e intercambio utilizando tecnología actualizada, estableciendo una página Web del proyecto y difundiendo a través de la actual Red de PFNM que opera en el servidor de INTEC-Chile, así como utilizando la Plataforma de Educación a Distancia de ésta institución. Se producirán además CD-ROM con material recopilado por el proyecto que se pondrá a disposición de los usuarios. (*Contribución de:* G. Valdebenito R.)

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HONDURAS



The creation of markets and trade plays a central role in strategies that aim at merging conservation goals with improved local welfare. But increased wealth and exposure to markets may have unforeseen side effects. Josefien Demmer and Han Overman studied these effects among Tawahka Indians in Honduras and Tropenbos International has published the results.

The Tawahka Asangi Biosphere Reserve in Honduras was created in 1999 to reconcile the conservation of biodiversity with sustainable use and the protection of indigenous land rights. Despite this protected status, the Tawahka territory is not free from the effects of the market. The results of this study suggest that people intensify their use of forest resources as their links with outside economies and wealth are strengthened.

Increasing levels of wealth and integration into the market appear to result in higher per capita pressure on forest resources. Some species face more pressure than others, however. Plants that provide thatch and timber for canoes and board, in particular, face more intensive exploitation with increased integration and wealth, while red brocket deer, peccaries, spider monkeys and some birds are among the animal species that are more intensively hunted.

The effects of integration into markets cannot be assessed, however, on the basis of extraction data alone. The authors argue that the effects of income-generating forest use and increases in the area of cultivated land should also be taken into account. For example, cash generated by ecotourism may have negative side effects on the forest, because of agricultural expansion.

There are also the dynamics of foraging economies. Most of the wealthier and more integrated Tawahka households have abandoned forest-based activities for more profitable occupations (e.g. agriculture, shops, wage labour). It is also highly probable that more prosperous communities increase in population size. The authors therefore conclude that increasing wealth and integration into markets are likely to lead to the concentration of people in one place, as well as to higher rates of per capita consumption. They expect that "sooner or later, the need for management and collectively accepted agreements on forest resource use will be required."

In order to reduce pressure on certain species, the two researchers suggest:

- exploring the possibilities for setting up pig farms;
- discouraging sales of canoes and boards to outsiders;
- establishing mixed tree plantations and introducing wood preservatives, lesser known species and Amazonian canoe-building techniques.

Demmer and Overman demonstrate that the annual value of the forest accruing to the Tawahka ranges from US\$17.8 to \$23.7 per hectare. This combined value of consumption and the sale of forest goods is only a small fraction of the value that the global community attaches to services of the forest such as climate regulation, CO₂ absorption and erosion reduction. This leads to the conclusion that the global community should consider compensating villagers for foregone benefits if they would be willing to refrain from activities that lead to deforestation and forest depletion. This would increase the financial incentives for conservation as well as raise local welfare. The specifics of such mechanisms should be negotiated between policy-makers, NGOs and indigenous groups. Demmer and Overman believe that this could be a promising long-term management strategy for indigenous reserves, because it covers the direct interests of the stakeholders. (J. Demmer and H.



Overman. 2001. *Indigenous people conserving the rain forest? The effect of wealth and markets on the economic behaviour of Tawahka Amerindians in Honduras*. Tropenbos Series 19.

Tropenbos International, Wageningen, the Netherlands. ISBN 90-5113-053-8.)

This publication can be ordered from:
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INDIA



The Atavi (*Atavika*) forest tribes derive their livelihood in most part from the forest, as is evident from their life style – eating, clothes and household design, etc. The forests and tribals live in harmony in what might be called the anthroposylvan ecosystem; the forest is a living complex and so is humankind. More than 90 percent of their needs are met through the collection, consumption and sale of NTFPs, which not only provide sporadic support by providing short-term monetary gain, but also by providing employment to all, irrespective of caste, creed, age, sex and economic viability over the year.

The contribution of NTFPs to the food security base of the hill dwellers is quite significant year-round in terms of supply of leaves, fruits, roots, tubers and barks. By and large, these products are sustained to a close market economy of the tribals, where collection, value addition and disposal are carried out at the local level. These products are mostly sold in raw form with a little value

addition through sun drying or no value addition at the primary collectors' level. Marketing linkage for these products is available at the village level in the form of *badla deeds*, i.e. exchange of NTFPs against essential goods such as salt, kerosene and chilli.

NTFPs constitute the major produce on which tribals are dependent. The livelihoods of people in the surrounding forest areas in general are intricately linked with the availability of NTFPs.

A recent paper by Susanta Kumar Barik attempts to serve two purposes. It sets out the contribution of a broad range of NTFPs, especially mahua, tamarind and hill brooms, and also to what degree they contribute to the sustenance on the tribal livelihoods.

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Institutional and socio-economic factors and enabling policies for NTFP-based development in northeastern India

The purpose of a recent paper by Madhav Kharki on NTFP enabling policies in northeastern India was to raise some basic issues and postulate a few ideas in the context of exploring and defining new approaches to development planning and project implementation in northeastern India. It is based on the premise that development of a pristine, biodiversity rich and culturally sensitive region such as the northeast is a serious and delicate affair. This region, which has so far failed to institute a system of sustainable management of its vast natural resources for the welfare of its people, lags far behind on the development ladder in comparison with other Indian states and needs fast-paced development efforts. However, appropriate development of the northeastern region, aimed at sustainable improvements in the quality of life of the local people, may need a

different approach, one which is integrated and holistic on multiple fronts such as: internalization of environmental considerations in development planning, improving knowledge of and information on the realizable potential of the region's natural resources, clear understanding of the suitable approach and concrete operationalization of community-based planning and a decision-making framework. The sustainable production and conservation of forest products, especially NTFPs, are influenced by a number of factors, largely socio-economic and institutional in nature. Unsustainable harvesting of the plant materials from the wild by collectors, mostly for sale in outside markets, and people's lack of awareness about the real value of the resources, are two important causes of overharvesting.

The paper is organized in five parts. Part one describes the dilemma faced by northeastern states between development goals and environment imperatives. Part two talks about the forestry sector being the lead sector and the comparative advantage enjoyed by NTFPs for basing the region's development. Part three argues for an incentive-based management approach for pushing individuals, groups, clans and local self-government units into managing NTFPs to generate maximum benefits. Part four lays emphasis on developing an enabling institutional and policy framework, specifically a state tenure system so that the real stakeholders, such as tillers or the conservers of the resource, have secure access to the resources and obtain the maximum benefit from the investment in land.

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Biodiversity-based products for poverty alleviation in Madhya Pradesh

Forests are nature's greatest gift to humankind. Since time immemorial, humans have depended upon forests for their various needs, be it food, fodder, fibres, fertilizers, medicine and construction material, etc. A recent study carried out by Peoples for Animals (PFA) discusses the "back to nature" trend and the consequent rejuvenated worldwide interest in "minor forest products". PFA argues that this is a misnomer since it indicates a secondary status to these groups of products in comparison with timber, while in reality it is just the opposite as biodiversity-based products are the basis for a multibillion-dollar industry worldwide.

Internationally these are better referred to as "non-wood forest products (NWFP)" or "non-timber forest products (NTFP)" and are defined as "including all goods of biological origin, as well as services, derived from forest or any land under similar use and exclude wood in all its forms". This definition does not distinguish between the biodiversity-based product available wild in nature and the one that is cultivated. The definition of biodiversity-based products, however, has been amended: Government of Madhya Pradesh Circular No. F-26/8/97/10-3 dated 15/5/1998 defines the term "minor forest produce" as "non wood forest produce, which can be exploited without harming the forest and will not include minerals as well as forest animals or animal parts".

Generally, the term biodiversity-based product is considered to be synonymous with medicinal and aromatic plants, but in

reality the term biodiversity-based product includes a wide array of products from the plant and animal kingdoms and having varied uses. According to one classification, biodiversity-based produce covers nine broad and 17 subcategories of products. The nine broad categories comprise: edible plant and plant parts, fatty oils (edible and non edible), gums, resins, oleoresins, seed gums, etc., medicinal plants, tans and dyes, fibre and flosses including grasses, bamboos and canes, petroleum substitutes, and miscellaneous biodiversity-based products (products of animal and plant origin, floral and decorative crafts, etc.).

The above classification, however, excludes ecotourism, which has recently caught the imagination of planners and tourists alike and is likely to emerge as an important forest-dependent commercial activity in the service sector. (Source: Extracted from the executive summary of the research study, *Biodiversity based products for poverty alleviation in Madhya Pradesh.*)

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JORDAN

Jordan women's cooperative protects Ajloun forest and changes lives

The women's cooperative of Jabal Al Akhdar and Khshaibeh, two villages in northern Jordan, is taking a pioneering path leading to bigger roles in decision-making, new income-earning opportunities and more protection for the area's endangered Ajloun forest.

A US\$31 000 grant from the UNDP Global Environmental Facility Small Grants Programme (SGP) has helped the 140 members of the cooperative improve their livelihoods and communities while protecting the environment.

Since some villages still do not allow women to work or participate in income-generating activities "our cooperative represents a step forward, not only supporting women as economic participants, but also empowering them to be active decision-makers in the community and at home," said Jehad Amarat, head of the cooperative in Jabal Al Akhdar.

The cooperative produces environmental education materials and has created a pool of trainers on forest management and environmental issues. This helps create awareness among schoolchildren, parents and teachers of the importance of preserving the environment. Members also construct cisterns, used with drip irrigation systems, and carry out land reclamation activities.

"I got a loan of US\$280 from the cooperative to finance planting trees and thyme seedlings and to buy pipes for irrigation and water tanks," said one participant. After paying back the loan, she got a second one to raise turkeys, chickens and rabbits, and also received training, focusing on irrigation and thyme cultivation. "Many women came to me requesting information," she said. "I told them what I'd learned, and nearly ten have started their own projects." Last year she harvested 110 kg of thyme and sold some to neighbours. They dried and packed it and sold it in the market.

The Ministry of Agriculture, recognizing the cooperative's achievements, has allocated it land for a permanent office and authorized the group to use a tenth of a hectare in the national forest reserve for tree conservation and environmentally sound income-generating activities, including beekeeping and harvesting wild sumac, used as a spice.

The national SGP coordinator in Jordan reported that in three years, through activities financed by SGP, almost half of



the people in the villages have increased their income and around 80 percent have reliable access to water at home. The initiative also cooperates with a local watershed management project, which provided five specialists who worked closely with the local people. (Source: *Newsfront*, UNDP, 31 January 2002.)



Fundación Espavé

KENYA

There's more to natural forests than just timber

The economic value of indigenous forest resources has often been defined in terms of timber and wood-based products. While timber is the predominant commercial product from forests, increased attention is now turning to the role of non-timber forest products. These products include food, medicinal plants, fodder, fuelwood and charcoal. Others are soil, sand, mushrooms, game meat and honey.

Although these products are not reflected in the national statistics on forest products, they are particularly important to forest-dwellers and communities living adjacent to forests. In Kenya, about 2.9 million people live within 5 km of an indigenous forest. Of these, 70 000 households are adjacent to dry-zone forests. The number is much higher when tree utilization in the arid and semi-arid zones is considered. Indigenous forests also produce other benefits which are difficult to measure, including biological

diversity, water, climate amelioration and tourist attractions. Apart from subsistence, there is growing evidence of commercialization of products such as honey and herbal medicines.

Forest products form a significant part of the household economy in many areas. It is estimated that the average forest-adjacent household earns KSh 9 020, KSh 7 650 and KSh 2 270 yearly from forest use in Kakamega, Arabuko-Sokoke and Mau, respectively. The corresponding value for the forest-dwelling Ogieks is KSh 17 300. [US\$1 = KSh 79.6, November 2001.]

Forest-harvested foods may constitute a regular and integrated part of a household's diet. The fruit of the "sausage" tree, *Kigelia abyssinica*, is commonly used by communities around Mt Kenya to make the famous muratina brew and coconut palms are the source of mnazi at the coast.

On the other hand, wild animals are the source of meat, hides and skins. The Mijikenda of Arabuko-Sokoke regularly hunt up to 50 species of forest birds and animals.

Surveys done in the 1990s by the Kenya Indigenous Forest Conservation project established that the monetary values for the major forest products – fibres, grazing, honey, hunting and others – amounted to KSh 149.7 million, KSh 322.3 million, KSh 139.2 million, KSh 172.2 million and KSh 68.9 million, respectively. On a national scale, these conclusions implied a total annual value of KSh 850 million.

The oils and resins industry is considered to have good commercial potential. *Acacia senegal*, which is found in arid areas, produces gum arabic, a valuable additive in beer, confectionery and pharmaceuticals. A resin of commercial value is oleoresin, which is obtained from *Pinus* species.

Rosin Kenya Limited produces oleoresin and is the sole supplier to the pulp and the paper industry in Kenya. Despite a ban on its harvesting, aloe extract is illegally obtained and used in the pharmaceutical and cosmetic industries.

All indigenous forests in Kenya are threatened because unsustainable commercial harvesting has resulted in widespread destruction. This is the case with *Prunus africana*, which is in high demand for export, mainly to the United States. Extracts from the bark are used clinically for the treatment of prostate ailments. The result is that the species is now severely depleted and in urgent need of conservation measures.

In spite of a government ban, *Aloe* species have also been overexploited for their leaf extract, which is used widely in the treatment of human and livestock ailments, and some are on the verge of extinction.

Hunting is now on the wane in some regions largely because of declining animal populations.

Owing to limited indigenous forest areas in Kenya, the focus is now shifting to the pros and cons of exploiting these resources in relation to crucial questions related to the ecology of non-timber forest products. These questions would define the ecological bottom-line of non-timber forest resource exploitation, and it would be unwise to continue ignoring them.

Valuable as they are, it would only be prudent to extract non-timber resources in a sustainable manner. (Source: *Daily Nation*, 29 November 2001.)

Indigenous Food Plants Programme

With its extensive galleries, exhibits library, education and research resources, including ethnographic, botanical, zoological and archaeological collections, the National Museums of Kenya (NMK) is well-positioned to act on its mission to "collect, document and preserve, to study and present our past and present cultural and natural heritage and to enhance knowledge, appreciation, respect, management and use of these resources for the benefit of Kenya and the world". In all its activities it supports the biological and cultural diversity of eastern Africa, through research, conservation, information documentation and dissemination, and education activities.

Based within the NMK, the East African Herbarium holds the largest



botanical collection in tropical Africa comprising more than 700 000 plant specimens, used for regional studies of plant taxonomy and related studies such as plant distribution (e.g. Forest Coastal Survey) and plant use (e.g. Indigenous Food Plants Programme).

Many traditional plant foods are characteristically energy-rich and play a crucial nutritional role during hunger periods. They may be equally important during periods when people have less time for food preparation, such as during peak agricultural seasons, or in arid regions where seasonal food-supply fluctuations are particularly acute. *Commelina* spp., for example, is strategically available at the beginning of the rainy season before other species can be harvested ...

... Many traditional food plants grow wild. Therefore, where they are accessible, they can be collected freely and are thus available to everyone, including the poor. But these traditional vegetables may also conveniently be grown within the homestead in kitchen or home gardens ...

... All wild species treated in this book are occasionally consciously protected by the communities in areas where they occur and therefore are often spared when vegetation is being cleared. A few may also be managed in their natural habitat, while in other species seeds, saplings, cuttings or other parts of the plant are collected for propagation in fields or home gardens.

Patrick Maundu, Grace Ngugi and Christine Kabuye worked for many years on the Indigenous Food Plants Programme, which documented many of the edible plant species of Kenya, especially ones that are gathered in the "wild". One result is the fact-filled volume *Traditional food plants of Kenya*, published by the National Museums of Kenya in 1999.

(Source: *People and Plants Handbook*, issue 7 [September 2001].)

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LAO PEOPLE'S DEMOCRATIC REPUBLIC

Non-timber forest products boost rural incomes

Non-timber forest products have the potential to contribute substantially to the national economy, especially if they are used in a sustainable way. People throughout the country earn about US\$5 per year selling products collected from natural forests. This is the official figure since the unofficial one is not known.

It is popularly recognized that rural people, who comprise about 80 percent of the national population, rely on the biodiversity of local forests. Merchants make a profitable trade purchasing products from rural people with negotiable prices. Most people collect products from the forest without thinking about their protection. An important part of sustaining natural resources is educating people to know when to ease the exploitation of precious materials. Many people also know very little about the tremendous potential of forest materials and NTFPs are being threatened owing to careless harvesting methods and an increasing population.

The government, therefore, established the Non-timber Forest Products (NTFP)

Project to help rural people discover sustainable and beneficial ways to develop the resources that form a part of their traditional lifestyles. This latest initiative is being sponsored by the Netherlands Government and executed by the Lao Government.

The World Conservation Union (IUCN) has implemented a pilot project in Oudomsay, Champassak and Saravan provinces, aimed at creating examples of the efficient use of NTFPs in order to provide a sustainable future for the country and its natural resources. The project found there are more NTFPs in the north than in any other part of the country. Most of the products, such as bitter bamboo shoots, benzoin, toud tien and cardamom are exported to China.

In Champassak, the project concentrated on protecting and using NTFPs. The project has successfully encouraged local people to grow eaglewood, a fragrant tree used in medicine and perfume production. More than 30 ha of eaglewood have been planted in Champassak; other parts of the country are also growing it in an enthusiastic manner. Project officials believe that in the next ten years people who grow the wood will be very wealthy owing to the high price that one litre of oil distilled from eaglewood brings. The project has focused on utilizing NTFPs from national conservation areas in Saravan province, in which 50 families earn their living.

Besides conservation activities, the project is also involved in trading by organizing meetings to create a product understanding among the local merchants and producers in order to prepare these businesses for entry into the world market. Demand for cardamom, benzoin, eaglewood and bong bark is high in the world market.

The project will explore the problems, needs and opportunities related to developing forest resources, in pilot projects carried out all over the Lao People's Democratic Republic during the past six years. The project will facilitate discussions into the future of Lao natural resources, and forest products in



particular. According to the Director of the NTFP project, the lessons gained from these pilot projects will enhance the ability of all provinces, at the district level, to develop, sustain and benefit from Lao forest resources. (Source: *Vientiane Times*, 5 April 2001.)



Forest for when the rice runs out

To the people living in the Lao uplands being poor means using up all their rice and having no cash or cattle they can sell to buy more rice. When that happens they turn to the forest. They hunt, fish and harvest wild cardamom, bamboo shoots and vegetables, as well as resins, rattan canes and other products. They consume some of these directly. Others they sell to buy rice. In many remote upland villages these products provide 40 to 60 percent of household incomes. For the poorest families the percentage is often much higher. Forest products have traditionally been available when people need them the most.

For many of these people life is getting harder. Owing to population growth, government policies and outsiders encroaching on their forest many families now have less land where they can practice shifting cultivation. Overharvesting has depleted many forest products.

John Raintree and Viloune Soybara recently wrote a report on the "Human ecology and rural livelihoods of Laos". They argue that while the Lao Government says all the right things about the problems, it has yet to implement effective policies to deal with them. The Lao Land Allocation programme, which regulates where farmers can practise shifting cultivation,

needs to be more flexible and participatory and focus more on land-use planning, rather than on allocating specific plots to farmers. The government's community forestry policies should focus more on the secondary and degraded forests on which poor people depend. The government should also ensure that policies concerning NTFPs do not lead to greater overharvesting of those resources or increase the competition between poor people and powerful interest groups.

Without ongoing access to forest resources, poor people in the Lao uplands will go hungry. When they run out

of rice they go to the forest. When they run out of forest, where will they go?

To request a free electronic copy of the paper or to send comments or queries to the author, please contact John Raintree at: johnraintree@hotmail.com

A useful new report, *Lao PDR, Production Forest Policy*, prepared by the World Bank, SIDA and the Lao and Finnish Governments, can be found at the World Bank Web site (www.worldbank.org/html/extdr/regions.htm). (Source: David Kaimowitz, Polex Listserve [d.kaimowitz@cgiar.org].)

LEBANON

There's more to natural forests than just timber

The following primary trees found in Lebanon have reported or suspected medicinal properties.

Species	Habitat	Medicinal uses
<i>Alianthis altissima</i>	West mountains of Mount Lebanon between 0 and 2 000 m altitude; in Bekaa, South Riyyak and in southern Lebanon	Powdered bark used to treat intestinal tapeworms and for dysentery and other stomach trouble
<i>Ceratonia siliqua</i>	Coastal areas and on the inferior slopes of coastal mountains, between 0 and 1 000 m altitude	The pulp has antidiarrhoea properties, the gum serves as a suspending agent, absorbent demulcent, lubricant
<i>Clematis vitalba</i>	Localized in the northern part of the country, between 0 and 1 000 m altitude	External usage against varicose ulcers
<i>Cupressus sempervirens</i>	West and east mountains of Mount Lebanon, between 300 and 2 000 m altitude	Mostly used to treat blood circulation disorders
<i>Ficus carica</i>	Spontaneous	Laxative
<i>Fraxinus ornus</i>	Between 0 and 2 000 m altitude	The extracted mannitol is used as an osmotic diuretic and as an excipient
<i>Juglans regia</i>	West mountains of Mount Lebanon, between 300 and 2 000 m altitude; in Bekaa, South of Zahleh, towards Baalbek and in Hermon	Leaves are astringent eupeptic with a hypoglycaemia action. The extracted juglone is antiseptic and keratinizing
<i>Juniperus sp.</i>	Between 1 000 and 2 800 m altitude	Diuretic and eupeptic
<i>Laurus nobilis</i>	Coastal areas, between 0 and 2 000 m, and southern Lebanon	External usage, stimulant
<i>Melia azedarach</i>	Coastal areas and mountains, up to 1 000 m altitude	Anthelmintic remedy for intestinal worms and parasitic skin diseases
<i>Myrtus communis</i>	West mountains of Mount Lebanon, between 0 and 1 500 m	Mostly antiseptic, for pectoral (respiratory) infections
<i>Quercus infectoria</i>	West mountains of Mount Lebanon, up to 1 600 m altitude	Astringent for external and internal usage
<i>Rhamnus cathartica</i>	West mountains of Mount Lebanon, between 1 400 and 2 000 m altitude	Laxative and purgative
<i>Ulmis minor</i>	Subspontaneous	Tonic, astringent



Not all of these plants are accepted as official medicinal plants in the pharmacopoeias and some reflect the traditional usage. Nevertheless, there is a growing market in the Western world for the use of natural medicines in preference to synthetic pharmaceuticals. International pharmaceutical companies are ready to spend millions of dollars for clinical trials and for the development of new and naturally based drugs.

The estimated market value of medicinal and aromatic plants produced by forests in Lebanon is US\$18.6 million based on 1994 figures. The varied Lebanon climate had led to a rich abundance of many wild plant species, including medicinal trees. However, only recently has a study on the possible uses and potential of those plants been undertaken. An agreement has recently been signed between Earth University in Costa Rica and the Faculty of Agriculture and Food Sciences of the American University of Beirut, which aims at exploring the efficacy of some endogenous medicinal plant species and the commercial development of new drugs based on these species. (Source: Extracted from the report of the follow-up meeting for the development and coordination of regional activities on non-wood forest products in the Near East.)

MALAYSIA

Forest tribes plead for their rights

The controversy over the destruction of rain forests is a real and immediate problem for the indigenous tribal people of Sarawak State of Malaysia, according to one of the tribe's representatives. Two tribal members were in Japan in October 2001 to talk about the continued destruction of the world's oldest rain forest.

One of them, Pedapaan, remembers the days when his nomadic Penan tribe, natives of Borneo and believed to be the last hunter-gatherers on earth, wandered the forest in bands and hunted for food. They built light, thatched shelters of bamboo or softwood, hunted animals and

gathered sago palm, from which they pounded out a starchy paste. Pedapaan said that they did not have to bring anything into the forest because everything that was needed was there, the pitcher plant became pots and pans for cooking, and if they became ill, they knew which plants would cure disease or treat injuries. In addition, they did not kill more animals than were needed for food.

That life and the orderly rule of the nomads are gone forever. One day in the mid-1980s, Pedapaan and his tribe's people had their first encounter with chainsaws, bulldozers and logging company men. The logging company then showed the Penans a map and told them that the forest did not belong to the Penans, but to the logging company. Their traditional culture and livelihood were suddenly forced into a new economy, which was unable to embrace their desires and rights.

The state government offered indigenous people longhouses to settle in and farmland to cultivate. But Pedapaan claims that agriculture had never been part of their tradition and that the longhouses were uncomfortable. Logging caused river contamination and fish became scarce. Poisoned water led to a rise in the deaths of children. The loud noise of chainsaws and bulldozers scared away the animals they hunted. In 1987, Pedapaan and his friends blockaded the road in an attempt to stop loggers from entering the forest.

He and his wife were later arrested, as were 103 others on different occasions, for protesting against logging. Pedapaan's trial is ongoing. Arrests deprive the indigenous people of much-needed work, and payments to lawyers are more than they can afford. According to an NGO, 2.8 million hectares of forest – more than five times the entire area of Tokyo – were destroyed in Malaysia. This area included most of the forest where the Penans lived. Japan was the largest importer of Malaysian timber in 1999, consuming nearly a third of the timber exported from that country.

"What we want now is for the government to recognize our right to

land," Pedapaan said. "Big companies are logging even young trees these days and it is impossible for us to go back to our traditional way of life."

An overlooked facet of the Penans is their wide knowledge of medicinal plants. According to Wade Davis, who has studied 20 tribes of the Amazon and South America, the knowledge of the forest by the Penans surpasses all of them. According to Pedapaan, there has been no request from the government for his people to share their knowledge, which will eventually be lost when the plants disappear from the forest, making it impossible for the knowledge to be passed on to young Penans. (Source: Daily Yomiuri, 12 December 2001 in RECOFTC e-letter 2001.16.)



MOROCCO

An argan oil cooperative is changing women's lives in Morocco

A cooperative (of 50 women) run exclusively by women in Tamanar, in the Essaouira region of Morocco, has integrated itself into the economy by capitalizing on a piece of ancestral knowledge.

The key is the argan or Moroccan ironwood, a long-lived tree that grows nowhere but in Morocco. Today it is threatened: in less than a century, more than a third of the argan forest has disappeared. Yet, with 20 million trees covering 800 000 ha, it is the second most important forest species in Morocco and, although neglected, is a very valuable resource. The argan holds great promise as an oil-producer and constitutes a veritable "green curtain" against the



relentless onslaught of the desert. Above all, it represents a source of income for people on the margins of society who have few other means of livelihood: in fact, the forest can provide subsistence for as many as 3 million people.

At the heart of the struggle to preserve this tree, on which so many women condemned to poverty have pinned their hopes, stands a researcher from the Faculty of Sciences at Rabat, Zoubida Charrouf and a research project supported by the International Development Research Centre (IDRC). This project has two objectives: to preserve the argan forest by finding a sustainable economic use for its products, and to improve the social and economic status of rural women. Towards this end, the British Embassy has helped purchase equipment for the cooperative.

Traditional knowledge in the form of a simple gesture repeated thousands of times is key to the project's success. Since time immemorial, the women who live in arid regions – particularly in southwestern Morocco – have depended on this almost mythical tree. Its wood is used as fuel, its leaves and seeds as feed for goats. The tree has medicinal properties and its oil both nourishes and beautifies. Indeed, argan oil is reputed for its almost magical powers, but extracting it is difficult and time-consuming. Dr Charrouf's idea was to form a cooperative among the destitute and illiterate women who depend on the argan, help them mechanize the process and sell their output so they can earn a decent living. From this idea was born the argan oil cooperative. Today it employs nearly 50 women on a full-time basis and another 100 part-time, and has the distinction of being the first female-run argan oil cooperative in Morocco.

Life for women in Tamanar has changed, slowly but surely. The argan and its products are sources of hope, for women, for the region, and for the struggle against desertification since cooperative members are also helping to replant the argan forest: each has committed herself to planting ten trees a year. Local tourism has also received a

boost, and close to 100 people come every day to visit the cooperative.

Tamanar has become the capital of the argan industry, thanks to the mechanization of production. The Berber women no longer have to put in 20 hours of backbreaking work to extract a litre of oil. All of this success is due strictly to the efforts of women.

The Amal cooperative now has two sister organizations in the argan forest, one at Tidzi and the other at Mesti. Both have benefited from IDRC's support as well as that of other funding organizations, including the Canadian International Development Agency.

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NEPAL

Medicinal plant garden

The Nepal Eco essential Medicinal Plants Society (NEEM), an NGO based in a remote area of Nepal, is looking for funding for a small project in Nepalganj that aims to:

- establish a medicinal plant garden for future generations;
- conserve biodiversity of tropical medicinal and aromatic plants;
- establish a green park in the heart of Nepalganj city;

- establish a live germplasm bank.

Nepalganj is famous for its NTFP trade. Nearly 60 percent of the whole NTFP trade in Nepal is carried out here. This district was previously known for its dense forest, but deforestation has caused the depletion of NTFP-producing trees and NTFP collection is now very poor in this area. The medicinal plants of the Terai are extremely important in the treatment of common ailments and people use them frequently for household remedies. The availability of such plants is becoming scarce, however, and local knowledge on using these plants is not being passed down to new generations.

An area of 3 ha is lying fallow in Nepalganj (in western Nepal) and the landowners, the Cremation Ground Management Committee, are eager to develop it as a medicinal plant garden. There are many sacred plants that are necessary for ritual work in the Hindu culture, but as a result of deforestation such plants are now rare.

To meet this demand, the NEEM Society in coordination with the Cremation Ground Management Committee has proposed a park-cum-medicinal plant garden. It will not only work as a conservatory, but also as a germplasm bank and an environment purifier. The medicinal plant garden will restore traditional knowledge of healing and also the Hindu rituals which have been abandoned owing to the scarcity of the necessary plant materials.

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Helping poor communities in Nepal benefit from tourism

Poor communities near some of Nepal's prime tourist destinations stand to reap greater economic benefits with help from an expanding programme. The initiative helps to reorient tourism policies to help rural communities where lower castes and ethnic minorities face poverty and discrimination, and aims to develop local strategies to attract tourists to villages in ways that are in harmony with local cultures and environments.

The programme began in 2001 in three popular tourist destinations with great potential for nearby communities: Dolpa, Lumbini and Chitwan. Support from the United Kingdom Department for International Development (DFID) will enable the inclusion of three more communities near tourist destinations in mountainous districts: Sagarmatha, the Nepali name for Mount Everest, is home to a national park near the world's highest peak; Kanchenjunga, in the east, and Langtang, near Kathmandu, are also popular tourist areas.

The Ministry of Culture, Tourism and Civil Aviation, working with UNDP, plays a key role in implementing the project, in partnership with the Ministry of Finance. DFID is providing US\$4.1 million for the new phase, building on more than US\$1 million in support from the Netherlands Development Organization (SNV) for the first phase. (Source: *Newsfront*, UNDP, 17 January 2002.)

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NTFPs and poverty alleviation in Nepal

Poverty alleviation has found its place time and again as the goal of national plans and policies with very little success on the ground. The nature of poverty is diverse, as are its causes and victims; therefore the strategies to overcome poverty should also be diverse, recognizing the difference of people and their opportunities for sustainable living standards. Nepalese people are poor because they have not acquired essential assets since they live in remote areas where the resources available have not been properly identified and utilized.

Poverty is not only an income-determined outcome and therefore increasing attention is now placed on the capability factors of poverty. It is a multidimensional phenomenon and it is always difficult to disentangle its causes and consequences. The nature and quality of governance largely determines the results of development efforts and success of poverty strategies, irrespective of the quality of design and amount of investment.

Nepal is well known for its rich and vast biodiversity. Owing to the country's diverse climatic zones, non-timber forest products (NTFP) are distributed in all bioclimatic zones ranging from tropical to alpine. Collection and marketing of NTFPs has become a way of life for poor people in hilly areas to meet their daily needs.

The Terai also has different types of NTFPs which are as yet unexploited, but which are being destroyed as people are unaware of their importance. In the past, Terai forests were valued primarily as a source of timber, but now the harvesting of timber has either been banned or restricted. Therefore, the NTFPs of the Terai have tremendous potential for generating employment for rural communities during the lean months of agriculture. If the value of these products in terms of variety, volume and socio-economy is properly assessed, it will far exceed that of wood and timber.

NTFPs have been vitally important to the forest-dwellers and rural communities and can play a very vital role in poverty alleviation in Nepal. Many forest products

that are used as staple food are also used as the sources of income, e.g. tannic acid, dyes, honey, nuts, fruit, mushrooms, oilseeds, insects, forage crops, medicines, genetic resources, etc.

It is necessary to identify and make proper use of such resources. With simple processing they can fetch a very good price in domestic markets and replace the import of similar products from other countries. For example, palm oil is imported for the soap and detergent industry while the seeds of sal, kusum, mahuwa and other fatty oil-producing trees in Nepal are being destroyed.

There are difficulties in developing markets and systems of production, but, with some effort, NTFPs may represent a sustainable utilization of forest resources with minimal environmental impacts. Such resources may form the basis of both small- and large-scale processing industries. The utilization and management of NTFPs should, as far as possible, be delegated to the local population.

Present situation of the resources

Rural people use their spare time to collect NTFPs; therefore, the collection and quantity of NTFPs depends upon time available and not just ecological conditions. The resources are underutilized, overutilized or unutilized according to the prevailing conditions. The resources known to have a high market value are overexploited while those that are less known or whose economic value is unknown are underutilized or unutilized, even though they could provide a good income for the local people. There is no system that provides information about value, collection method, collection time, techniques and market information on these resources. Hence the less known or unknown resources are being destroyed. This is the same with the cultivation of NTFPs. The most exploited NTFPs are recommended for cultivation but information on agrotechnology, markets, harvesting and primary processing of such herbs is not easily available, and thus the collection and



production of herbs is also affected. There is an NTFP network but what it is and how it works is unknown to the lay person. There are many regulatory authorities but practically none for promotional activity.

Ban on herbs

In spite of a government ban on the raw export of certain NTFPs, some herbs are regularly collected in large quantities. It is generally considered that the herb business has been monopolized by some wholesalers, but in reality it is the trade of banned items that has been monopolized, not only in the Terai but also from its source of collection. The illegal trade of banned herbs has flourished and people related to it profit while the poor rural collectors earn a pittance. The ban results in losses of government royalties, a spurious supply of raw materials and either smuggling or destruction of resources.

Providing jobs and employment

Despite the considerable value of NTFPs, this aspect of tropical forestry has in fact been underestimated. At present, it is the only source providing income to a vast majority of the population. Synthetic substitutes have ousted many natural products from the markets. But properly utilizing NTFPs in the country could reverse the situation. The variety of NTFPs is so vast that they can generate opportunities for both rural people and industrialists.

Recommendations

- The authorities concerned should implement an information system on different aspects of NTFP utilization.
- Government interference in the transportation, processing and marketing should be minimal.
- Unnecessary taxation by Village Development Committees, the District Development Committee and other organizations should be abolished.
- A legal way to promote the cultivation of NTFPs should be made; the production of NTFPs in farms should be treated as agricultural crops.

- A marketing network to provide market information to traders, producers and collectors should be established.
- Permission for the collection of banned items should be controlled and such items should be collected sustainably by government authorities directly or indirectly.
- Products harvested and used by people in rural areas that are part of their subsistence economy should be identified and promoted.
- Products that yield a return when sold on local, national and international markets should be promoted.
- Potential value in relation to ecotourism and genetic resources should be studied and identified.

Only some NTFPs are directly used as food, but the economic prosperity to the people as a result of proper utilization of NTFPs will be directly used by the majority of people. (Source: Extracted from a contribution by Rabindra N Shukla, Nepal.)

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NIGERIA

An economic analysis of women's dependence on forest resources in the rain forest communities of southeastern Nigeria. The contribution of non-timber forest products (NTFP) to household income, employment and livelihood improvement opportunities of rural women was assessed by the participatory rural appraisal (PRA) and household questionnaire survey techniques. Analysis

of field data revealed that rural women derive more income from forest product gathering than from non-forest-related activities, with forest products accounting for 56 percent of total monthly income and non-forest-related activities accounting for 44 percent. A multiple regression analysis of these forest products indicates that *Irvingia gabonensis* (bush mango), *Elaeis guineensis* (oil palm), *Achantina marginata* (snail) and *Gnetum africanum* (afang) accounted for the highest production of rural women's total monthly income from NTFP sources with values of about N 4 464, N 3 571, N 2 602 and N 2 865, respectively. The implications are that these NTFPs should be exploited on a sustainable basis, otherwise a decline in their stock would greatly affect the socio-economic livelihood of rural women.

It is therefore recommended that sustainable forest management practices should not underestimate NTFP resources as against the present focus on timber resources. More conservation efforts should be focused on the sustainability of the NTFPs that are most significant to rural earnings, if poverty alleviation is to become an integral component of sustainable forest management programmes. (Source: *Global Journal of Pure and Applied Sciences*, 7(2): 345-350 [2001].)

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PAKISTAN

Mazri palm, a unique NWFP of Pakistan Dwarf palm (*Nanorhopes ritichiana*), locally called "mazri", is a hardy fibre plant belonging to the wide group of palms. Mazri is usually a stemless, gregarious and low-growing shrub which generally grows in low arid mountainous areas up to 1 524 m. It is the hardiest of all palm species and can tolerate temperatures



ranging from -20°C to 50°C. The shrub can produce leaves up to the age of 50 and, under favourable circumstances, develops a trunk reaching approximately 4.3 m in height. It is xerophytic in nature and propagated by means of seeds or rhizomes. The associated flora are *Acacia modesta*, *Monotheca buxifolia* and *Zizyphus nummularia* among the shrubs *sacrum*, *sanatha* (*Dodonica viscosa*) and *Rhazia stricta*.

Mazri leaves are used to make a variety of products: ropes, mats, hand fans, sandals, baskets, hats, pouches, grooms and other articles of daily use. The dried trunk and foliage are used as fuel.

The Kohat Mazri Act was introduced in 1954 to protect the mazri plantation and to legalize the trade associated with mazri and its products. The act is enforced on all types of land in Kohat and Hangu (communal, private, government) where mazri grows. Permits are issued against production annually. Harvesting is carried out from 15 October to 15 April. The royalties generated from tenders or permits are distributed, with 80 percent going to the community and 20 percent to the forest department as service charges.

According to a survey, 8 to 10 percent of the people in the Kohat forest division are engaged in home-based mazri industries, including traders, producers, retailers and importers.

Women's role

Women play an active role in mazri, manufacturing finished products. Most of the collection and harvesting is also the task of rural women. Women are involved in supplementing household income for their families, but their direct involvement in income generation can be seen in mazri items. Women belonging to low-income families make ropes, fans, baskets and mats and sell them to the licence holder traders.

Problems

Mazri palm is a source of income for many poor families in Kohat but this unique source is dwindling owing to the following reasons:

- Mazri grows on shamilat land. Afghan camps were entrenched on shamilat land and the mazri was totally uprooted to build mud houses. The remainder was also depleted for use as fuel and fodder, a practice that was rarely carried out by the local population.
- Migration from tribal areas and land levelling for agricultural land.
- Poor technology and training for producers, lack of information on marketing, high transportation costs and the low profile of women producers are also problems.
- High importance of the intermediary.

The low importance given to NWFPs at the provincial level is also a reason, since the focus is more on timber, which defuses the importance of conservation through the sustainable production of NWFPs.



Conclusion

The sustainable production of mazri resources is essential for the development of that industry, which must be viewed from the perspective of the future demand for mazri products and possible sources of supply. As the population increases, the demand for mazri can be expected to increase. On the production side, population increase, agricultural land expansion, industrialization and other development activities will lead to a further reduction of forest areas. This probably means a fall in the production of natural forest resources, including mazri. However, if large-scale mazri commercial planting is carried out at the same time, the possibility of a glut on the market cannot be ruled out. (Contributed by: Tanveer Ahmad, Pakistan.)

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PAPUA NEW GUINEA

Some aspects of the eaglewood trade in Papua New Guinea

The trade in *Gyrinops* and/or *Aquilaria* spp. (eaglewood, agarwood, or "gaharu", the Indonesian name) was probably initiated by Asian buyers in the late 1980s and early 1990s. Early buyers were Chinese Malaysians and Indonesians based in West Papua.

Two companies in the trade, Eaglewood (PNG) Ltd and A. & F. Forest Products Ltd, have been issued licences by the Papua New Guinea Forest Authority. The annual licence fee is K 1 000 [K 1 = US\$0.28, October 2001]. The legal buyers and traders often fly into collection sites in order to buy gaharu directly from local collectors.

Illegal trade (smuggling) in gaharu is estimated to be much larger than the legal trade – probably 90 percent of the trade is illegal. This is because "super-super black" grade is believed to fetch as much as K 3 000/kg in Jayapura, about three times the local buying price.

Traders include West Papuans, resource owners themselves and almost anyone who can grade gaharu very well. Mistakes in grading can prove costly. Today the trade is so profitable that it is possible that corrupt government officials are involved in the illegal trade.

Formation, collection and preparation of eaglewood in Papua New Guinea

Agarwood formation is part of a pathological process in the stem or main branches where an injury has occurred. Fungi are involved in the process, but the process itself is not yet fully understood. Damage by boring insects is often associated with the infection. It is believed that the tree is first attacked and weakened by a pathogenic fungus.



Infection by a second fungus causes the formation of agarwood, but it is unclear whether it is a product of the fungus or the tree. The fungi implicated in the formation of agarwood in *Aquilaria malaccensis* and *A. sinensis* are *Cytosphaera mangiferae* and *Melanotus flavolives*, respectively.

Field collectors locate promising gaharu pockets by looking for holes in a tree where ants or termites can be seen. They also look for oil residues on the scar when branches are removed. The standard procedure then is to cut into the wood at this point with a bush knife and estimate the thickness of the discoloured wood to ascertain if harvesting is practicable. If promising, the overburden wood is stripped away and the gaharu extracted. It is not always necessary to fell the tree, and there are opportunities for the resource to be managed sustainably.

Nevertheless, bush knives and axes are often used to cut down trees in search of gaharu. The heartwood is reasonably soft and white and the brownish to black gaharu product is easily discerned. A tree rich in high-grade gaharu can be smelt from a distance of up to 50 m. Families can be involved in harvesting, but more commonly men do this work. In some areas women are the main collectors if men are otherwise engaged in hunting for food. High-quality gaharu can be obtained from roots as small as 7 to 8 cm in diameter, and roots are sometimes excavated.

Collection is usually hard work. It can take two to three months for one person to collect 1 kg of wood in the Sepik Plains. However, in a "super black" area it can sometimes take as little as one day to collect 0.5 kg.

After harvesting the collector takes the gaharu home and using sharp small knives, pieces of broken glass or special company-issued hooked knives removes unwanted pieces of wood. Resource owners (i.e. villagers) and buyers store the gaharu product in black plastic to avoid loss of the valuable aromatic oil.



Grades of eaglewood

Gaharu is classified in various grading systems that differ according to the product being traded and the country in which the trade is taking place. One international method for grading used in the Papua New Guinea trade is based mainly on colour, in which there are five grades listed in order of priority: 1. Super-super black; 2. super black; 3. A grade; 4. B grade; and 5. C grade. Eaglewood (PNG) Ltd buys on the five-grade international system. Asian field buyers tend to buy on a simplified three-grade system: 1. A grade (super-super black); 2. B grade (super black); and 3. C grade (everything else). Rejected gaharu (also termed D grade) is collected by the tonne and stored before eventual sale as a very low-grade product. There is a tendency for buyers to "reduce" the grade at the buying point and then upgrade the material for later on-sale. This may involve the field buyer having to trim imperfections from the wood before resale in an attempt to improve the quality of the product.

Burning gaharu chips is a sure way to grade gaharu appropriately, but experienced buyers do not need to use this method. Brown chips burn with a strong flame, while black gaharu burns for a shorter time before the flame dies and smoke comes off for a long period. Burning can be used to identify *Phaleria* spp., as the smoke smells bitter and unpleasant.

Buying from field collectors

In mid-1999, agents generally paid field collectors K 150/kg for super black grade

gaharu, K 100/kg for ordinary black and K 20/kg for low grade. From August to October 2000, legal buyers in Papua New Guinea were paying K 500/kg for A grade, K 300/kg for B grade, K 150/kg for C grade and less than K 50/kg for D grade (the reject grade). More recently, A grade may fetch K 1 000 to K 1 200/kg (A. & F. Forest Products). Some licensed buyers are losing their established customers to other buyers who are prepared to pay more for the product.

In the Upper Sepik area local people live at a subsistence level and suffer from a lack of government services and trade stores for purchasing goods. Here local people have bartered gaharu for goods such as clothes, radios, soap, salt and batteries for torches used in hunting.

All buyers are aware of adulterated gaharu, which is a tactic used by collectors to increase either weight or colour. For example, some collectors may soak gaharu in black oil or water, or put samples in mud. Collectors may mix *Phaleria* chips with gaharu to confuse buyers when sorting many chips.

Issues in conservation and sustainability

The Papua New Guinea Forest Authority, through the Forest Research Institute, and CSIRO Forestry and Forest Products are working together to conserve and domesticate Papua New Guinea's indigenous forest species. Part of this project involves the development of a conservation and management strategy for eaglewood in the country. Participatory rural appraisal (PRA) will be undertaken with individuals and specific village communities in areas where eaglewood occurs naturally. The PRA will assist in ascertaining local views on the biology of eaglewood, folk varieties, usefulness and possible means of management and conservation. Land tenure issues impacting on germplasm conservation and community-level plantation development will be investigated. This survey will build on the work already undertaken by TRAFFIC Oceania and the South Pacific Program, and further collaborative research on and development of eaglewood will be undertaken.



There remain substantial gaps in the available information on eaglewood, both in Papua New Guinea and internationally. In Papua New Guinea, some of the key issues that must be addressed are listed below.

Taxonomy and inventories

- Reappraisal of the taxonomy of the various genera and species traded under the common name of eaglewood.
- Inventories to ascertain the location, area, status and condition of native stands.
- Customary ownership of stands and individual trees.
- Conservation and management
- An awareness campaign on "best practice" for the sustainable utilization and management of eaglewood.
- The possible rates of destruction of trees.
- Whether the species is rare, endangered or common.
- Prospects for domestication.
- Prospects for the management of natural stands for the conservation of biodiversity.
- Prospects for the management of natural stands for sustainable production.
- Mechanisms for listing the range of eaglewood genera and species under CITES.

Propagation and plantation management

- Seed collection, treatment and storage.
- Nursery practices.
- Establishment and management of plantations for sustainable production.

Production and economics of eaglewood

- Methods to determine quantities and qualities of agarwood in the standing tree.
- Techniques for artificial stimulation of eaglewood oil production.
- Standardized techniques for grading gaharu to assist villagers and the trade involved in marketing.
- Business plans to enable villagers to trade effectively within the industry.

- Methods for inducing the production of high-quality grades in natural and planted trees.
- Effective, efficient and less destructive collection methods.
- Trends in short-term prices.
- Possible impacts of greater supplies from plantations on long-term prices.

(Source: Extracted from *Some aspects of the eaglewood trade in Papua New Guinea*, by M. Singadan, W. Yelu, J. Beko, D. Bosimbi and D.J. Boland.)

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Sustainable management of Papua New Guinea's agarwood resource

Over the past five years, Papua New Guinea's lowland forests have been the setting for a new "gold rush" as local communities have begun searching for an aromatic wood previously unknown in the country. Already heavily exploited in the rest of the world and with eight species already considered threatened, a report by TRAFFIC Oceania and WWF South Pacific is urging for action to be taken now in what could be the world's last frontier for substantial wild stocks of agarwood.

Agarwood (also known as aloeswood, eaglewood or gaharu) has been traded since biblical times for cultural, medicinal and aromatic purposes. Agarwood-producing species are found from India eastwards to the island of New Guinea,

including all Southeast Asian countries and north to Hainan Island in southern China. In Papua New Guinea, which is the known eastern extreme of the agarwood-producing species' range, the high local prices for top-grade agarwood suggest that, if managed correctly, it could provide local communities with a viable eco-enterprise option to replace the promised benefits of industrial logging agreements.

With this potential in mind, TRAFFIC Oceania and WWF South Pacific Programme initiated research into this burgeoning harvest and trade earlier this year. Unexploited stands of agarwood still exist in Papua New Guinea. In areas where harvesting has begun, villages are still learning how to extract gaharu and manage the trees. Papua New Guinea therefore provides a unique opportunity to promote the establishment of a sustainable gaharu industry.

Ayurvedic, Tibetan and East Asian pharmacopœias value agarwood for its ability to treat a range of disorders including pleurisy, asthma, rheumatism and jaundice. Muslims, Buddhists and Hindus use agarwood incense in religious ceremonies and as a customary perfume. Agarwood essences are used to fragrance soaps and shampoos and the popularity of highly priced essential oils reinforces the value of agarwood derivatives.

Agarwood is found naturally in only a small percentage of trees in the Thymeleaceae family – with the highest-grade "product" usually harvested from certain species in the genus *Aquilaria*. However, the TRAFFIC/WWF study identified a related species, *Gyrinops ledermannii* as producing this fragrant heartwood for the first time. Like other agarwood species, only about 10 percent of mature *G. ledermannii* trees are likely to produce the fragrant resin that leads to agarwood formation in the heartwood. External signs of agarwood are not obvious, which often leads to indiscriminate felling of trees in the search for darker wood inside.

The high value of agarwood is stimulating overharvesting and illegal trade in many other parts of the world. Populations of eight species of *Aquilaria*



are already considered threatened, of which six are threatened by overexploitation.

Further research is planned for both Papua New Guinea and Irian Jaya (also known as West Papua) in Indonesia to understand better the diversity of agarwood-producing species, the harvest and trade dynamics, and to develop a strategy that balances conservation management with the potential to generate long-term income.

TRAFFIC and WWF have been discussing the ramifications of this trade with the Inter-Agency Committee comprising Papua New Guinea's National Forestry Service, Forest Research Institute, Office of Environment and Conservation and Internal Revenue Commission. Discussions so far have focused on policy interventions that will promote best-practice management of harvest and trade. On the Indonesian side of the border, TRAFFIC has begun analysing the current trade dynamics in Irian Jaya in collaboration with WWF-Indonesia's Sahul programme. (Source: Extracted from *The final frontier: towards sustainable management of Papua New Guinea's agarwood resource*, by Frank Zich and James Compton, a report of TRAFFIC Oceania in conjunction with WWF's South Pacific Programme.)

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[Please see under *Products and Markets* for more information on agarwood.]

RUSSIAN FEDERATION

Russian berries to quench EU thirst

The next time you're stuck in a supermarket in Western Europe thirsting for some mors, don't panic: Russia's ill-defined national berry drink could be right in front of you. That is because Chudo-Yagoda, or Wonder Berry, has become the first Russian product to be

given the green light by the British Retailer Consortium (BRC).

Nearly every major food retailer worldwide requires an independent certificate of quality before it will use own-label suppliers, and the so-called "technical standard" certificate of the BRC, which represents 90 percent of all British retailers, is one of the most prestigious, industry players say.

The maker of Wonder Berry, juice and dairy giant Wimm-Bill-Dann, calls getting BRC approval for one of its products – which entails a thorough inspection of production facilities and technologies – a major development in its quest to expand its exporting operations around the world. Wimm-Bill-Dann already sells small amounts of Wonder Berry in speciality stores in several countries, such as the Netherlands, Germany, Israel, Mongolia and Canada. But the new certificate will be a big bargaining chip in its current negotiations with the United Kingdom, France, Australia and the Scandinavian countries, said WBD spokesperson Yulia Belova.

Belova said that the reason her company chose mors – a sort of berry compote without the chunks – to be its first internationally certified product was simply because of its uniqueness. "After extensive marketing research we decided that mors would be the first WBD product on the international market because it has no analogue."

Wonder Berry is produced from berries collected in the Russia forests, not cultivated. A similar product is also produced in Ireland, but it is not exported. (Source: Extracted from the *Moscow Times*, 6 June 2001, reported in Taiga ntfp listserve.)



SOMALIA

Boswellia from Somalia, a source of high-quality frankincense

Frankincense is the oleo-gum-resin harvested from several different trees belonging to the genus *Boswellia*. The resin is formed in cavities within the tree bark and is released when the bark tissue is damaged. This is part of the plant's natural defence mechanism. By "tapping" the tree deliberately, people have been harvesting this resin for many centuries. There is a distinct lack of knowledge about the species in regard to their botany, taxonomy and distribution, although clarification has been attempted several times in the past. There is much variation in the species in regard to leaf shape, inflorescence and fruits, number of branches, and size and shape of the trunk. The trunks have distinct swollen bases which, it must be assumed, help in the uptake and storage of water and minerals. All these adaptations allow the trees to cope with the extreme environmental conditions under which they grow.

Two species important for their essential oils are found growing in Somalia, *Boswellia sacra* (syn. *B. carteri*) and *Boswellia frereana*. The territories where these trees grow are divided up into *xiji* (a Somali term indicating an area of land controlled by one specific family for the purpose of harvesting the resin). Traditionally, these areas belong to one family group, and are handed down through the generations.

Boswellia sacra is found in northern Somalia, Ethiopia, southern Yemen and Oman. It grows on hills, gullies and cliffs up to an altitude of 1 230 m and 200 km inland from the coast. As the trees are more abundant in the harsher, steeper, less accessible regions, they have not been exploited as much as those of *B. frereana* which grow in more accessible places. The harvest season lasts for eight months, from March to October. A tapping is made every 15 to 20 days in a cyclical harvest, which enables about ten harvests per season. This type of resin does not tend to run down the bark, and



upon ripening it becomes a transparent yellow colour. Collected resin can be either deep yellow, reddish or pale white and translucent in colour, and is known locally as *beeyo*. It is used mainly as religious incense as well as in the European flavour and fragrance industry.

Boswellia frereana is native to northern Somalia. It is found only in coastal sites, often on steep vertical slopes to a height of 750 m above sea level. This species prefers a hotter, more humid climate and requires good supplies of water. The harvest season starts in late August with a tapping made about every 25 to 35 days. This longer time lapse between tappings is due to the lower temperatures increasing the time it takes for the resin to mature.

The resin runs down the bark to form long valuable "tears", which are harvested annually at the end of the season. This resin is of superior quality owing to its lemon scent, sweet taste and pale topaz-yellow colour and is known locally as *meydi*. It is used widely as a type of chewing gum as it is considerably less bitter than *B. sacra*. On the open market it commands twice the price of *beeyo*. It is possible to find the two species growing together in areas where the upper growth limits of *B. frereana* cross the lower growth limits of *B. sacra*. The trees are not harvested until they are five to seven years old when they will be 4 to 5 m high with 15 cm diameter trunks. Traditional tapping methods are still used today, but there is now potential for increased yield by improvement of these methods, or even the introduction of chemical flow enhancers, similar to those used in rubber production. Harvesting is extremely difficult because of the dangerous and not easily accessible terrain. Tough physical demands are made on the harvesters, who work in high temperatures in regions with poor road systems. The resin is taken back to the village, where women work long hours sorting the resin according to colour, size and shape. *B. sacra* (*beeyo*) is graded by colour into red, white or mixed. *B. frereana* (*meydi*) is graded according to colour and also the size of the "tears".

Frankincense resin is a natural renewable resource that provides a living for a great number of Somalis. Somalia is the only country identified as having *B. frereana* growing naturally that produces the precious *meydi* resin. At present, an Irish development organization, Progressive Interventions, is working in Somalia with the remit of looking at ways to increase the income of local collectors.

The resins from several species of *Boswellia* are traded as frankincense with sources from many countries within the African continent as well as the Near East and South Asia. Industrial distilleries will buy resin from a mixture of species and grades. If their sorting systems are not strictly quality controlled, the distillation of mixed batches of resin will occur. Moreover, differences in distillation methods can produce oils of different qualities. They can be deterpenized by redistillation and also adulterated. This all adds to the general confusion in what is sold as frankincense oil in the general market place.

In the Plant Biology Department at the Scottish Agricultural College, research was carried out involving the distilling of authentic resin samples from Somalia, and assessing oil yield and quality by GC analyses.

It must be remembered that the resin is a naturally produced plant material, growing under uncontrolled conditions, and as such will exhibit much variation. It may be that an inexperienced trader would find it extremely difficult to differentiate between the different sources and species. This variation was also apparent in the chemical composition of the distilled oil. (*Source: Medicinal Plant Conservation*, vol. 7, 1 August 2001.)

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Boswellia carteri

SOUTH AFRICA

Medicinal plants

Almost every city and town in South Africa has some form of trade in plants for medicinal or cultural purposes, most often through informal street markets or small shops known as Amayeza stores (*amayeza* is the Xhosa word for medicine) or as Muthi shops in KwaZulu-Natal.

A survey carried out in 2000 of the trade of medicinal plants in the six largest urban centres of Eastern Cape Province has revealed some startling results. Based on 282 informants' lists of their ten most frequently traded species, no fewer than 166 plant species were recorded as regularly harvested from wild populations and sold for medicinal and cultural purposes. It is estimated that 435 tonnes of wild-harvested plant material is traded in the six city centres in Eastern Cape Province alone every year, generating an income of US\$2.43 million per annum. As lucrative as this may sound, it is shared among so many traders that the average monthly income per capita is between approximately US\$19 and \$64.

Medicinal plants are harvested regularly, with little or no control or management in communal areas and State-owned land in Eastern Cape Province. No plants are cultivated and all material is wild-harvested. Current legislation (National Forests Act 1998) allows for the harvesting of plant material for subsistence use only and this is restricted to what the harvester can carry without containers. The Department of Water Affairs and Forestry (DWAF) has adopted a policy of sustainable



harvesting by means of community-based management programmes. The "new" (post 1994) conservation legislation is excellent and allows for both community access as well as strict law enforcement where necessary. Unfortunately, there are as yet no management structures in place and the present harvesting rates are uncontrolled and far from sustainable. Provincial conservation authorities and DWAF are critically understaffed and lack the capacity to manage previously restricted areas, much less communal land. (Source: The trade in medicinal plants in the Eastern Cape Province, South Africa in *TRAFFIC Bulletin*, 19(1) [2001].)

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Sustaining Natural Resources in African Environments (SUNRAE)

SUNRAE is an acronym that aptly describes the focus of this research programme: Sustaining Natural Resources in African Environments. The programme is an initiative of the Centre for African Ecology of the University of the Witwatersrand, South Africa.

SUNRAE is permanently based at the Wits Rural Facility, a university research facility in the central lowveld of Northern Province, near Kruger National Park. This region of South Africa is characterized by dense rural populations of the former black homelands created during South Africa's apartheid past, juxtaposed with ostensibly élitist private game reserves and State conservation areas, all within a semi-arid savannah environment.

The rural populations depend heavily on communal lands for indigenous natural resources, such as fruits, edible herbs, plant parts for medicines, animals for meat, wood for fuel, and timber for

construction. Recent research conducted by SUNRAE has shown that these communities still place considerable value on cultural, social and environmental services provided by biodiversity in areas. Many communities face an acute shortage of some of these resources, and the links between poverty and environmental decline are readily apparent.

Against this backdrop, the objectives of SUNRAE are to:

- conduct applied research around the issues of sustainable utilization and management of indigenous resources in semi-arid communal woodlands;
- develop human resources capable of understanding and addressing the issues of rural development and resource conservation across the human-environment interface;
- synthesize and disseminate such information and knowledge to rural communities, decision-makers, landowners and policy-makers.

Since 1992, more than 90 journal articles, reports, proceedings and theses have been compiled by SUNRAE. This work has shed new light on many aspects of the ecology and management of communal lands. It has also raised awareness of key issues on the sustainable management of natural resources in communal lands in the semi-arid savannahs of South Africa.

SUNRAE is also a partner in community development and conservation projects such as the Endangered Wildlife Trust's Makuleke Training programme, and the Kruger to Canyons Biosphere Reserve.



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THAILAND

Alternatives to national parks

Alternatives to national parks should be considered in order to conserve both forests and people's livelihoods, academics say. Thirty-six NGOs at a recent seminar to review the Forestry Department's 40-year management of national parks agreed the parks had hurt the lives of people living in and around forests. Academics at the meeting said an appropriate model for forest conservation should allow for both public use and forest protection.

Somsak Sukwong, of the Regional Community Forestry Training Centre (RECOFTC) for Asia and the Pacific, argued that the poor in the countryside needed to live on resources from the forests, while Somkiat Pongpaiboon, of the Rajabhat Institute at Nakhon Ratchasima, said that national park management had ignored the fact that Thailand was an agricultural country. "Conservation per se, where the state removes the people and takes charge over their land, should be ended," Mr Somkiat added.

Suraphol Duangkhae, of Wildlife Fund Thailand, said the Forestry Department should retain management of national parks. Areas outside national parks should be cared for by the public to complement the department's work. He said that it was important to bear in mind that it will not be easy to keep moving people out of their land and that an alliance of people and the department will be the key to better conservation.

IUCN-World Conservation Union representative, Piyathip Eaowpanich, considered that Thailand's management of its forests was at the stricter end of conservation and that a combination of different kinds of protected areas other



than national parks would allow people to make use of forests.

The academics agreed that the proposed Community Forest Act, which is being revised by the Senate, would be one of the keys to better management. (Source: Bangkok Post, 6 January 2002, in RECOFTC e-letter 2002.2.)

TURKEY

Chestnuts in Turkey: brief introductory paper about chestnut in Turkey especially as a non-wood forest product

The chestnut is probably the most important nut crop found throughout Turkey's forests. It has been cultivated and consumed for several centuries. Sweet chestnut (*Castanea sativa* Mill.) is the only native species of the genus in Turkey and its centre of origin is believed to be eastern Turkey or Caucasus.

In Turkey, chestnut covers 29 892 ha and, according to the Forest Code, is considered to be a forest tree and is mainly found in forests. According to Forest Management Plan statistics, 87 percent of chestnuts are high forest; the rest are coppice forest. The growing stock is 6 660 722 m³ in high forest and 2 114 846 steres in coppices. Trees outside the forest are negligible.

In general, chestnut is used for its nut. But, in addition to this, its hardwood timber is used for construction materials and its flowers for apiculture – some counties are famous for their chestnut honey.

Geographical distribution

The ten main counties in which the chestnut is found are in the Black Sea region, with the exception of Izmir. But the nuts are generally produced in the Marmara and Aegean regions. It is possible to say, therefore, that the chestnuts found in the Black Sea region are natural.

Nut production

According to the statistics for the last 20 years, Turkey's annual crop yield has grown to 68 625 tonnes, an increase of 28 kg of nuts per tree.



Export

Turkey exports more than a tenth of the total amount of chestnut nuts to more than 55 countries, the main customers being Lebanon, Israel, Saudi Arabia, Jordan (from the Near East), and Italy, Greece, Germany, the United Kingdom, Austria and France (from Europe). For the ten years from 1990 to 1999, in exchange for the 62.641 tonnes of chestnuts exported, Turkey earned US\$67 million, which means that Turkey's annual export is 6 000 tonnes worth US\$6.7 million. The price of exported nuts is approximately US\$1 per kilogram without processing.

Internal consumption

According to official figures collected from Ankara, internal chestnut consumption is estimated to be 47 387 tonnes annually. The nut is consumed in Turkey in the different ways shown in the table below:

Chestnut product	Price (US\$/kg)
Raw product (sold in markets)	1.5 (average)
Roasted (sold on streets by street sellers)	6
Candied	20

Total Income from chestnuts

The total annual income from chestnuts, including export, internal consumption and unrecorded consumption, can be calculated as follows:

Export. US\$6 679 623 equivalent to 6 264 tonnes (average for last ten years).

Internal consumption. US\$94 774 000 equivalent to 47 387 tonnes product (the average price of the nut has been

accepted at a retail price of US\$2/kg). *Unrecorded internal consumption.* The export and official internal consumption amount to 53 651 tonnes, but nut production is 68 652 tonnes annually. Therefore, the difference between the two figures is unrecorded consumption. If we assume that these products were consumed at a minimum US\$1/kg, US\$14 973 000 equivalent to 14.973 tonnes have been earned.

As a consequence, the total income of chestnut nuts can be calculated:

Export	US\$6 679 623
Internal consumption	US\$94 774 000
Unrecorded internal consumption	US\$14 973 000
Total	US\$116 426 623

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UGANDA

Uganda Forestry Association

The overall objective of the Uganda Forestry Association (UFA) is "to ensure a sustainable forestry sector that is accorded its rightful role in contributing to the socio-economic development through production of indispensable goods and services". This will be achieved through the following specific objectives:

- to create and maintain proper public understanding of the value and the vital role forests play in our daily lives;
- to serve as an advocacy channel for forestry issues and create a forum for exchange of ideas among foresters and other interested parties throughout Uganda;
- to promote the effective protection, production and utilization of Uganda's forest resources and in accordance with relevant international conventions/agreements;
- to work as far as possible for the standardization of information



collection, storage, retrieval, dissemination and utilization system for the forestry sector.

In order to achieve these objectives, UFA has developed a three-year, five-component project proposal "Improving the value of forests and trees In Uganda" to carry out the following activities, including non-wood forest products:

- information and database establishment and dissemination including advocacy;
- research and training;
- promoting quality products;
- promoting tree growing in Uganda;
- providing consultancy services.

UFA would like to collaborate with other international agencies wishing to work in the developing world.

For more information, please contact:
The Administrator, Uganda Forestry Association, PO Box 27667, Kampala, Uganda.
Tel./fax: +256 41 340442;
e-mail c/o: foridir@infocom.co.ug

Branching Out

An electronic version of Branching Out, the Forest Sector Newsletter of Uganda, can be obtained from Gaster Kawuubye Kiyingi, Information Officer, Uganda Forest Sector Coordination Secretariat, Ministry of Water, Lands and Environment, PO Box 27314, Kampala, Uganda;
 fax: +256 (0)41 340683;
 e-mail: gasterk@Ugandaforests.org;
 gasterk@yahoo.com

UNITED KINGDOM

Forest Footprint

The World Wide Fund for Nature (WWF) has recently published the United Kingdom's *Forest Footprint*. The United Kingdom is the world's second largest importer of forest products, importing 85 percent of its needs. The Minister for the Environment has pledged to reform the government procurement of forest products to source more Forest Stewardship Council-certified products

and to promote responsible forestry on the estimated 6.4 million hectares of overseas forests needed to supply the United Kingdom market. (Source: *Taiga News*, Winter 2001.)

UNITED REPUBLIC OF TANZANIA

Preserving tradition

Forests and woodlands cover over a third of the total land area of the United Republic of Tanzania, and are the main source of fuel, timber, fruits and other foods for many rural communities. More than 50 indigenous wild fruits grow in the miombo woodlands alone, which dominate the west and south of the country. They offer valuable nutrients to rural families, but less than half the fruit is collected, leaving the rest to rot in the forest or be eaten by monkeys.

The International Centre for Research in Agroforestry (ICRAF) is working with local women's groups and the Tanzanian Women Leaders in Agriculture and Environment (TAWLAE) to increase awareness of the high nutritional value of these indigenous fruits, and enable the women to maximize their potential for income generation through the manufacture and sale of jam, wine and juice. (Source: *Global Newsletter on Underutilized Crops*, June 2001.)

VIET NAM

Social Forestry Development Project (SFDP) Song Da

The SFDP Song Da project is being financed by the Federal German Ministry for Economic Cooperation and Development, BMZ. The project, which started in 1993 and has a total implementation period of 12 years, was initiated as a watershed protection measure in the Song Da watershed. The project goal is that "the living conditions of the local population in the Song Da region are improved in accord with a stabilization of the ecology". The project purpose is that "(rural) communities in Son La and

Lai Chau provinces manage their natural resources in an ecologically, economically and socially sustainable way". The target groups are the local populations in the two provinces, which comprise a large percentage of ethnic minorities (mainly Thai and H'mong).

The project is working in five areas: a) participatory land use planning and land allocation; b) methodology for participatory village development planning; c) improved technical and organizational options; d) technical procedures for natural forest regeneration; and e) establishment of a needs-oriented extension concept.

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ZIMBABWE

Social benefits of natural woodlands and eucalyptus woodlots in Mukarakate, northeastern Zimbabwe

The social benefits of indigenous miombo woodland resources and exotic *Eucalyptus camaldulensis* woodlots were investigated in Mukarakate, northeastern Zimbabwe. The availability of woodland resources and the importance of those resources to different social classes and genders were studied by using participatory rural appraisal methods. Semi-structured interviews were used to clarify the benefits from natural woodlands and exotic plantations, as well as any management problems for eucalyptus woodlots owned by private individuals, educational institutions and woodlot cooperatives. Interviews of eucalyptus woodlot owners in two typical



villages were conducted between January 1998 and November 1999.

The availability of most woodland resources had decreased very rapidly between 1980 and 1998 and are likely to continue decreasing in the future. This has caused problems especially for the poor and women because they were the primary users of many of the non-wood forest products (NWFP) from the miombo woodlands, and these products were getting more and more difficult to find in the area. People from all social classes had established eucalyptus woodlots in the 1980s, but these woodlots were not able to provide substitutes for many of the NWFPs that had come from miombo woodlands. (Source: *Forests, Trees and Livelihoods*, 11(1): 29-45 [2001].)

For more information, please contact the author: T.M. Tyynela, Faculty of Forestry, University of Joensuu, PO Box 111, FIN-80101 Joensuu, Finland.

[Please see under *Products and Markets – Mushrooms* – for more information on Zimbabwe.]

Southern Alliance for Indigenous Resources

Through their keen and active Zimbabwean fieldworkers and awareness of local resource needs, the Southern Alliance for Indigenous Resources (SAFIRE) has established field projects which deal with people-plant interactions away from the Zambezi valley geographic focus of the better known and longer established CAMPFIRE programme. Examples are its research on ilala (*Hypphaene coriacea*) palm harvesters, baobab fibre, oil and nutraceuticals, the role of the musau tree (*Ziziphus mauritiana*) in household economies, traditional uses of, and economic opportunities from, makoni herbal tea (*Fadogia ancylantha*), and work with communities in the Chipinge area on re-establishment and agroforestry production of the medicinal tree muranga (*Warburgia salutaris*). With support from the People and Plants Initiative, SAFIRE is the national contact point for the Zimbabwe Ethnobotany Network (ZEN), which links into the African Ethnobotany Network of

the Association for the Study of the Flora of Tropical Africa (AETFAT).

SAFIRE was established in 1994 through the collaboration of several local and international NGOs. SAFIRE's mission is to facilitate the development and application of innovative approaches to diversify and improve rural livelihoods, based on the utilization, commercialization and sustainable management of natural resources. As a "plants" counterpoint to the CAMPFIRE programme, which focuses primarily on large mammals, SAFIRE draws attention to the value of woodlands to local people. Its main goals are to promote the establishment of natural resource-based enterprises, and to support the development of land use alternatives derived from these enterprises.

SAFIRE's Managing our Indigenous Tree Inheritance programme focuses on the economic development of communal areas based on sustainable and productive use of natural resources, especially from woodlands. There are four broad areas of focus: a) enterprise promotion and development; b) natural resource management at the community level; c) institutional development among traditional leadership and modern local governance structures; and d) natural resource policy development at the local and national levels. The programme is known by the acronym MITI, meaning "trees" in the local Shona language.

Since its initiation in 1997, MITI has sought to develop a range of natural plant products, identify and explore market opportunities for those products, build production and processing capacity within local communities, and develop alternative methodologies for assessing the volume and sustainable offtake levels of the plant resources that form the basis for these products.

The MITI project works with communities in five districts in eastern Zimbabwe. To date, it has identified more than 40 different enterprise opportunities based on natural products, and has facilitated the development of enterprises benefiting more than 10 000 people. At present, the project is moving towards a second phase, in which it will focus on a

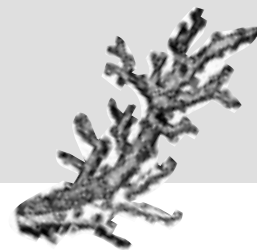
narrower range of products, while hoping to develop them all the way to export quality and production.

SAFIRE hosts several national and regional initiatives aimed at promoting natural product development and marketing. These include the Miombo Forum, which supports alternative trade and ecolabelling for products derived from miombo woodlands in five countries in southern and eastern Africa; and the Southern African Natural Products Trade Association (SANProTA), which facilitates product and market research and development for forest or veld products from Botswana, Malawi, Namibia, Zambia and Zimbabwe.

One of the projects that SAFIRE has been working on with support from the People and Plants Initiative is the reintroduction of a medicinal tree species, *Warburgia salutaris*, locally known as muranga, which is the most important traditional medicine in Zimbabwe. An economic analysis from this pilot project of *Warburgia salutaris* reintroduction, as well as of market price data from a survey of local herbal medicine markets, strongly suggests that the reintroduction of *Warburgia salutaris* in southeastern Zimbabwe has great potential to enhance conservation of an endangered species and, simultaneously, improve the livelihoods of local rural people. T.E. Veeman *et al.* (in press). Muranga returns: the economics of production of a rare medicinal plant species reintroduced in southeastern Zimbabwe. *Advances in Economics Botany.*

(Source: *People and Plants Handbook*, issue 6, May 2001.)

For more information, please contact: Mr Gus Le Breton, Director, Southern Alliance for Indigenous Resources, PO Box BE 398, Belvedere, Harare, Zimbabwe. Fax: +263 4 790470; e-mail: safire@internet.co.zw ●



DANISH ECOLABELLING CAMPAIGN FORGES AHEAD

The Danish Government's information campaign on ecolabelling, launched in 2001, has now entered its second phase, the Environmental Protection Agency (EPA) has announced. The first stage saw public recognition of the European Union "Flower" symbol and of the Nordic "Swan" label increase substantially and also resulted in rises of up to 50 percent in sales of ecolabelled products, the agency said in a statement. The campaign will now focus on increasing the range and turnover of ecolabelled goods. (Source: *Environment Daily*, 1091, 29 October 2001.)

SE CREÓ LA PRIMERA ÁREA DE CONSERVACIÓN PRIVADA



El bosque seco lambayecano de Chaparrí es, desde el pasado 27 de diciembre, la primera área natural protegida de conservación privada del Perú. Su gestión es obra exclusiva de los integrantes de la comunidad campesina de Santa Catalina de Chongoyape que aspiran a convertir a Chaparrí en un ejemplo de conservación para las comunidades del país y en un factor importante de su propio desarrollo social.

La nueva área protegida privada ha sido creada mediante la Resolución Ministerial N° 1.324-AG-2001, con la opinión favorable de la Dirección General de Áreas Naturales Protegidas del Instituto Nacional de Recursos Naturales (INRENA) y que será administrada por esta comunidad campesina luego cumplir

con los requisitos exigidos por el INRENA, en consonancia con la legislación vigente sobre áreas protegidas.

Según el expediente técnico presentado por la comunidad de Santa Catalina, Chaparrí protegerá los bosques y las especies de fauna existentes y desarrollará planes de manejo para la rehabilitación y reintroducción de especies de flora silvestre amenazadas y en peligro de extinción.

El área de conservación privada Chaparrí tiene una extensión de 34 413 hectáreas, ubicadas en el distrito de Chongoyape, provincia de Chiclayo, departamento de Lambayeque, y en los distritos de Llama y Miracosta, provincia de Chota, departamento de Cajamarca.

Las especies de flora más representativas suman más de 50 entre las que se incluyen el sapote, hualtaco, overo, algarrobo, faique, angolo, chamico, caña brava, lipe, tres especies silvestres de tomates, una variedad de frutales nativos, así como un grupo de 7 especies que aún no han sido identificadas científicamente. (Fuente: *Econews*, 10 de enero de 2002.)

GORILLA-BASED TOURISM: A REALISTIC SOURCE OF COMMUNITY INCOME IN CAMEROON?

In the southern forest belt of Cameroon a trial is under way to develop a "community-based gorilla research and tourism site". This is taking place within the context of government policy to involve local populations in the management of wildlife, and is an attempt to address the desire of a local community to develop some sort of tourism in and around their community forest. A recent case study of the villages of Koungoulou and Karagoua in Cameroon by Elias Djoh and Mark van der Wal discusses some fundamental questions related to the feasibility of the trial, such as the difficulty of working within existing legislation, the need to habituate the gorillas to the presence of

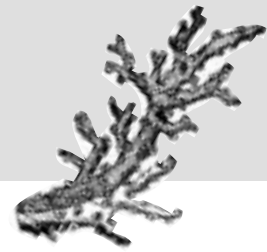
humans, and the problem of helping the community to organize such an activity effectively.

There is an ongoing debate in Cameroon concerning the sustainable management of wildlife, the involvement of local populations in natural resource management, and activities that can generate sustainable income for those populations.

In the Lomié region and throughout the humid forest belt of southern and eastern Cameroon, agriculture (especially cocoa and coffee) used to be the favoured source of income for farmers. However, with the end of State subsidies and a drastic fall in the market price of these products, local people have turned to hunting (all of which, according to current legislation, is illegal "poaching") in order to meet their needs. Although industrial logging within the "agroforestry" zone undoubtedly provides an income for the State and populations living adjacent to concessions, the impact of this income at village level is very minor.

Given this situation, the government, non-governmental organizations (NGOs) and projects have put emphasis on working with the local populations to find other activities which could generate more sustainable income to compete with hunting and logging. In this respect, local people can potentially benefit from Cameroon's forestry policy, which gives them the right to apply for and manage community forests and community hunting zones according to established norms and procedures. Although the areas concerned are not large, this is nevertheless an achievement for the populations, allowing them to take their own decisions about the use of the forest.

Two villages, Karagoua and Koungoulou, have included the development of tourism in their forest management objectives, and specifically tourism to observe gorillas in their natural habitat. This initiative is supported by a local NGO, Centre international d'appui au développement (CIAD), which, together with local populations, has initiated a gorilla habituation trial in the village forest area. In the long term, the



aim is to develop a site for tourism and scientific research where the gorillas will be protected and habituated to the presence of humans in their environment.

The authors explore the potential benefits, problems and constraints of this proposal and present their first results and impressions. They conclude that, in the case of Lomié, it is clearly possible to habituate one or several groups of gorillas, although the habituation process takes time. Locally, it is often compared to the establishment of an oil palm plantation: four years of time and energy must be invested before the first palm nuts can be harvested. Thus, it will require patience and perseverance before the gorillas are habituated and the investment begins to show returns. Given the need to diversify local sources of income, the authors still firmly believe that it is worth attempting despite the problems encountered. The biggest question is whether the populations concerned are capable of organizing themselves to manage this community activity. Once they are well organized, it will represent a more sustainable source of income, in contrast to the sporadic income from the sales of standing volume. There are, however, several other questions which remain unanswered: how will this money (the income from a community activity conducted by several villages) be managed? Will the activity have a positive impact on the conservation of gorillas as a species in Cameroon? Or will the gorillas still be hunted in the part of the forest that is not involved in this habituation trial? (Source: Rural Development Forestry Network paper 25e, July 2001.)

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KUMROSE COMMUNITY FOREST, NEPAL

Fifteen years ago, Nepal's Kumrose Community Forest was 25 ha of barren land. Once part of the vast Chitwan jungle, the forests had been cleared by loggers and a government resettlement campaign. Then, in the late 1980s, the community got together to plant trees and recreate the once-lush jungles of the area. Today the Kumrose Community Forest is a 1 050 ha patch of jungle that generates NRs 1.5 million annually from tourists visiting the area for elephant rides and nature walks.

Kumrose does not rival the nearby Royal Chitwan National Park, but it has shown that human intervention can bring back the nature that human intervention destroyed – and it can work for the benefit of nearby villages and raise their standard of living. Park and people need not be in conflict.

Hira Bahadur Gurung, who chairs the forest conservation group, said that in the past the floods from the Rapti river used to wreak havoc in Kumrose and seven other villages. Tree plantations were started on the barren banks of the river to prevent floods; now there are no floods, the trees hold the soil together and the farms are more fertile.

Today, nearly 1 200 households in the vicinity benefit directly from the Kumrose forest, which helps meet their fuelwood, timber, fodder and thatch needs. With the restoration of the forests, wildlife from the Royal Chitwan National Park

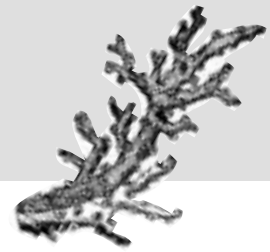
has also started sneaking into the Kumrose forest. The Asiatic one-horned rhinoceros and the Bengal tiger both roam the forest, and this brings in tourists keen to ride on elephant back to catch a glimpse of the rare beasts, or go on jungle walks or even camp out.

The Kumrose Community Forest is a remarkable success story of how community forestry and conservation can go together. The village collects fees from the rides and ploughs the money directly into further conservation work. Biogas plants have been installed in many households as an alternative source of energy and villagers are encouraged to use less fuelwood from the forest.

Curious visitors to the community forest have also encouraged local micro-entrepreneurship, and the success of preservation efforts has encouraged people to start community enterprises. The users' group of the Kumrose Community Forest, together with the Village Development Committee, recently constructed a machan (viewing tower) that can accommodate eight visitors at a time. The machan offers visitors a chance to experience jungle life at night and, in the daytime, the opportunity to observe animals and birds in a peaceful setting.

With the growth of the forest and resident wildlife in Kumrose, there has been a surge in the community's awareness of conservation. Villagers have realized they are the immediate beneficiaries of the revenue generated by visiting tourists. There is some nervousness about the wild animals their forest now attracts, especially since crops are damaged by rhinos and wild elephants and livestock killed by leopards. Initially, when faced with the reforestation plans, not everyone was so sanguine and local people were afraid that wild animals from the nearby Royal Chitwan National Park would make this patch of forest their home and cause more trouble to local farmers.

Now there is none of the hostility in Kumrose towards wildlife often seen in other conservation areas of Nepal.

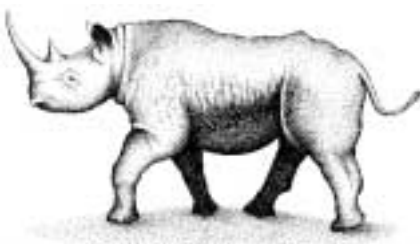


Losses from wild animals are tolerated because of the benefits they bring.

The Kumrose Community Forest started 15 years ago as a Panchayat-protected forest, but in 1995 it was registered as a community forest and has been functioning according to the government's forestry regulations, which hand over decision-making on protection and management to the forest user groups set up by the village development committees.

The Kumrose Community Forest is shortly completing its terms under the jurisdiction of the district forest authority, and is in the process of being registered as a buffer zone of the Royal Chitwan National Park. Once it is declared a buffer, it will benefit from the park's conservation efforts, and in turn contribute grassroots support for the park.

This is a vital part of the modern approach to conservation, and will be the strategy behind the Terai Arc Landscape (TAL), a new conservation approach being designed by the World Wide Fund for Nature (WWF) to join conservation efforts in the Nepal Terai and India. TAL aims to connect community forests, protected forests, 11 protected areas and national parks in Nepal and India to facilitate migration of large mammals such as tigers, rhinos and Asian elephants. This would ensure their natural roaming patterns along jungle corridors and ensure their long-term survival. (Source: *Nepali Times*, 66, 2-8 November 2001; www.nepalnews.com; np/ntimes/issue66/villagevoice.htm)



NATURE RESERVE IN VIET NAM: NA HANG DAM THREATENS FORESTS, PEOPLE AND WILDLIFE

The Tonkin snub-nosed monkey is endemic to northern Viet Nam and is one of the world's most endangered mammal species. Before a group was spotted in Na Hang district in 1992, it was considered extinct. Today, 260 of the monkeys are known to be living in northern Viet Nam. Half of the population lives in the Na Hang Nature Reserve, which was created in 1994 specifically to protect the snub-nosed monkey.

The Na Hang Nature Reserve is in an area of dramatic mountainous limestone scenery. The forest within the nature reserve is extraordinarily rich in biodiversity. As well as providing a habitat for the snub-nosed monkey, it is home to the François' leaf monkey, lesser slow loris, stump-tailed macaque, pig-tailed macaque, dhole, Owston's palm civet, clouded leopard, Asiatic black bear, serow, a series of endangered birds and butterflies, an endangered tortoise and 13 species of threatened plants. Four endangered fish species live in the Gam river, which forms the western boundary of the nature reserve.

Scott Wilson Asia Pacific, a consulting company, is leading a consortium carrying out a Protected Area Resource Conservation (PARC) project in Na Hang with funding from the Global Environment Facility. In addition, Allwetter Zoo and the Zoological Society for the Conservation of Species and Populations (both of Germany) are running the Tonkin Snub-nosed Monkey Conservation Project.

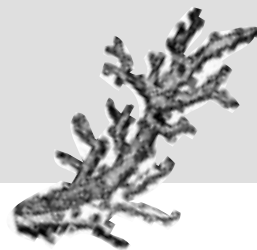
Unfortunately, the same Vietnamese Government that set up the Na Hang Nature Reserve now seems determined to go ahead with plans for a US\$420 million, 300 MW hydropower dam on the Gam river. The dam would flood part of the Na Hang Nature Reserve and have devastating, long-term impacts on the forests, people and wildlife in and adjacent to the reserve.

In 1997, Electricity of Viet Nam (EVN), the state electricity utility, produced a pre-feasibility study for a dam on the Gam River. Two years later, EVN produced terms of reference for a feasibility study of the dam which was due to be completed at the end of 2001. Scott Wilson Asia Pacific wrote, in the inception report for its conservation project in Na Hang, that it proposed to "assist the Government of Viet Nam by carrying out a preliminary environmental assessment of the River gam dam". Scott Wilson's consultants completed their preliminary environmental assessment in 2000. According to Viet Nam's Electricity Master Plan Number Five, released in 2001, the Na Hang dam is planned to be commissioned in 2006. So far, the Vietnamese Government has not secured international funding for the dam.

If built, the Na Hang dam would create a reservoir stretching 30 km up the Gam river and flooding 57 km², including 220 ha of the Na Hang Nature Reserve. Forty-five villages would be flooded, and more than 11 000 people would be evicted to make way for the reservoir. Ethnic groups living in the area include Dao, Tay, Hoa and H'mong, as well as Kinh, the Vietnamese majority group. One woman, who would be evicted by the dam, told Scott Wilson's consultants, "We may be poor, but this is our home."

Before the dam is built, the reservoir area would be logged. At present there is no road access to the area. Building the dam would involve building a new road, a major construction site, traffic, construction noise, dust, pollution, explosions, and up to 10 000 workers. Construction workers will increase local demand for wildlife and other forest products. The bones, hands and feet of Tonkin snub-nosed monkeys are made into traditional medicines. With a stream of construction trucks driving in and out of the area, it would be almost impossible to stop illegal trading.

In May 1999, a group of environmental organizations, including the World Conservation Union, Allwetter Zoo and Primate Conservation Inc.,



wrote to Prime Minister Phan Van Khai and other Vietnamese officials. Their letters requested that a thorough environmental impact assessment of the proposed dam should be carried out, in accordance with Viet Nam's Law on Environment Protection and the Convention on Biodiversity (to which Viet Nam is a signatory). To date, no such study has been done. The Vietnamese Government did not reply to the letters. (Source: RECOFTC e-letter 2002.5, 28 February 2002.)



FORESTS AND CONFLICT

The writer is director-general of the Center for International Forestry Research, based in Bogor, Indonesia. He contributed this comment to the International Herald Tribune.

With much of the world's attention riveted on Afghanistan, it is easy to forget that armed conflicts are bringing death and misery to millions of people in scores of countries around the world. Since 1989 the number of civil wars has tripled.

Some are minor affairs, but others have paralysed whole nations and have the potential to spark off wider violence. If the world wants to avoid endless turmoil, it needs to understand what causes such conflicts. It is often claimed that the wars of the future will result from rapidly rising populations fighting over increasingly scarce resources, such as water and land. At present, though, what we see is that the desire to control natural resources such as timber, diamonds and petroleum lies behind many conflicts.

Take Nicaragua, which I recently visited to do research on forests. After reaching a remote region on the Atlantic coast, I

suddenly found myself surrounded by several dozen Miskito Indian guerrillas, each carrying an AK-47 assault rifle. When it became clear to them that I was there to protect the forests, not plunder them, I was allowed to go. The Miskito had taken up arms because outsiders were seeking to exploit their timber and mineral resources.

The Miskito are not alone. Many violent conflicts occur in areas of dense tropical forest, where regular and irregular armies, timber and mining companies, indigenous people and drug cartels vie for control over natural resources.

In Cambodia, both the government and the Khmer Rouge financed military campaigns by procuring and selling timber.

In eastern Congo, abundant supplies of timber and minerals have attracted a ragbag of invading forces eager to profit from the spoils of war.

Rebel forces in Angola, Liberia and Sierra Leone have prospered by exploiting diamonds and timber in regions that lie far beyond government control.

There are similar cases in Indonesia's Aceh Province, on Mindanao in the southern Philippines, in Nagaland in northeastern India, in parts of Myanmar and in other parts of the world.

There is, it seems, a standard recipe for conflict. Take a remote and inaccessible forested area inhabited by ethnic minorities with little government presence. With its natural resources, such an area is well suited to illicit activities. Outsiders surge in to exploit the potential wealth. Add automatic weapons that can easily be bought on the black market, and the profits of plunder, and you soon end up with jungle warfare between indigenous people and those they regard as invaders.

In this twenty-first century Wild West, both people and forests suffer. Take the recent horrors of Colombia.

While right-wing paramilitary forces have murdered tribal leaders who have sought to resist their territorial ambitions, the leftist Revolutionary Armed Forces of Colombia have forced Indians to join their ranks. Tens of thousands of people have been killed. Both sides have appropriated

the Indians' ancestral lands. Both have exploited natural resources and made vast profits from the cultivation and sale of cocaine.

Even now, while attention is focused on Afghanistan, we need to plan for a safer future by nipping future resource wars in the bud. Can this be done? Yes, but it will require foresight and courage from some of the poorest governments, and considerable assistance from the rich world.

Neglecting remote, forested regions and those who live there invites future conflict. It is vitally important that governments invest in these areas to provide them with social services, such as clinics, schools and running water, and build their credibility among the local people. Just as important is that governments promote law and order and guarantee forest dwellers secure property rights. Many of today's conflicts could have been averted if it had been clear a long time ago who owned what, and who had the rights to exploit timber and other resources.

In the meantime, greater efforts should be made to defuse current conflicts. Since the scramble for natural resources has sparked off many of these conflicts, it is clear that determining control of these resources must be central to any negotiations.

In addition, past experience in countries such as Guatemala and Liberia suggests that there is often an orgy of resource grabbing once a conflict ceases. Negotiations must plan not just for peace but for the prudent use of natural resources once conflict is over.

Of course, peace comes with a price. The governments in most countries scarred by conflict lack the financial resources to invest in remote, sparsely inhabited regions.

This is where the rich world can help. Better, surely, to spend modest sums on avoiding conflict today than billions on resolving conflicts in the future. The forests and the people who live there will thank us for it. (Source: David Kaimowitz, *The International Herald Tribune*, 30 November 2001.) ●



FAO

WORLD FOOD SUMMIT:
FIVE YEARS LATER

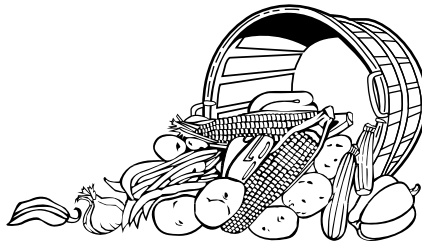
FAO will host a global meeting at its Rome headquarters from 10 to 13 June 2002 to review progress towards ending hunger. The meeting, the World Food Summit: five years later, is meant to track progress achieved since the 1996 World Food Summit and consider ways to accelerate the process.

The summit was originally scheduled for 5 to 9 November 2001 but has been delayed in the aftermath of the 11 September attacks in the United States. "The purpose of this event is to give new impetus to worldwide efforts on behalf of hungry people," says Dr Jacques Diouf, Director-General of FAO. "We must raise both the political will and the financial resources to fight hunger. The international community has repeatedly declared that it is dedicated to the eradication of poverty. Eliminating hunger is a vital first step."

Unfortunately, current data indicate that the number of undernourished is falling at an average rate of only 6 million each year, far below the rate of 22 million per year needed to reach the World Food Summit target. Although headway has been made and some striking success stories exist in individual countries and communities, much remains to be done.

World leaders will be requested to outline the measures needed to achieve the goal, and make suggestions on how to accelerate progress. They are also expected to consider how to increase resources available for agricultural and rural development.

At the World Food Summit in 1996, representatives of 185 nations and the European Community pledged to work towards eradicating hunger. As an essential first step, they set a target of reducing the number of hungry people by half by 2015. (Source: www.fao.org/worldfoodsummit/)

FAO LIVELIHOOD SUPPORT
PROGRAMME "IMPROVING SUPPORT
FOR ENHANCING LIVELIHOODS OF
THE RURAL POOR"

FAO and other agencies have been exploring sustainable livelihoods (SL) approaches as a means of enhancing the quality and impact of their programmes on the reduction of poverty and food insecurity. In this context, the promotion of sustainable livelihoods is a key strategy for FAO in its Strategic Framework for 2000-2015. With support from the United Kingdom Department for International Development (DFID), which will provide US\$7 million over five years, the Livelihood Support Programme (LSP) seeks to improve the impact of FAO interventions at country level through the effective application of sustainable livelihood approaches. The SL methods and lessons arising through the LSP are aimed at helping FAO to deliver field programmes, policies and institutions that better support the livelihoods of the rural poor.

The overall LSP programme is composed of nine complementary subprogrammes and major outputs, each with its own theme, interdepartmental team, budget and an evolving workplan developed in collaboration with the other subprogrammes. The overall LSP management team includes representatives from each of the subprogrammes.

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FOREST PRODUCTS DIVISION

FAO is to support UNCTAD's biotrade. The best way to protect a resource, such as forests and their biodiversity, is to make it useful to those destroying it. And if they are willing to preserve it instead, they should receive a fair income from it.

That is the thinking behind the Biotrade Initiative launched in 1996 by the United Nations Conference on Trade and Development (UNCTAD). Its objectives, in line with the Convention on Biological Diversity (CBD), are to ensure conservation and sustainable use of biological diversity, and to ensure that the benefits arising from its use are shared fairly. The initiative has practical support from the UNCTAD/WTO International Trade Centre, which assists developing countries with the skills needed for trade promotion and export development.

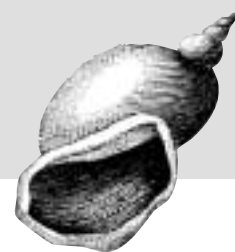
Now, following discussions in Rome with representatives of UNCTAD and the International Trade Centre, FAO will support the Biotrade Initiative's Trade Facilitation Programme. This is intended to enable sustainable trade in biodiversity products and services, through innovative partnerships in product development, processing, marketing and biodiversity management.

FAO already actively promotes a fair-trade approach to the preservation of genetic resources, one example being promotion of non-wood forest products (NWFP) that can be harvested sustainably from the forest. This gives people an economic alternative to cutting down the forest for either timber or agriculture. NWFPs range from wild honey to fibres used in car upholstery, and include mushrooms, wild edible nuts, berries and bamboo.

Why biotrade?

The thinking behind the initiative is that people will be more willing to preserve biodiversity if doing so offers economic advantages.

An example is the karite, or shea nut, tree. It grows over much of West Africa – including ecologically sensitive areas on the fringes of the Sahara, where trees are vital.



Karite demonstrates how sustainable exploitation of a resource may help preserve it, according to Paul Vantomme, FAO's expert on NWFPs. "Farmers often cut trees down to free land for growing food," he says. "But, increasingly, they are tolerating karite trees in their fields because the nuts provide an edible oil. That oil can also be processed into shea butter, which can be used as a substitute for cocoa butter in chocolates, and in cosmetics. If local farmers earn enough from the income this generates, they will integrate the trees with agriculture. This is now happening."

The next step, says Mr Vantomme, may be that farmers start growing a plant in which they previously had no interest – or even considered a nuisance. "A crossover situation has arisen in which some potentially threatened plants (such as kola nuts in West Africa) are farmed and traded, but wild ones continue to grow in nearby forests. This is good, as the wild populations can be used to maintain the genetic health of the farmed crop."

The principle does not apply solely to forests, but they offer particular potential because they are a critical reservoir of biodiversity. And NWFPs are an important business. In 1990/91 the value of the total recorded trade in such products was estimated at US\$11 billion. To put this in context, the global coffee-bean trade was then worth about US\$17 billion.



Challenges to biotrade

The Rome discussions on the Trade Facilitation Programme centred on a number of key issues concerning sustainable trade in biodiversity and forest products.

Trade in a threatened resource must have sufficient value for it to be worth preserving. But at the same time, the trade may have to be limited, precisely because the resource is limited. Species yielding NWFPs tend to grow at low densities – especially in tropical forests. This means there will not be large commercial quantities. So these products must be aimed at niche markets that can be profitable in small quantities. This could include, for example, forest plants used for high-value medicines and herbal remedies.

It is also important to determine where the limits of sustainable harvesting lie for a given wild product. And the technical tools for assessing those limits must be developed and transferred. After this, there must be ways to certify that harvesting is sustainable, in order to set standards for labelling – but it is difficult to certify products gathered in the wild.

Finally, new initiatives are needed to market unfamiliar products.

Many of these issues should be addressed by the joint activities provisionally agreed to at the meeting. They include:

- Improving terms and definitions for NWFPs, essential for international trade. Work will focus on adding to the classifications already listed by the World Customs Organization.
- Clarification of certification and labelling issues. Consumers must know that what they are buying was harvested sustainably.
- Development of benefit-sharing arrangements. These are mechanisms to ensure that those who harvest resources with care receive a fair share of the income. These arrangements also cover, for example, farmers' rights to use commercial varieties of crops developed with genetic material they have helped preserve.

- Possible joint promotion of trade in key NWFPs.

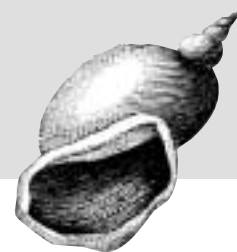
"If this collaboration develops," says Paul Vantomme, "it will help us to help local communities become partners in conservation – and raise their own living standards at the same time." (Source: www.fao.org/news/2001/010903-e.htm)

Relevance and applicability of certification and benefit-sharing mechanisms in the field of NWFPs

The assessment of impact of trade and marketing on the sustainable use of NWFPs is one of FAO NWFP Programme's many activities. The objective of the assessment is to analyse the relevance and applicability of certification and benefit-sharing mechanisms in the field of NWFPs.

For agricultural and timber products, certification and benefit-sharing mechanisms have been established in order to monitor and evaluate the ecologically friendly, economically viable and/or socially equitable use of these products. Criteria and indicators have been elaborated, against which production and commercialization are assessed. The following mechanisms are becoming more relevant for NWFPs:

- *Forest management schemes* mainly assess ecological aspects of resource management, both at the forest and species/product level. These schemes aim at providing environmentally sound products, which can be marketed as "green products".
- *Fair-trade schemes and benefit-sharing arrangements* focus on social aspects of trade and the adequate share of benefits among stakeholders, including disadvantaged local communities.
- *Product quality standards* aim at ensuring that defined production standards have been taken into consideration. These standards can focus on various aspects such as organic production or product purity.
- *Certification of origin* is used for a variety of products (e.g. food products), in order to guarantee that a given product is derived from a



certain region or area. It does not assess any quality standards.

These mechanisms are mainly used as marketing and policy tools. The variety of existing schemes, standards and arrangements reflects the different ecological and socio-economic dimensions of sustainability. Market demand appears to be the driving force when choosing a specific mechanism.

NWFPs have only recently been incorporated in some of the above mechanisms. The relevance of these mechanisms for the sustainable use of NWFPs will be analysed and the methods used to assess the sustainable production and commercialization of NWFPs will be documented by this programme activity.

The main activities include:

- a) documentation of relevant stakeholders involved in certification and benefit-sharing (e.g. private sector, governmental and non-governmental organizations, labelling initiatives, collector associations, development agencies, consumer groups);
- b) analysis of the relevance and applicability of certification and benefit-sharing mechanisms for different NWFPs (e.g. food products, medicinal plants, gums, cosmetics);
- c) compilation of working paper(s);
- d) establishment of Web site;
- e) co-organization of meeting(s).

A first review of literature on the ethical and legal aspects related to the trade in NWFPs led to the compilation of a Special Feature on the "Commercial use of biodiversity: ethical and legal aspects" published in *Non-wood News* No. 7. In addition, a report on "Benefit-sharing arrangements in the field of non-wood forest products – an overview" has been compiled and will shortly be available on our Web site.

Contacts are being established with various organizations involved in the development and application of certification and benefit-sharing mechanisms. Based on these contacts and an extensive literature review, a documentation of existing mechanisms,

organizations involved and case studies will be made available.

It is intended to co-organize a workshop in the second half of 2002 in order to clarify further the relevance of certification and benefit-sharing mechanisms related to the sustainable use of NWFPs.

Preliminary results of this documentation and information on the planned workshop will be made available on our Web site (www.fao.org/forestry/fop/fop/nwfp/nwfp-e.stm) as soon as they are available.

Note: We would greatly appreciate receiving any information on existing certification or benefit-sharing mechanisms or related case studies. This information would be duly acknowledged in our documentation.

For more information, please contact:
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Fax: +39 0657055618;
e-mail: sven.walter@fao.org



Travel of NWFP officers

Mr Paul Vantomme travelled to Australia from 11 to 22 April 2001 to attend the ninth International Conference on Tree and Nut Crops that was held in Perth. The main objectives of the conference were: to increase awareness of the importance of tree crops and nuts for food production; to provide and share information and understanding on the production, processing and marketing and their business environment; and to initiate and strengthen collaboration in

the sector between public and private organizations in the various countries.

Mr Vantomme was invited by the conference organizers to present a keynote address on FAO's activities on NWFPs during the opening plenary session, to chair the NWFP subgroup and to present a paper on gum arabic in the "Gums" subgroup. In addition, a poster on FAO's activities on NWFPs was displayed and presented by the Regional Office in the exhibition hall.

[See under *Recent Events* for more information on this conference.]

Mr Sven Walter travelled to the Sudan from 27 May to 8 June 2001 in order to participate, together with three forestry officers from the Niger, in a study tour on the production and commercialization of gum arabic, carried out in the context of TCP/NER/0066 "Support to the Revival of the Production and the Commercialization of Gum arabic" (Appui à la relance de la production et de la commercialisation de la gomme arabique). The main objective of the study tour was to inform the Niger participants about the current situation of the gum arabic sector in the Sudan, in order to enable them to draw conclusions for the development of the gum arabic sector in the Niger and to establish contacts between the institutions and governments concerned in both countries.

During the study tour, governmental organizations, producer associations, private companies and research institutes were visited in order to gather information on the production, collection and trade of gum arabic (mainly gum hashab provided by *Acacia senegal*).

Mr Sven Walter carried out a backstopping mission to the Niger from 25 June to 10 July 2001 within the framework of project TCP/NER/0066 [see above]. The aim of the mission was to:

- i) evaluate the results of the first phase of the TCP;
- ii) assist in the preparation, realization and evaluation of the "First National Workshop on the gum sector in Niger: potentialities, constraints and perspectives of the production and the commercialization of the gum arabic



sector in Niger"; and iii) prepare the second phase of the project.

During the first phase, missions were carried out by national and international consultants on technological, commercial, socio-economic and legal aspects related to the use of gum arabic in the Niger. Moreover, a study tour was carried out to the Sudan and Chad and a national workshop was organized.

The workshop achieved its goals and the results obtained will contribute to the development of the national strategy regarding the revitalization of the gum sector of the Niger and to the preparation of the second and third phases of the project.

[Please see *FAO in the Field* for more information on this project.]

Mr Paul Vantomme travelled to Switzerland from 15 to 18 July 2001 to represent FAO at the International Expert Meeting on "Ways to Enhance the Production and Export Capacities of Developing Countries of Agriculture and Food Products, including Niche Products, such as Environmentally Preferable Products". The meeting was organized by the Trade, Environment and Development Section of UNCTAD and was attended by more than 80 participants from about 40 countries. Mr Vantomme was invited by the organizers to make a presentation on the role of edible NWFPs as potential organic products for developing countries' export to niche markets in developed countries [See under *Recent Events* for more information on this international expert meeting.]

Ms Laura Russo travelled to Caracas, Venezuela, from 5 to 10 August 2001 to participate in the workshop "Información sobre productos forestales no madereros y árboles fuera del bosque en América Latina". [See under *FAO in the Field* for more information on this workshop.]

Mr François Ndeckere-Ziangba travelled to Zambia from 15 to 19 October 2001 to organize and participate in an Expert

Consultation with specialists from African English-speaking countries. The objective of the meeting was to get contributions from experts with solid practical experience in the field of NWFP inventory. These contributions would then help to develop guidelines for the assessment of NWFP resources. This Expert Consultation was one of the main activities to be performed under component 4 of the EU-funded project GCP/RAF/354/EC designed to sustain forest management in ACP African countries.

[See under *Special Features* – *Biometrics* – for more information on this Expert Meeting.]

Mr Sven Walter travelled to Cameroon from 10 to 19 November 2001 in order to participate in the national workshop "Collection and analysis of statistical data on non-wood forest products (NWFP) in Cameroon: potentialities, constraints and perspectives". The workshop was carried out in the context of the European Commission-FAO Partnership Programme "Data collection and analysis for sustainable forest management in ACP countries: linking national and international efforts" (GCP/INT/679/EC). In addition, Mr Walter collected information on the exploitation of and the trade in the medicinal plant *Prunus africana*.

During the workshop, the "Pilot study on the collection and analysis of statistical data on NWFPs in Cameroon", realized in the framework of GCP/INT/679/EC, was presented, discussed and validated. The discussions stressed the importance of improving the quality and quantity of information on NWFPs. Moreover, the participants discussed methodological aspects, the management and dissemination of information and other technical issues. The participants identified as a priority activity the organization of a national workshop, which should aim at: a) creating a national network on NWFPs and an agreement on working arrangements; b) creating a national database on NWFPs;

and c) identifying the information to be included in the database.

Mr Walter also participated in the meeting of the national working group on the exploitation and commercialization of *Prunus africana*. During the meeting, two studies on the national inventory and the trade in Europe were discussed and validated. He visited the Mount Cameroon Project Buea in order to collect in the field first-hand information on the exploitation of *Prunus africana*.

RIL-Afrique-L – une nouvelle liste électronique

La Division des produits forestiers a lancé une nouvelle liste électronique, sous le nom de RIL-Afrique-L. RIL-Afrique-L est un bulletin électronique (en français) portant sur les pratiques d'exploitation forestière à faible impact en Afrique. Il veut être l'expression d'un réseau de communications, d'échanges et de discussions entre les différents acteurs du secteur forestier et il s'adresse plus particulièrement à l'Afrique francophone.

La liste, qui va s'établir avec des inscriptions volontaires, est gérée par la Sous-Division de l'exploitation et de la commercialisation des produits forestiers (FOPH) de la FAO avec le soutien du programme de partenariat Commission Européenne-FAO «Gestion durable des forêts dans les pays africains de l'ACP».

Cette liste sera un complément à d'autres sources d'information existantes, telles que la liste RILNET opérée à partir de Bangkok avec le soutien du bureau régional de la FAO pour l'Asie et le Pacifique.

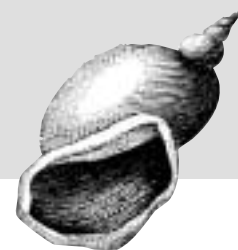
Pour s'inscrire à la liste, envoyer un message à l'adresse suivante: mailserv@mailserv.fao.org, en laissant la ligne objet vide et en rentrant la seule phrase: subscribe RIL-Afrique-L

Pour faire parvenir une contribution à la liste, envoyer un message à l'adresse suivante: RIL-Afrique-L@mailserv.fao.org

Pour plus d'informations sur RIL-Afrique-L, contacter:

Laura Russo.

Mél.: laura.russo@fao.org



FOREST RESOURCE DIVISION

FRA 2000 – main report

The Global Forest Resources Assessment 2000 (FRA 2000) provides a comprehensive and up-to-date view of the world's forest resources at the end of the second millennium. It is the result of the collective efforts of the countries of the world. This major undertaking was based primarily on information provided by the countries, supplemented by state-of-the-art technology to verify and analyse the information and to make the results accessible to the world through the Internet.

The FRA 2000 is a key source for the State of the World's Forests 2001 which reports every two years on the status of forests, recent major policy and institutional developments and important issues concerning the forest sector.

Comparison of FRA 1990 and FRA 2000

One of the most common and crucial questions we receive about the FRA 2000 results is how to compare them with FRA 1990, particularly for forest area and area change, which are the variables that hit most headlines.

A Working Paper (No. 59) which explains and analyses the differences in detail is now available online. It is no surprise that the change in forest definition for the industrialized countries caused some confusion. What may be more interesting, however, is that the so-called "slowdown" of net forest area change (1990s compared with 1980s) is more pronounced if the differences between the assessments are taken into account. Furthermore, although South

America shows considerable deforestation in the 1990s, the "slowdown trend" compared with the 1980s is quite pronounced there.

The title of the working paper is: "Comparison of forest area and forest area change estimates derived from FRA 1990 and FRA 2000" and is available online (www.fao.org/forestry/fo/fra/index.jsp – under Working Papers).

For more information, please contact:

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FRA 2000 main report:

www.fao.org/forestry/fo/fra/main/index.jsp

Database on forestry short courses

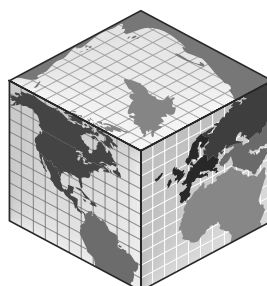
The Forest Conservation, Research and Education Service of the FAO Forestry Department has just completed a new database on Short Courses and Related Subjects. The database is meant to provide information on short courses available worldwide on forestry and related subjects, such as watershed management, protected areas and wildlife management, and ecotourism. Users can search according to training area, institution and country.

The database is available online at: www.fao.org/forestry/for/forc/free/education/courses.asp

For more information, please contact:

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E-mail: free@fao.org



FORESTRY POLICY AND PLANNING DIVISION

The role of forestry in poverty alleviation

The main contributions that forests and trees can make to the livelihoods of the poor are well known. At the same time it is clear that the economic relationship between poor people and forests and trees can be modified for good or ill by the institutional and regulatory environment within which it is found. In order to further the understanding of the ways in which forests and forestry might contribute towards the International Development Target (IDT) and the World Food Summit goal, i.e. to halve the number of people who suffer from hunger to 400 million by 2015, the FAO Forestry Department is coordinating an initiative investigating the role of forests and trees in poverty alleviation and how this role might influence poverty reduction strategies.

The first activity within this initiative was to hold an interagency Forum on the Role of Forestry in Poverty Alleviation from 4 to 7 September 2001 in Tuscany, Italy. Representatives of multi- and bilateral agencies, international research organizations and NGOs came together to share their experiences.

The aim of the forum was to help representatives of participating agencies develop a sharper sense of issues in designing and supporting assistance to the forest sector. The intention was to strengthen the capacity of identifying and highlighting conflicting policies, laws and regulations, as well as perceptions which may need to be reinterpreted to meet pro-poor goals.

The participants confirmed that forests and trees have an important role to play in the struggle to reduce poverty. The outcome of the forum was the drawing up of an Agenda for Action to assist forestry in having a more effective role in strategies for poverty alleviation.

The Agenda for Action is as follows:

1. Strengthening rights, capabilities and governance
 - Support the poor's own decision-making power



- Strengthen forest rights of the poor and the means to claim them
 - Recognize links between forestry and local governance
2. Reducing vulnerability
 - Make safety nets not poverty traps
 - Support tree planting outside forests
 - Cut the regulatory burden on the poor and make regulation affordable
 3. Capturing emerging opportunities
 - Remove the barriers to market entry
 - Base land use decisions on true value of forests
 - Ensure that markets for environmental services benefit the poor
 - Support associations and financing for local forest businesses
 4. Working in partnership
 - Simplify policies and support participatory processes
 - Promote multisectoral learning and action
 - Enhance interagency collaboration
 - Make NGOs and the private sector partners in poverty reduction

About 1.6 billion people in the world rely heavily on forest resources for their livelihoods.

Sixty million indigenous people living in the rain forests of Latin America, Southeast Asia and West Africa depend heavily on forests.

Three hundred and fifty million people living in, or next to, dense forests rely on them for subsistence or income.

(Source: *How forests can reduce poverty*. 2001. FAO.)

A brief for policy-makers, *How forests can reduce poverty*, has been published which highlights the findings from the forum and outlines the Agenda for Action. At present, the brief is only available in English. The Arabic, Chinese, French and Spanish versions will be available in March 2002.

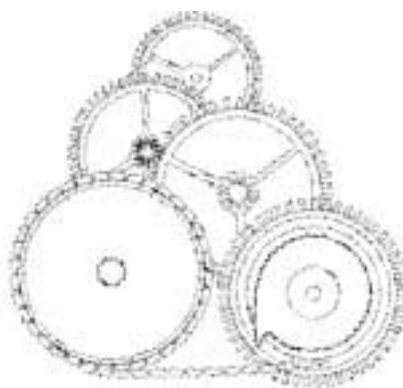
To view *How forests can reduce poverty* please visit: <http://foweb01/forestry/brochure/brochure.stm>

For more information or to request hard copies, please contact:

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FAO AND THE EUROPEAN COMMISSION (EC)

EC-FAO Partnership Programme “Data Collection for Sustainable Forest Management in ACP Countries – Linking National and International Efforts” (Project GCP/INT/679/EC)

The overall aim of this four-year programme, funded by the European Commission (Directorate-General Development), is to strengthen national capacity to collect and compile reliable and current information on forestry and analyse the forest sector.

Africa and the Near East

Two regional studies have been completed and the results published in the following two working documents produced in 2001 by FAO’s NWFP Programme:

- *Non-wood forest products in Africa: a regional and national overview/Les produits non ligneux en Afrique: un aperçu régional et national* (FOPW/01/1); and

- *Non-wood forest products in the Near East: a regional and national overview* (FOPW/01/2).

These documents consist of two main parts: i) presentation of background information on the programme activities and analysis of the available information at the regional and subregional levels; and ii) presentation of data on NWFPs at the national level (so-called “country profiles”).

Most of the data presented in these two reports are indicative figures, which have been collected in published and unpublished reports, and therefore do not represent official statistics. The results show that qualitative and quantitative information on NWFPs at the national level is still weak. It is hoped that these reports will support the ongoing process of data improvement on NWFPs.

Improved data are considered to be essential to ensure that the use and importance of NWFPs are adequately taken into consideration by decision-makers, land-use planners, politicians or other concerned experts.

Additional information and comments from readers to improve data on NWFPs in African and Near East countries would be very much appreciated. The authors of the country briefs will be duly acknowledged in the Internet version. Please contact FAO’s NWFP Programme with any comments (non-wood-news@fao.org).

Asia and the Caribbean

Data on NWFPs in Asia and the Caribbean are being reviewed and will be made available later in 2002.

Pilot studies

In addition, FAO has carried out pilot studies in Cameroon, Madagascar and Suriname in order to improve the availability of data on NWFPs. More precisely, the studies aimed at elaborating appropriate methodologies on data collection and analysis related to NWFPs, which should: i) provide reasonable estimates of the production, consumption and trade in NWFPs; ii) be widely applicable and relevant to other countries; and iii) be cost-effective,

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adaptable and feasible within the limited human and financial resources available.

The pilot studies were carried out in collaboration with:

- the University of Yaoundé, Faculty of Science, Cameroon;
- the Forestry Department, Ministry of Environment and Forestry, Madagascar; and
- Adek University of Suriname, Faculty of Technology.

Workshops were organized in Madagascar and Cameroon in order to disseminate and discuss the findings of the studies.

During the workshop held in Yaoundé, Cameroon, from 13 to 14 November 2001, the participants recommended the organization of a follow-up workshop in order to:

- create a national network, which should aim at facilitating the sharing of information on NWFPs and agree upon working arrangements;
- establish a national database on NWFPs;
- identify the information to be stored in such a database.

The participants of the workshop held in Antananarivo, Madagascar, from 20 to 22 November 2002, identified as priority activities the:

- improvement of synergies between all stakeholders (e.g. private sector, governmental and non-governmental organizations) of the NWFP sector;
- estimate of the available resources providing NWFPs;
- consideration of NWFPs as an entity within organizations concerned;
- encouragement to domesticate selected NWFPs;
- establishment of a information-sharing network on NWFPs;
- prioritization of NWFPs of major importance; and
- building of capacities within the ministries and institutions concerned.

The report of the various pilot studies, as well as a global synthesis, will be made available as a working paper.

**For more information, please contact:
FAO NWFP Programme.**

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africa/acpro-e.stm](http://www.fao.org/forestry/fon/fons/outlook/africa/acpro-e.stm)**



Proyecto GCP/RLA/133/EC – Información y análisis para el manejo forestal sostenible

Este proyecto, que integra esfuerzos nacionales e internacionales en 13 países tropicales de América Latina, persigue el mejoramiento de la calidad, cobertura y acceso a la información forestal, ya sea en materia de manejo como de administración forestal, incluyendo instituciones nacionales gubernamentales responsables del sector forestal, instituciones de investigación, el sector privado, organizaciones conservacionistas, inversionistas nacionales y extranjeros, países donantes y el público en general.

El taller sobre «Información sobre Productos Forestales No Madereros y árboles fuera del bosque en América Latina», organizado en Caracas, Venezuela, del 6 al 9 de agosto de 2001, por la Oficina Regional de la FAO para América Latina y el Caribe, en colaboración con la Dirección de productos forestales y la Dirección de recursos forestales del Departamento de Montes de la FAO y con el apoyo del Ministerio del Ambiente y los Recursos Naturales de Venezuela, tuvo tres objetivos principales:

El primer objetivo consistió en analizar, en el contexto de la Región, la calidad, cantidad, oportunidad, puesta a disposición de los usuarios y agregación de valor de la información sobre los diversos PFM y de los árboles fuera del bosque en los diferentes países de América Latina. En este contexto se sitúan los siguientes objetivos específicos: detectar las debilidades y fortalezas estructurales en los sistemas de información forestal de la Región relacionadas con la información sobre ambos temas tratados; detectar las similitudes y diferencias en las debilidades y fortalezas de los sistemas de información forestal en lo que respecta a los productos forestales a nivel de países de desarrollo forestal similar y/o pertenecientes a los Grupos Subregionales de la COFLAC, Centroamérica y México, Cono Sur y Amazónico.

El segundo objetivo consistió en desarrollar, con los asistentes al taller, un proceso de capacitación que redunde en un mejoramiento de la recolección, análisis, puesta a disposición de los usuarios y agregación de valor de la información sobre PFM y árboles fuera del bosque en América Latina.

El tercer objetivo consistió en desarrollar un proceso de capacitación horizontal, es decir, desde los propios países participantes en el proyecto, destinado en particular a: recibir una capacitación sobre la experiencia de la información forestal referente al tema del taller por parte de una institución subregional como CATIE; recibir la presentación sobre la experiencia del propio país anfitrión del taller.

El taller se desarrolló mediante conferencias plenarias y sesiones de trabajo en grupo, y contó con el apoyo técnico de L. Russo, Oficial forestal de la Subdirección de industrias madereras y de S. Sadio, Oficial forestal del Servicio de Conservación, Investigación y Enseñanza Forestales de la Sede de la FAO en Roma. El taller fue moderado por J. Morales, Coordinador del Proyecto en la Oficina Regional de la FAO para América Latina y el Caribe con sede en Santiago de Chile.

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Al taller asistieron representantes oficiales de los 16 países que participan en el proyecto. Y se contó, además, con la presencia de invitados especiales y expertos en la temática del taller.

También asistieron permanentemente técnicos del Ministerio del Ambiente y los Recursos Naturales de Venezuela.

A continuación se presenta un resumen con las recomendaciones y conclusiones más importantes derivadas de los trabajos de síntesis sobre los dos temas centrales.

El aprovechamiento de los PFNM se basa en la extracción o caza, con excepción de algunos de ellos que, por su importancia económica, se cultivan o crían en forma intensiva. Tal es el caso del orégano, la jojoba, el palmito, la hierba mate, el caucho y algunas palmas, entre otras. Cabe señalar que el cultivo de estas especies también depende del conocimiento biológico que se tiene de la especie.

La carencia de información continua que comprende desde la recolección hasta la comercialización, incluyendo el manejo referente a los PFNM y los servicios que brinda el bosque, provoca la subvaloración de los mismos. Se hace necesario, por lo tanto, orientar más recursos y desarrollar más investigaciones sobre los PFNM; así como implementar políticas que estimulen su explotación sostenible, a fin de resguardar la diversidad biológica y contribuir al desarrollo de las regiones donde se localizan estos productos.

A tal fin, se requiere contar con bases de datos en cada país que elaboren la información con variables estandarizadas, lo que hará más accesible el intercambio de información entre los países de América Latina, sobre todo en los aspectos comerciales y de manejo.

La información de la base de datos debe ser revisada, sistematizada, evaluada y procesada, a efectos de contar con información actualizada que pueda difundirse oportuna y públicamente a través de boletines informativos, revistas técnicas especializadas o páginas Web. De esta manera, se podrá contar con los

elementos necesarios para establecer el valor real de esta actividad en la economía regional y en el sector forestal en su conjunto.

Se debe fomentar la domesticación de las especies, cuando esto sea posible, sin menoscabo de la calidad de sus productos, lo que coadyuvará a disminuir la presión sobre las poblaciones silvestres.

Es necesario promover el manejo de los PFNM dentro de los sistemas agrosilvopastoriles, como una de las mejores opciones para el manejo integrado de los recursos forestales.

Se debe promover el desarrollo de proyectos de investigación que generen información básica referente a la ecología, biología, manejo y comercialización de los PFNM con mayor importancia socioeconómica en cada país.

Igualmente hay que promover la realización de proyectos regionales de investigación multidisciplinaria de los PFNM con importancia regional, a través de la participación y financiamiento multinacionales.

Las economías de las regiones en las cuales se extraen los PFNM se caracterizan por su fragilidad en el contexto de las economías nacionales y, más aún, en el de la internacional. Esta fragilidad exige una particular mesura a la hora de promover alternativas productivas novedosas o la ampliación de las existentes a circuitos de mercados mayores. Cualquier propuesta de envergadura significativa deberá partir de la realización de estudios de factibilidad, ya que de no hacerlo existe un gran riesgo de emprender empresas comerciales e iniciativas sociales asociadas con los PFNM con pocas probabilidades de éxito.

Se debe impulsar estudios específicos sobre el manejo de las especies objeto de extracción actual o potencial. Para ello es necesario un marco político que brinde a los investigadores la posibilidad de iniciar y darle seguimiento en el mediano y largo plazo a sus investigaciones, sobre todo en aquellos productos que así lo ameriten (por ejemplo, setas).

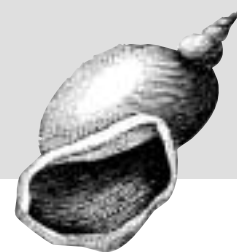
Uno de los principales problemas que enfrenta la colecta, análisis y diseminación

de la información sobre los PFNM es la escasa importancia que quienes toman decisiones, y la sociedad en general, dan a los PFNM. De allí que toda acción que se tome para lograr la concientización y conocimiento de sus potencial e importancia actual y futura, resulta fundamental.



Acciones de corto, mediano y largo plazo en los PFNM

- Promover y organizar un red regional de información de los PFNM.
- Mantener la vigencia de SI Regional-PFNM como consecuencia de este esfuerzo inicial, con el propósito de definir y viabilizar las estrategias formuladas en consenso y orientadas a satisfacer las necesidades específicas de información.
- Generar el programa informático para el procesamiento de la información sobre PFNM y capacitar al personal encargado de su manejo.
- Validar y enriquecer el programa informático.
- Poner en funcionamiento la red regional.
- Sugerir a la FAO la incorporación de los PFNM en el Cuestionario Conjunto del Sector Forestal (FAO, ITTO, CEPE, EUROSTAT).
- Realizar talleres locales de amplia participación a fin de divulgar información y compartir conocimientos y experiencias sobre PFNM.
- Difundir en foros internacionales la relevancia socioeconómica y ambiental de los PFNM.



- Detectar aquellos temas vinculados a los PFM que resulten de inmediata consideración para el cumplimiento de los compromisos internacionales suscritos por los países signatarios.

Posibles proyectos de apoyo a los SIF de los países para mejorar la información sobre PFM

Realizar una encuesta regional para detectar elementos comunes para la formulación y ejecución de proyectos conjuntos.

Formular e implementar proyectos específicos sobre PFM de interés común entre países de la región, tales como taninos, hongos, palmas, palmitos, gomas, algarrobos, fibras, esencias, plantas medicinales, entre otros.

Para más información, dirigirse a:
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FAO IN THE FIELD

Technical Cooperation Project (TCP) "Support to the Revival of the Production and the Commercialization of Gum Arabic" (TCP/NER/0066)

Gum arabic is an exudate, derived from *Acacia senegal* and *Acacia seyal*, which is mainly used in the food and pharmaceutical industry. Both gum arabic-yielding species grow in the semi-arid areas of sub-Saharan Africa. The so-called "gum belt" crosses Africa from Senegal/Mauritania in the west to Somalia in the east. World trade is supposed to reach 40 000 tonnes per year. The main exporting countries are the Sudan, Chad and Nigeria.

The Niger was one of the major gum arabic exporting countries in the 1960s and 1970s. In 1979, the Niger exported 2 610 tonnes, but this amount dropped to some 100 tonnes in 1998. The causes for

the decline are multiple and include: bad condition of the gum-providing species, inappropriate exploitation techniques (tapping, natural exudation), disorganization of the production and market chain, and insufficient political and institutional support.

FAO was requested to assist the Government of the Niger in the elaboration of a national strategy in order to improve and strengthen the national gum arabic sector. FAO is, therefore, funding a 15-month (December 2000 to April 2002) Technical Cooperation Project, which is being executed by the Ministry of Environment and Combating Desertification (MELD). FAO's NWFP Programme is responsible for the technical implementation of the TCP.

The main project activities include:

1. Diagnosis of the current situation related to resource management, socio-economic aspects, collection and processing technologies, trade and legal aspects (Phase 1).
2. Development of guidelines and extension concepts related to the sustainable use of gum arabic in the Niger (Phase 2).
3. Elaboration of proposals for an adequate legal framework and improved institutional collaboration (Phase 2).
4. Development of a national strategy and plan of action and proposals for follow-up projects (Phase 3).

During the first phase of the project, which finished on 31 July 2001, various technical reports on resource management, commercialization, technology, socio-economic and legal aspects provided the necessary information to analyse the status of the gum arabic sector in the Niger.

The information that was collected and analysed over seven months was presented and discussed during a four-day workshop on "Potentials, constraints and perspectives of gum arabic production and commercialization in Niger". This workshop was held in Diffa, the Niger from 2 to 5 July 2001 and was attended by some 90 participants representing different stakeholders

involved in the gum arabic sector in the Niger (e.g. producers, collectors, exporters, representatives from different ministries).

During the second phase of the project, i) the above-mentioned guidelines and extension concepts on resource management, technological and socio-economic aspects, and ii) proposals for an adequate legal framework and institutional collaboration, will be elaborated.

In addition to the FAO NWFP Programme, technical backstopping of the project is provided by the FAO Forest Conservation, Research and Education Service (FORC) and the FAO Development Law Service (LEGN).

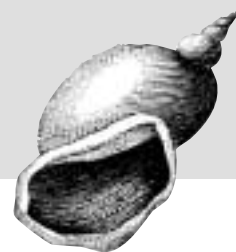
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Acacia senegal

CENTER FOR TROPICAL FOREST SCIENCE

The Center for Tropical Forest Science (CTFS) is a programme within the Smithsonian Tropical Research Institute (STRI) that joins together – through formal memoranda – a voluntary association of natural and social scientists and institutions around the world. The mission of CTFS is to promote and coordinate long-term biological and socio-economic research



within tropical forests and forest-dependent communities, and translate this information into results relevant to forest management, conservation and natural-resource policies. To achieve its objectives, natural and social scientists associated with CTFS work with foreign collaborators in forestry departments and universities to develop a network of long-term forest research sites. The primary involvement of CTFS is to coordinate and standardize research at different sites. CTFS also provides technical assistance and training to the extent needed at each site.

A unifying research tool shared by all CTFS research sites is the Forest Dynamics Plot.

These are large (up to 52 ha), permanent forest demographic plots that are situated in natural forests. All trees with a diameter of 1 cm or greater are mapped, identified and monitored. An initial census and periodic recensuses yield long-term information on species growth, mortality, regeneration, distribution and productivity in relation to topography, hydrology, soils, climate and biotic factors. Owing to their large size, the plots are capable of dealing with the high tree diversity of tropical forests.

The CTFS network of long-term forest research programmes is monitoring more than 3 million individuals of approximately 6 000 tree species throughout the world's tropics.

CTFS is currently addressing questions such as:

- Why do tropical forests have high species diversity? How can that high diversity be maintained under conditions of human use?
- What role do tropical forests play in stabilizing our climate and atmosphere? How can we take advantage of and enhance their ability to store carbon?
- What determines tropical forest productivity? How can we utilize forest resources sustainably?

By finding answers to these types of questions, CTFS fulfils its twofold goal of:

a) helping us understand how tropical forests respond to human activity; and

b) providing a sound scientific basis for relevant forest management and policy decisions.

The Center for Tropical Forest Science also produces an annual newsletter, *Inside CTFS*.

For more information, please contact:
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CONVENTION ON BIODIVERSITY

The 7th Meeting of the Subsidiary Bodies for Scientific, Technical and Technological Advice (SBSTTA) of the Convention on Biodiversity (CBD) took place in Montreal, Canada from 12 to 16 November 2001. Working Group I of SBSTTA-7 focused on forest biodiversity issues and discussed recommendations on the forest work programme, status and trends, bushmeat, forest fires and climate change, as well as the specific elements of the work programme on forest biodiversity.

During the working group discussions, the issue of NWFP (called NTFPs in the documentation) was mentioned in various contexts:

The linkages between biodiversity and *human health*, which have so far been largely ignored in CBD's work, were highlighted, stressing that human health depends on biodiversity. It was mentioned that: i) medicine from natural

sources and species contribute to medicinal research; ii) relationships exist between biodiversity destruction and the spread of diseases; iii) biodiversity and food production are interlinked.

Regarding the management of NWFPs, the sustainable harvest of NWFPs was addressed, noting differences in perceptions regarding the use and importance of NWFPs.

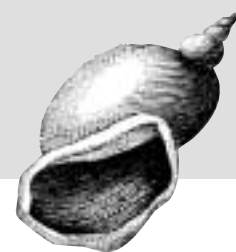
The bushmeat crisis was highlighted and the establishment of a United Nations bushmeat task force and captive breeding programmes was proposed. Based on this proposal the following comments were made:

- the European Commission preferred a joint work programme with other institutions instead of a task force;
- the Russian Federation noted bushmeat-related problems in temperate and boreal forests;
- Colombia highlighted the responsibilities of consumer countries; and
- Cameroon, with Senegal, stressed the need for alternative sources of protein. Senegal noted the need for breeding programmes and financial resources.

Following this discussion, a draft provision on bushmeat was introduced. Responding to the draft, Belgium suggested broadening the focus to cover unsustainable hunting of forest animals, and Kenya called for collaboration with other relevant agreements and institutions. Delegates debated whether to establish a liaison group or an expert group without resolving the bushmeat issue.

The final text (UNEP/CBD/SBSTTA/7/CRP.1) requests the Executive Secretary to establish a liaison group on non-timber forest resources with a focus on bushmeat. It invites Collaborative Partnership on Forests (CPF) members to explore the integration of non-timber forest resources in inventory and management; invites FAO, the International Tropical Timber Organization and others to address biodiversity in their fire assessment activities; and references community-based approaches to managing forest fires and non-timber forest resources.

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Finally, activities to prevent losses caused by unsustainable harvesting of timber and NWFPs were identified. They include:

- the establishment of a liaison group with an associated workshop to facilitate a joint work plan with relevant CPF members to bring harvesting of NWFPs, particularly

- bushmeat, to sustainable levels;
- the promotion of alternatives to fuelwood;
- the development of legislation; and
- encouragement and assistance of importing countries to prevent illegal import not covered by the Convention on International Trade in Endangered Species of Fauna and Flora (CITES).

(Source: P.S. Chasek, ed. 2001. Summary of the seventh session of the Subsidiary Body for Scientific, Technical and Technological Advice of the Convention on Biological Diversity, 12-16 November. *Earth Negotiation Bulletin*, 9(212). Also available at www.iisd.ca/linkages/biodiv/sbstta7/)

ANNEX TO RECOMMENDATION VII/6 OF SBSTTA-7

Elements for an expanded work programme on forest biological diversity – Summary of specific recommendations related to NWFP

Programme element 1:

Conservation, sustainable use and benefit-sharing

Goal 4: To promote the sustainable use of forest biological diversity.

Objective 1: Promote sustainable use of forest resources to enhance the conservation of forest biological diversity.

Activities:

- (b) Develop, support and promote programmes and initiatives that address the sustainable use of timber and *non-timber forest products*.
- (c) Support regional cooperation and work on sustainable use of timber and *non-timber forest products* and services, including through technology transfer and capacity building within and between regions.
- (h) Facilitate and support a responsible private sector committed to sustainable harvesting practices and compliance with domestic laws through effective development and enforcement of laws on sustainable harvesting of timber and *non-timber forest resources*.

Objective 2: Prevent losses caused by unsustainable harvesting of timber and *non-timber forest resources*.

Activities:

(a) Establish a liaison group with an associated workshop to facilitate development of a joint work plan with relevant members of the Collaborative Partnership on Forests to bring harvesting of *non-timber forest products (NTFP)s*, with a particular focus on *bushmeat*, to sustainable levels. This group should have a proportionate regional representation, giving special consideration to subregions where *bushmeat* is a major issue and representation of relevant organizations such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The mandate of this group is to:

- (i) Consult in a participatory manner with key stakeholders to identify and prioritize major issues pertaining the unsustainable harvesting of *non-timber forest products*, particularly of *bushmeat* and *related products*.
- (ii) Provide advice on the development of policies, enabling legislation and strategies that promote sustainable use of, and trade in, *non-timber forest products*, particularly *bushmeat* and *related products*.
- (iii) Provide advice on appropriate alternative sustainable livelihood technologies and practices for the affected communities.
- (iv) Provide advice on appropriate monitoring tools.

(c) Develop any necessary legislation for the sustainable management and harvesting of *non-timber forest resources*.

(d) Solicit input from Parties, other countries and relevant organizations on ways and means to encourage and assist importing countries to prevent the entry of illegally harvested forest resources, which are not covered by the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and consider this information as a basis for further steps on this issue.

Programme element 2: Institutional and socio-economic enabling environment

Goal 1: Enhance the institutional enabling environment.

Objective 4: Combat illegal logging, illegal exploitation of *non-timber forest products*, illegal exploitation of genetic resources, and related trade.

Activities:

- (f) Invite governments and relevant organizations to develop and forward to the Secretariat case-studies and research on the impacts of illegal exploitation and trade in timber and *non-timber forest products*.
- (Source: Secretariat of the Convention on Biological Diversity. 2001. Recommendation VII/6, Forest biological diversity, www.biodiv.org/recommendations/default.asp?lg=0&m=sbstta-07&r=06)



IUCN/SSC MEDICINAL PLANT SPECIALIST GROUP



The Medicinal Plant Specialist Group (MPSG) is a global network of experts contributing within their own institutions and in their own regions to the conservation and sustainable use of medicinal plants. The MPSG was founded in 1994, under the auspices of the Species Survival Commission (SSC) of the World Conservation Union (IUCN), to increase global awareness of conservation threats to medicinal plants, and to promote conservation action. Our group is currently made up of approximately 70 individual scientists, field researchers, government officials and conservation leaders.

Our overall aim is to support and promote efforts leading to medicinal plant conservation and rational, sustainable use. Our approach is to provide information, tools and strategy coordination that builds on the efforts of local, national, regional and global partners to conserve and use medicinal plants sustainably, focusing particularly on actions that reduce threats to endangered species and habitats.

During the current triennium (2001-2003), one of our goals is to restructure the group, currently more than 70 members worldwide, into regional subgroups. We are setting up a steering committee, which includes regional vice-chairs. This change in structure will support the engagement of the subgroups in development of regional projects, as well as identification of regions where our membership needs to be strengthened. We are furthest along in organizing regional MPSG subgroups in

South Asia and in Central America and the Caribbean. We are also working to set up more efficient communication tools for the group (an electronic list-serve and a Web site).

In partnership with the International Development Research Centre and the Canadian Museum of Nature, and other partners, we are developing regional projects as Centres of Medicinal Plant Diversity. These projects will support research on medicinal plant conservation, as well as the wider application of SSC tools, such as Red Listing, the Species Information Service and the Top 50 campaign.

Recent publications include the 7th issue of our newsletter *Medicinal Plant Conservation* (contact: Natalie.Hofbauer@bfn.de) and the second volume of the *Medicinal Plant Conservation Bibliography* (available through info@books.iucn.org).

MEDICINAL PLANT CONSERVATION BIBLIOGRAPHY, VOLUME 2

In June 2001, volume 2 of the *Medicinal Plant Conservation Bibliography* was published (the first volume was published in 1996). This bibliography is designed to collect information from the many scattered sources of books and papers on medicinal plants and to set priorities on books focusing on the conservation of medicinal plants. In total, 801 references and 170 reviews, indexed by general, geographic and taxonomic keywords are incorporated for the period 1997 to 2000.

The second volume of the bibliography can be purchased from: IUCN Publications Service Unit, 219c Huntingdon Road, Cambridge, CB3 0DL, United Kingdom; fax: +44 1223 277175; e-mail: info@books.iucn.org
Bibliographical information: Uwe Schippmann, 2001, *Medicinal Plant Conservation Bibliography, Volume 2*. ISSN 1433-304x.

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OVERSEAS DEVELOPMENT INSTITUTE

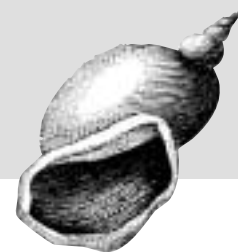
The Overseas Development Institute (ODI) is the United Kingdom's leading independent think-tank on international development and humanitarian issues. Its mission is to inspire and inform policy and practice which lead to the reduction of poverty, the alleviation of suffering and the achievement of sustainable livelihoods in developing countries. This is done by locking together high-quality applied research, practical policy advice, and policy-focused dissemination and debate. ODI works with partners in the public and private sectors, in both developing and developed countries.

ODI's work centres on five research and policy programmes:

- Poverty and Public Policy Group, which includes the Centre for Aid and Public Expenditure
- International Economic Development Group
- Humanitarian Policy Group
- Rural Policy and Environment Group
- Forest Policy and Environment Group

The Forest Policy and Environment Group (FPEG) has its own Web site (www.odi.org.uk/fpeg/index.html) housing a variety of publications, including the Rural Development Forestry Network

INTERNATIONAL ACTION



(RDFN) papers, the TROPICS (Tropical Forestry Projects Information System) database and a "grey literature" collection.

The Rural Development Forestry Network is an important component of FPEG's outreach programme. As well as disseminating research information on key issues in tropical forestry to its members, the network aims to influence policy- and decision-making in both governments and international aid agencies.

Rural Development Forestry 1985-2001

The Overseas Development Institute has produced a CD-ROM that contains 17 years of its publications on forestry-related issues. Its 214 key publications chart the development of people-oriented forestry from 1985 to the present day:

- 174 Rural Development Forestry Network papers (RDFN)
- 5 European Tropical Forestry Papers (EUTFP)
- 14 Natural Resources Perspectives (NRP)
- 4 forestry-related Working Papers (WP)
- 17 chapters of the EU Tropical Forestry Sourcebook

All papers are indexed by publication, keyword, author and region. Full text versions of the majority of publications are available in English, French and Spanish as Acrobat pdf files. The Adobe Acrobat® Reader™ software is also included on the CD-ROM.

For more information, please contact:
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TRAFFIC

Trade Records Analysis of Flora and Fauna in Commerce (TRAFFIC) was established in 1976, largely to assist in the implementation of the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES). Today CITES covers some

30 000 plant and animal species and has more than 150 member countries. TRAFFIC itself has developed from a single office based in London into a global network of 22 offices in eight regional programmes around the world, being the world's largest wildlife trade monitoring programme and a global expert on wildlife trade issues.

The global wildlife trade is big business, estimated to be worth billions of dollars and involving hundreds of millions of plants and animals every year. Most of the trade is legal but a significant portion of it is not. The trade is diverse, ranging from live animals for food and pet markets to ornamental plants and to huge industries such as timber and marine fisheries. An array of wildlife products and derivatives, such as exotic leather goods, ivory carvings and hawksbill turtle shell accessories, musical instruments, food and medicines can be found in markets around the globe. For more information on wildlife trade, please visit the TRAFFIC Web site (www.traffic.org).

In 2001, TRAFFIC celebrated its 25th anniversary with a "25th Anniversary Event of TRAFFIC", which was held on 27 November 2001.

For more information on TRAFFIC, please contact:
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www.traffic.org



TROPENBOS INTERNATIONAL

A new name, a new logo, a new funding phase. The Tropenbos Foundation is making some changes after ten years. With increasing attention to international environment issues related to tropical rain forests, and more autonomy exercised by the research sites, the time had come to give Tropenbos the stature of a full-fledged international organization.

Confusion about whether Tropenbos was located in Wageningen, the Netherlands, or in a certain country was noted frequently by the research sites. By renaming the organization "Tropenbos International", this indicates that the activities are foremost of a worldwide nature.

As the third funding phase of the Tropenbos programme set in (2001-2005), the opportunity to make this change was apparent. Each research site will place the country name below the logo so that it is seen as linked to "Tropenbos International" but is recognized locally as the national site. The head office in Wageningen will refer to the organization in general as "Tropenbos International".

The logo will be incorporated immediately. The acronym to be used will be TBI, but the Internet address is to remain (www.tropenbos.nl).

The Tropenbos Foundation, established in 1988, is an independent, internationally oriented organization which facilitates research and development activities to support the conservation and sustainable utilization of tropical rain forests.

Tropenbos, in close cooperation with universities and research institutes, facilitates interdisciplinary research at permanent locations. Currently these are in Cameroon, Côte d'Ivoire, Colombia, Guyana and Indonesia. Research results are applicable on a local as well as on a broader scale. (Contributed by: J.B. Maas, Tropenbos International.)

For more information, please contact:
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EXPLORING AFRICAN BIODIVERSITY FOR NEW NATURAL PRODUCTS

ROME, ITALY
9-11 APRIL 2001

This three-day workshop was jointly organized by the Italian National Research Council (CNR) Rome (Department of International Activities), CNR Porano (Institute of Agro-Forestry), CNR Portici (Institute for Vegetable and Ornamental Breeding) and the Fogarty International Center (FIC) of the National Institutes of Health (NIH) and was funded by CNR, and three United States NIH (FIC, National Cancer Institute and the National Institute of Allergy and Infectious Diseases).

The main objective of the workshop, which brought together some 70 participants from 14 countries, was to explore the strengths and needs of institutions towards the formation of a partnership to build natural products capacities in Africa and to promote the conservation and sustainable use of African biodiversity through an international network of institutions based in Africa, Italy and the United States.

Sessions and working groups covered, among other subjects, African plant diversity, new products from medicinal plants (bioprospecting), property rights and local economic benefits.

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Walnut tree

INTERNATIONAL CONFERENCE ON TREE AND NUT CROPS

PERTH, AUSTRALIA
13-20 APRIL 2001

The conference was hosted at the University of Western Australia State by the Western Australian Tree Crops Center and cofunded by the Australian Nut and Tree Crop Association, the Ministry of Agriculture and some private companies dealing with nuts and tree crops. The main objectives of the Conference were to increase awareness of the importance of tree crops and nuts for food production; to provide and share information and understanding on their production, processing and marketing and their business environment, and to initiate and strengthen collaboration in the sector between public and private organizations in the various countries.

The conference brought together some 100 participants from all around the world to share their knowledge and the latest new developments in the tree crop industry, in addition to "virtual" participation and presentations given by some Californian tree farmers through video-conferencing and Internet-downloaded ppt presentations. Participants represented a wide variety of organizations from the non-governmental, public and, particularly, the private sector (from farmers to representatives of international food companies). The conference consisted of two days with 22 plenary presentations, followed by three full days of presentations in smaller subgroups on 20 specific topics such as: carob, hazelnuts, walnuts, macadamias, neem, sandalwoods, NWFPs, beverages, gums, truffles-host trees, etc. On two post-conference tours, participants could get an insight into the fast expanding and widely diversified nut and tree crop sector of Western Australia (with climate ecozones from tropical to temperate regions).

Mr Paul Vantomme, Forestry Officer (NWFP) represented FAO at the

conference. He was invited by the organizers to present a keynote address during the opening plenary session on FAO's activities on NWFPs; to act as chairperson of the NWFP subgroup; and to present a paper on gum arabic in the "Gums" subgroup.

The dynamics in the nut and tree crop sectors of countries represented, particularly California (and to a lesser degree also Australia, Chile and South Africa), were impressive: more than 260 different tree crop species (mainly for nuts, fruits, oils, medicinals and aromatics) are already commercially farmed (while at the same time most of these species are still gathered from wild sources in their area of origin – or have even become commercially extinct). For many developing countries who are exporting tree-based NWFPs gathered from wild sources, it is important to note that many of their products might soon become economically and quality-wise uncompetitive as against those tree crops produced on a large scale and by highly mechanized tree farms in developed countries (such as Australia, Chile, United States [California and Hawaii]).

The conclusions of the conference regarding NWFPs indicated the need for better information on the potential and (germplasm) availability of non-wood forest tree resources in relation to species currently used (and the assessment of the potential of new species for domestication), better availability and access to market and marketing information for producers in developing countries, and particularly the relevance and importance of good labelling and certification schemes on NWFPs; as well as training and networking on the management, processing and marketing of NWFPs.

For more information, please contact:
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Australia.
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www.AOI.com.au/acotanc



THE NATURE AND CULTURE OF FORESTS: IMPLICATIONS OF DIVERSITY FOR SUSTAINABILITY, TRADE, AND CERTIFICATION

VANCOUVER, CANADA
8-12 MAY 2001

The conference objective was to address how diversity in cultural values shapes the operative concept of respect for nature and impacts decision-making in forest policy. The following topics were featured: a) Diversity in the nature of forests; b) Plurality in the culture of forests; and c) Variability in approaches of certification and management.

For more information, please contact:
Sandra Schinnerl, International Programs, Faculty of Forestry, UBC, 2611-2424 Main Mall, Vancouver, BC V6T 1Z4, Canada.
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SECOND INTERNATIONAL WORKSHOP ON THE ECOLOGY, PHYSIOLOGY AND CULTIVATION OF EDIBLE MYCORRHIZAL MUSHROOMS

CHRISTCHURCH, NEW ZEALAND
3-6 JULY 2001

For more information, please contact:
Crop & Food Research Ltd, Private Bag 4704, Christchurch, New Zealand.
Fax: +64 3 3252074;
e-mail: rcgminfo@crop.cri.nz;
www.crop.cri.nz/whats_on/mushroom_conf/Index.htm



WAYS TO ENHANCE THE PRODUCTION AND EXPORT CAPACITIES OF DEVELOPING COUNTRIES OF AGRICULTURE AND FOOD PRODUCTS, INCLUDING NICHE PRODUCTS, SUCH AS ENVIRONMENTALLY PREFERABLE PRODUCTS

GENEVA, SWITZERLAND
15-18 JULY 2001

This International Expert Meeting, organized by the Trade, Environment and Development Section of the United Nations Conference on Trade and Development (UNCTAD), was attended by more than 80 participants from about 40 countries and included mostly staff from Permanent Missions to the United Nations in Geneva, senior government officials and technical experts from various international agencies, and representatives of NGOs and from the private sector, mainly from fair-trade agencies, bioproduct distributors and from organic food certification agencies. Mr Paul Vantomme, Forestry Officer (NWFP) represented FAO at this meeting and made a presentation on the role of edible NWFPs as potential organic products for developing countries to export to niche markets in developed countries.

The focus of the meeting was to discuss and exchange experiences on enhancing the production and trade of agricultural products, with particular emphasis on organic food products from developing countries for international niche markets, such as for biotrade and for fair-trade schemes. Key issues reviewed during the meeting focused mainly on the trade potential of niche markets for food products from developing countries and on their appropriate certification and labelling schemes, including their required costs, implementation and monitoring issues, and also the mutual understanding and recognizance of different organic certification schemes; on their perceived role as trade barriers by the developing

countries and on the need for reliable statistics on production and trade in organic products.

It appeared during the meeting that edible NWFPs, such as mushrooms, wild honey, nuts, bamboo shoots, have considerable potential at niche markets for organic, biotrade or fair-trade outlets. However, much work is still needed for the appropriate inclusion of "wild" gathered food products into the existing organic certification schemes, and recommendations in this regard were made by the expert meeting to the certification bodies. Participants were highly interested in learning from successful experiences on NWFP utilization and market promotion from developing countries and looked to FAO for information sharing and for exploring ways of collaboration and support.

Documents for the meeting are available online (www.unctad.org/en/special/c1em15do.htm).

For more information, please contact:
UNCTAD, External Relations and Communications, Palais des Nations, 1211 Geneva 10, Switzerland.
Fax: +41 22 9070043;
e-mail: ers@unctad.org;
www.unctad.org/index.htm



BALKANS HERBAL FORUM

PORTOROZ, SLOVENIA
16-20 SEPTEMBER 2001

The International Finance Corporation through Southeast Europe Enterprise Development (SEED) is committed to help rebuild what was once a thriving and important industry in southeastern Europe. The Herbal Business Forum

RECENT EVENTS



organized by SEED was to be the first time in recent years that all the stakeholders involved in this sector had an opportunity to sit together to map out the future of the Balkan herbal industry in southeastern Europe. Leading regional suppliers attended the forum alongside some of Western Europe's herbal manufacturers and importers. The meeting formed a platform from which to launch a number of long-term initiatives designed to redevelop the sector in an environmentally sustainable and socially responsible manner.

Southeastern Europe has for centuries been a producer and consumer of medicinal plants and herbal medicines. The varied climate and geography of the region enables a vast array of temperate and Mediterranean plants to be grown. A rich medical and engineering tradition has moreover encouraged the manufacturing of a wide range of phytomedicines, flavourings, perfumes and cosmetic products. During the 1970s and 1980s the former Yugoslavia supplied medicinal and aromatic products to a host of leading Western European, American and Soviet companies.

Political upheavals in recent times have severely disrupted herbal gathering, cultivation, manufacturing and trade within the region. Some of the most important medicinal plants are severely endangered as a result of overharvesting and lack of appropriate environmental legislation. Through this forum SEED helped to initiate the reintegration of the region's herbal producers into the mainstream of Western Europe's herbal industry.

FAO was represented at the meeting by Mr Peter Griffie who works on medicinal and aromatic plants in the Crop and Grassland Service of the Plant Production and Protection Division.

For more information, please contact:
Chris Miller, SEED – Southeast Europe Enterprise Development, Hamdije Kresevljakovica 19/IV, 71000 Sarajevo, Bosnia and Herzegovina.
Fax: +387 33 217762;
e-mail: cmiller3@ifc.org;
www.ifc.org/sme/html/seed.html

FIRST INTERNATIONAL SYMPOSIUM AND EXPOSITION ON ECOTOURISM AND SUSTAINABLE DEVELOPMENT OF THE AMAZON BASIN COUNTRIES – AMAZON ECOTOUR 2001

MANAUS, BRAZIL
 24-27 SEPTEMBER 2001

For more information, please contact:
Instituto Ambiental Biosfera, Rua Uruguaina, 39 – Bloco A – Grupo 2401 B; Centro – Rio de Janeiro, Brazil 20050-093.
Fax: +55 21 2210155;
www.ecotourenglish.com.br.ms



CONSERVATION OF BIODIVERSITY IN THE ANDES AND THE AMAZON BASIN – LINKING SCIENCE, NGOS AND INDIGENOUS PEOPLES

CUSCO, PERU
 24-28 SEPTEMBER 2001

For more information, please contact:
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www.inka-ev.de/congress2001.htm;
or
Eliana Rivera, Centro Bartolomé de Las Casas, Av. Tullumayo 465, Cusco, Peru.
Fax: +51 84 241319;
erivera@apu.cbc.org.pe;
www.cbc.org.pe

FORESTRY AND FOREST PRODUCTS RESEARCH (CFFPR 2001) – “TROPICAL FORESTRY RESEARCH IN THE NEW MILLENNIUM: MEETING DEMANDS AND CHALLENGES

KUALA LUMPUR, MALAYSIA
 1-3 OCTOBER 2001

The themes of this international conference were: sustainable forest management (SFM); biodiversity and the environment; processing and utilization of forest resources (wood products and non-wood products); forest plantation; biotechnology; forest policies; forest economics, investment opportunities and potential for growth; information technology (IT) in forestry; and commercialization of forestry R&D.

For more information, please contact:
Dr Shamsudin Ibrahim or Ms Safiah Yusoff, The Secretariat, Conference on Forestry and Forest Products Research 2001 (CFFPR 2001), Forest Research Institute Malaysia (FRIM), Kepong, 52109 Kuala Lumpur, Malaysia.
Fax: +60 3 62779643/62767753;
e-mail: sham@frim.gov.my or safiah@frim.gov.my;
www.frim.gov.my/100years/CFFPR2001.htm

BIODIVERSITY OF GUYANA: A GLOBAL PERSPECTIVE FOR THE FUTURE

GEORGETOWN GUYANA
 7-13 OCTOBER 2001

For more information, please contact:
V.A. Funk, US National Herbarium, NMNH, Smithsonian Institution, MRC 166, Washington, DC 20560-0166, USA.
Fax: +1 202 7862563;
e-mail: funkv@nmnh.si.edu;
www.guyana2001.org



INDIGENOUS PEOPLES AND FOREST MANAGEMENT IN FENNOSCANDIA AND CANADA

RJOKKMOKK, SWEDEN
10-12 OCTOBER 2001

The focus of this conference, which brought together indigenous representatives, environmental groups, governmental and intergovernmental bodies and industry, was on forest use, land rights and indigenous strategies for sustainable development. The programme highlighted market-based and legal instruments emphasizing forest certification schemes.

For more information, please contact:
E-mail: lisa.blind@same.net;
www.sapmi.se/forestconference



NON-WOOD FOREST PRODUCTS INVENTORY GUIDELINES: TOOLS FOR IMPROVED MONITORING AND EVALUATION

LUSAKA, ZAMBIA
15-17 OCTOBER 2001

The overall objective of this expert consultation was to develop practical inventory guidelines for resources providing NWFPs, in order to assist African countries in achieving sustainable forest management.

For further information, please contact:
Mr François Ndeckere-Ziangba, Forestry Officer (NWFP), Forest Products Division, Forestry Department, FAO.
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e-mail: Francois.Ndeckere@fao.org

[Please see under Special Features for more information on this expert consultation.]

SPECIAL FOREST PRODUCTS: MUSHROOMS, MEDICINALS AND HUCKLEBERRIES

SPOKANE, WASHINGTON, USA
15-17 OCTOBER 2001

For more information, please contact:
Richard Zabel, Western Forestry and Conservation Association,
4033 SW Canyon Road, Portland, Oregon 97221, USA.
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www.westernforestry.org

PARTICIPATORY APPROACHES IN FORESTRY AND NATURAL RESOURCES DEVELOPMENT PROJECTS (PARTEF)

LOS BAÑOS, PHILIPPINES
23 OCTOBER-3 DECEMBER 2001

For more information, please contact:
The Director, Training Center for Tropical Resources and Ecosystems Sustainability (TREES), University of the Philippines Los Baños, College of Forestry and Natural Resources, College, Laguna, Philippines.
Fax: +63 49 5363340;
e-mail: trees@laguna.net

NATURE AND THE GLOBAL MARKETPLACE

LONDON, UK
24-25 OCTOBER 2001

Hosted by Forest Trends and the Katoomba Group.

For more information, please contact:
Ms Jessica Rice, Forest Trends, 1826 Jefferson Place NW, Washington, DC 20007, USA.
Fax: +1 202 2983014;

e-mail: jrice@forest-trends.org;
www.forest-trends.org

THE SECOND ROTHAMSTED INTERNATIONAL BIOMARKET. BIOPRODUCTS FROM PLANTS AND MICROBES

HARPENDEN, UK
7-9 NOVEMBER 2001

The Biomarket brought together entrepreneurial groups from around the world to help initiate successful partnerships between those who are involved in the research, development and commercialization of innovative products and services derived from plant and microbial sources.

For more information, please contact:
Rothamsted BioMarket, IACR- Rothamsted, Harpenden AL5 21Q, UK.
Fax: +44 (0)1582 760981;
e-mail: biomarket@bbsrc.ac.uk;
www.biomarket.iacr.ac.uk

WORKING LANDSCAPES IN THE MIDWEST: CREATING SUSTAINABLE FUTURES FOR AGRICULTURE, FORESTRY, AND COMMUNITIES

DELEVAN, WISCONSIN, USA
8-10 NOVEMBER 2001

A diverse group of Midwest stakeholders came together to organize a Working Landscapes Conference, which explored practices and policies that promote land-based economic activity to sustain families, communities and ecosystems, while also providing multiple benefits to society.

For more information, please contact:
Dr R. Warren Flint, Five E's Unlimited, Delaware Ave., SW, Washington, DC 20024, USA.
Fax: +1 202 4882708;
e-mail: rwflint@eeeeee.net;
www.eeeee.net;
www.SustainableDevelopmentSolutions.com

RECENT EVENTS



SECOND INTERNATIONAL TRAINING PROGRAM ON SUSTAINABLE NTFP MANAGEMENT FOR RURAL DEVELOPMENT

MADHYA PRADESH, INDIA
26 NOVEMBER-13 DECEMBER 2001

Fifteen participants from five different countries attended this three-week training course. Resource persons were drawn from accomplished community forestry practitioners as well as academia belonging to different forestry organizations within the country.

Training involved situational analysis of the NTFP management and rural development scenario (both micro and macro) and an intensive coverage of contemporary issues related to NTFP production, processing and trade. The participants were also trained in various tools and techniques for NTFP resource assessment, enterprise feasibility assessment and NTFP-based livelihood generation. During the field visits interspersed throughout the course, participants were taken to nine project sites in the temperate and the tropical forests of the country. It was here that the participants got an opportunity to test their newly acquired knowledge and skills in actual field situations.

For more information, please contact:
Dr Prodyut Bhattacharya, Faculty, Ecosystem Management and Technical Forestry, Indian Institute of Forest Management, PO Box 357, Nehru Nagar, Bhopal 462003, India.
Fax: +91 755 772878(O);
e-mail: prodyut@iifm.org
www.iifm.org

CREATING A COMMON AGENDA FOR BIODIVERSITY-CONSERVING RESOURCE USE

THOLEY-THELEY, GERMANY
9-11 DECEMBER 2001

This workshop was organized by the International Federation of Organic

Agriculture Movements (IFOAM) on behalf of the Fund for Sustainable Biodiversity Management. The workshop's objectives were to: i) create a common agenda among participating organizations; and ii) initiate one or more networks of organizations to elaborate further and implement the common agenda. Twenty-seven participants attended the workshop from Europe, North America, Africa, Asia and Latin America.

For more information, please contact:
Mr Bernward Geier, International Federation of Organic Agriculture Movements, Ökozentrum Imsbach, D-66636 Tholey-Theley, Germany.
Fax: +49 6853 919899;
e-mail: headoffice@ifoam.org

NATIVE PLANTS: PROPAGATION AND RESTORATION STRATEGIES

EUGENE, OREGON, USA
12-13 DECEMBER 2001

This meeting was cosponsored by the Nursery Technology Cooperative, Oregon State University and the Western Forestry and Conservation Association.

For more information, please contact:
Richard Zabel, Western Forestry and Conservation Association, 4033 SW Canyon Road, Portland, Oregon 97221, USA.
Fax: +1 503 2262515;
e-mail: richard@westernforestry.org;
www.westernforestry.org

PARTICIPATORY MONITORING AND EVALUATION OF BIODIVERSITY

OXFORD, UK
7-25 JANUARY 2002

The European Tropical Forestry Research Network and the Environmental Change Institute convened this workshop to take stock of existing knowledge in this field, communicate findings to decision-makers

and provide recommendations for biodiversity monitoring and evaluation which benefits rural people and national level biodiversity managers.

All stakeholders who use, manage or conserve biodiversity assess it in some way. Local people have different objectives and ways of doing this, from policy-makers and government departments responsible for commitments to the Convention on Biological Diversity. Improved understanding of each other's approaches to evaluating biodiversity can have benefits for rural communities, governments and intermediary organizations.

Participatory monitoring and evaluation of biodiversity involves different stakeholders working together to assess biodiversity, which can help scientists to support local people in managing biodiversity, or local people to contribute to national biodiversity monitoring processes.

For more information, please contact:
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e-mail: anna.lawrence@eci.ox.ac.uk;
www.eci.ox.ac.uk;
www.etfrn.org/etfrn/workshop/biodiversity/index.html

FAO/IPCC/CIFOR EXPERT MEETING ON HARMONIZING FOREST-RELATED DEFINITIONS FOR USE BY VARIOUS STAKEHOLDERS

ROME, ITALY
23-25 JANUARY 2002

FAO, jointly with the Intergovernmental Panel on Climate Change (IPCC), the Center for International Forestry Research (CIFOR) and the International Union of Forestry Research Organizations (IUFRO), organized this expert meeting to review and harmonize forest-related definitions.

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Much global or regional information on forest resources is derived from national data. FAO has therefore developed forest-related definitions for national inputs to globally aggregated forest assessments and outlook studies. The IPCC has developed forest-related definitions for use in issues common to land use, land use change and forestry and climate change. Other organizations have developed other definitions for other purposes, such as monitoring biological diversity in forests. There is a need to improve the compatibility and consistency of definitions in order to permit comparability and thus to improve the quality and usefulness of forest information, increase the synergy among organizations, and use scarce resources more effectively for information monitoring, assessment and reporting.

There is a need for globally – and regionally – aggregated information on forest resources and forest ecosystems to:

- define the concept of, and monitor progress towards sustainable forest management;
- assess the role of forests in climate change;
- assess the attributes and changes affecting forest biomes with respect to biological diversity;
- analyse the social, economic and environmental roles of forests.

The information required differs between users, but with consistent and comparable definitions it could be exchanged between different users.

The consultation:

- identified key forest-related terms whose definitions are critical to international processes;
- reviewed biome-specific forest definitions as well as those for the terms “forest degradation” and “devegetation”;
- where possible, agreed on the definitions of these key terms;
- made recommendations for consideration by relevant policy processes with respect to key definitions and their application;
- planned further steps to harmonize forest-related definitions.

For more information, please contact:
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Fax: +39 0657055618;
e-mail: wulf.killmann@fao.org

SUSTAINING LIVELIHOODS AND BIODIVERSITY IN THE NEW MILLENNIUM

PHNOM PENH, CAMBODIA
 12-15 FEBRUARY 2002

For more information, please contact:
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SECOND INTERNATIONAL WORKSHOP ON PARTICIPATORY FORESTRY IN AFRICA

ARUSHA, UNITED REPUBLIC OF TANZANIA
 18-23 FEBRUARY 2002

For more information, please contact:
Mr Dominique Reeb, FAO, Community Forestry Unit, Forestry Department, Viale delle Terme di Caracalla, 00100 Rome, Italy.
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WORKING FORESTS IN THE TROPICS: CONSERVATION THROUGH SUSTAINABLE MANAGEMENT

GAINESVILLE, FLORIDA, USA
 25-26 FEBRUARY 2002

Tropical forests sustain a wealth of biodiversity, provide a wide range of ecosystem services and products, and support livelihoods for millions of people. Tropical forest conservation is highly complex, not only because these forests perform so many different functions, but also because of the variety of stakeholders involved. Since less than 10 percent of the world’s tropical forests are

likely to be preserved as legally protected areas, conservation of the remaining 90 percent will depend on the ability of stakeholders to make the products and services these “working forests” provide appear competitive with alternative land use options.

This conference was conceived as a vehicle for identifying opportunities to make that happen, and obstacles that successful efforts will need to avoid or overcome.

For more information, please contact:
Sharon Borneman, Conference Coordinator, IFAS Office of Conferences and Institutes, University of Florida Leadership and Education Foundation, Inc., PO Box 110750, Gainesville, FL 32611-0750, USA.
Fax: +1 352 3929734;
e-mail: spborneman@mail.ifas.ufl.edu

INTERNATIONAL WORKSHOP ON SHEA PROCESSING AND TRADE ACROSS AFRICA (ATELIER INTERNATIONAL SUR LE TRAITEMENT, VALORISATION ET COMMERCE DE LA FILIÈRE KARITÉ À TRAVERS DE L’AFRIQUE)

DAKAR, SENEGAL
 4-7 MARCH 2002

The workshop was organized by FAO, with support from the Common Fund for Commodities (CFC), and in association with the Centre de suivi écologique (CSE), Dakar. The workshop brought together a variety of stakeholders in order to address critical issues of shea processing and trade in Africa. Within FAO, this was a joint undertaking by the NWFP Programme of the Forest Products Division, the Food Quality and Standards Service of the Food and Nutrition Division and the Basic Foodstuffs Service of the Commodities and Trade Division, as well as the Forestry Group from the FAO Regional Office for Africa (RAF, Accra, Ghana).



The shea butter tree *Vitellaria paradoxa* (syn. *Butryospermum paradoxum*) is a slow-growing fruit-tree which is indigenous to the Sudanic savannah of sub-Saharan Africa. The tree occurs in a narrow band of vegetation extending some 5 000 km, from Senegal in the west to Uganda and Ethiopia in the south and east of the range.

The shea tree provides an annual bounty of nutritious fruit to rural communities during the annual "hungry season". The seeds of the fruit are large kernels with a high percentage of edible oil, known as shea butter, which is a very important nutritional and economic resource for households and communities across the shea parkland savannah.

Shea as a resource has long been the domain of women farmers across the shea parkland. In traditional societies throughout the zone, women are primarily responsible for collection of shea nut, and the processing and marketing of shea butter. Women also control a significant proportion of income from the marketing of shea products – income used primarily to raise families and meet the needs of the household.



Vitellaria paradoxa

The annual yield of the shea tree varies greatly by individual and over time, depending upon factors (both genetic and environmental) which are not yet well understood. Although an estimated 70 percent of the shea kernels collected each year are consumed in the home as shea butter, a significant proportion of the "crop" is currently underutilized owing to population patterns and transport constraints, and by limited profitability to the primary producers.

The export of shea nut from West Africa constitutes a significant proportion of export earnings for some Sahelian economies; for example, it is estimated that shea butter was the third largest export from Burkina Faso throughout the 1980s. Interestingly, local prices for shea products in the eastern range of the shea zone – an area not penetrated by export of the raw material - are nearly twice as high as those in West Africa.

It is estimated that during 2000, some 610 000 tonnes of shea nut were collected across the African shea zone. Of this, approximately 65 000 tonnes were exported – mostly to Europe and Japan – and the remaining 545 000 tonnes processed locally into some 131 000 tonnes of shea butter, the vast majority of this to be consumed as food oil in the producing countries.

While the majority of exported shea nut is processed industrially for use in the food industry, particularly as a cocoa butter equivalent (CBE), the unsaponifiable fraction of shea butter gives it unique therapeutic properties as a treatment for dry or damaged skin. Cosmetic applications form a small, but high-value component of the international market for shea butter.

Traditional processing methods of shea butter extraction are very arduous, requiring significant inputs of female labour, fuelwood and water. Improved technologies for village-level or artisanal extraction of shea butter have been developed since the 1970s, with the objective of improving productivity, and increasing total yield of shea butter through greater efficiency in production.

Some recent rural development programmes have sought to improve production and marketing of shea butter by the primary producers in order to maximize the value-added economic benefits of shea processing at the local level. Complimentary to its consumption as a food oil, economic returns from the production and marketing of shea products also greatly enhance household food security, multiplying nutritional options through increased market access to cereals, pulses and livestock.

Enhanced household incomes from the living shea tree also serve as a direct economic incentive for conservation of the resource at the local level, where most management decisions affecting the environment are made. Given the threat of desertification from the steady encroachment of the Sahel across the northern border of the shea zone, the environmental importance of shea is very significant. In many areas, limited market options for shea products have resulted in wholesale cutting of the tree for production of charcoal – a short-term and low-value product that results in the permanent destruction of the shea resource.

Although the technical constraints of improved shea processing have largely been addressed, issues of product quality control greatly limit the market options of primary producers across the shea zone, and the profitability of village-level shea processing.

The shea butter currently produced by artisanal methods appropriate to the rural areas where shea nut is produced remains highly variable in terms of quality. Although major industrial importers of shea nut state that they would be happy to import more shea butter directly from African producers, persistent problems of quality control have greatly constrained progress towards this objective, and have resulted in lower prices and reduced returns to the primary producers.

Another constraining factor in the optimization of benefits to producers is the general lack of information, communication and networking between producers and other stakeholders throughout the African shea zone. Problems of language and limited access to information exacerbate a situation in which the profitability of shea does not fully benefit its primary producers. Clearly, a regular exchange of market information should be established and made accessible to shea producers across Africa, for the optimal development and long-term sustainability of this important nutritional and economic resource.

This workshop brought together a variety of stakeholders in order to address critical issues of shea processing and trade across the African shea zone.

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The workshop served the following objectives:

- to bring together all relevant information and to evaluate past experience on processing and marketing of shea nut and shea butter at the local, regional and international levels;
- to identify key constraints and potentials in processing and marketing of shea products at the local, regional and international levels;
- to formulate strategies to enhance processing, utilization and marketing of shea products in a sustainable manner, with recognition of the key role of rural women in shea production, and a focus on reinforcing producer equity through fair trade;
- to identify priority areas of intervention and to synthesize regional action plans for future research and development activities; and
- to disseminate as widely as possible the information gathered and the results produced by the workshop.

Main issues addressed during the workshop included:

- the role of research institutions, state agencies, NGOs and donors, and how their interventions can best assist small-scale producers and facilitate market access;
- the assessment, reliability and renewal of the sources of supply, including issues of management, conservation and research and development of the shea resource;
- development of improved, locally appropriate processing and storage methods and technologies and their transfer to users;
- resource and equipment requirements of rural producers, producer groups and associations;
- organization of small-scale producers, processors and traders, with emphasis on producer equity and ownership by women farmers, the primary producers of the shea resource;
- means to develop local, regional and international markets, including the development of fair trade markets;

- development and diffusion of product quality standards, and techniques of production quality control, for maximum added value in extraction and increased returns to the producer;
- opportunities for national and regional public-private partnerships; and
- networking and cooperation between institutions and individuals in producing countries in the areas of research and development, training, quality control systems, and market information.

The countries represented by workshop participants included: Benin, Burkina Faso, Cameroon, Chad, the Central African Republic, Côte d'Ivoire, Ethiopia, Ghana, Guinea, Mali, the Niger, Nigeria, Senegal, the Sudan, Togo and Uganda.

For more information, please contact:
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CAPTURING THE VALUE OF ECOSYSTEM SERVICES: DEVELOPING MARKETS FOR ENVIRONMENTAL ASSETS

LONDON, UK
 13-14 MARCH 2002

Hosted by Forest Trends and the Katoomba Group.

For more information, please contact:
Jessica Rice, Forest Trends, 1050 Potomac Street NW, Washington, DC 20007, USA.

Fax: +1 202 2983014;
e-mail: jrjice@forest-trends.org;
www.forest-trends.org;
www.katoombagroup.org

"RENEW YOUR RELATIONSHIP WITH MOTHER EARTH" – 1ST ANNUAL ABORIGINAL HERITAGE GARDEN CONFERENCE

NEW BRUNSWICK, CANADA
 18-20 MARCH 2002

Hosted by the Aboriginal Heritage Gardens the agenda combines aspects of aboriginal culture, spirituality and NTFPs.

For more information, please contact:
Mario LaPointe, Best Western Manoir Adelaide Hotel, 385 Adelaide St, Dalhousie, New Brunswick, Canada.
Fax: +1 506 6846302;
e-mail: info@aboriginalgardens.com;
www.aboriginalgardens.com/NewFiles/agenda01.html

FOREST VALUATION AND INNOVATIVE FINANCING MECHANISMS FOR CONSERVATION AND SUSTAINABLE MANAGEMENT OF TROPICAL FORESTS

THE HAGUE, THE NETHERLANDS
 20-21 MARCH 2002

Tropenbos International organized a two-day seminar to discuss myths and reality of forest values, and to support the development and implementation of appropriate financial mechanisms for the conservation and sustainable use of tropical forests.

For more information, please contact:
Jelle Maas, Information Officer, Tropenbos International, Seminar 2002, PO Box 232, 6700 AE, Wageningen, the Netherlands.
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www.tropenbos.nl ●

FORTHCOMING EVENTS



INTERNATIONAL CONFERENCE ON MEDICINAL PLANTS, INDIGENOUS KNOWLEDGE AND BENEFIT SHARING

THE HAGUE, THE NETHERLANDS
16-19 APRIL 2002

For more information, please contact:
Prof. Dr L. Jan Slikkerveer, Institute of Cultural and Social Studies & the Leiden Branch of the National Herbarium of the Netherlands, Wassenaarseweg 52, 2333AK Leiden, the Netherlands.

E-mail: Slikkerveer@fsw.leidenuniv.nl

MEDICINAL PLANTS/ HEALTH/ENVIRONMENTAL AND DEVELOPMENT AND INTERNATIONAL WORKSHOP ON SUSTAINABLE TRADE AND CONSERVATION OF MEDICINAL PLANTS RESOURCES

RABAT, MOROCCO
2-4 MAY 2002

The programme will be centred on the following themes: ethnobotany and traditional medicine; phytotherapy, aromatherapy, phytodrugs and phytofoods; technology, quality, economic and legal aspects; phytochemistry; pharmacology, toxicology, biology and biotechnology; and biodiversity, conservation of medicinal and aromatic plants resources.

For more information and to register, please visit:
www.multimania.com/congres2002pma/registration.htm



Rosmarinus officinalis

FORESTRY AND RURAL DEVELOPMENT WORKSHOP

INVERNESS, UK
18 MAY 2002

The workshop is part of the 3rd European Mountain Convention (Inverness, 16-18 May 2002) organized by Euromontana.

For more information, please contact:
Pier Carlo Zingari, Director, European Observatory of Mountain Forests (EOMF)/Observatoire européen des forêts de montagne (OEFM), Les Thermes, F-73230 Saint Jean d'Arvey, France.
Fax: +33 (0)4 79284058;
e-mail: zingari.oefm@wanadoo.fr;
www.eomf.org

THE WORLD ECOTOURISM SUMMIT

QUÉBEC, CANADA
19-22 MAY 2002



International Year of Ecotourism
2002

The United Nations has declared 2002 as the International Year of Ecotourism. The World Tourism Organization (WTO) and the United Nations Environment Programme (UNEP) have taken the lead in organizing activities for this Year at the international level. The UN declaration is a testimony of the growing importance of ecotourism, not only as a sector with a great potential for economic development – especially in remote areas where few other possibilities exist – but also as a powerful tool for conservation of the natural environment if it is properly planned, developed and managed.

Efforts to understand the implications of ecotourism better, as well as to improve its planning, management and

marketing techniques, have been conducted in many parts of the world by international organizations, government agencies, ecotourism companies and practitioners, NGOs and research people. However, there has not been so far a truly comprehensive effort to disseminate widely the results achieved, or to integrate such results so as to produce the necessary synergies that will ensure that ecotourism will indeed generate the economic, social and environmental benefits expected from it.

Among the many activities to be undertaken at the global, regional, national and local levels in the framework of the International Year of Ecotourism throughout the world, the World Ecotourism Summit aims to be the major landmark. Its global objective and spirit are in line with the philosophy of the United Nations in the field of sustainable development, and more particularly with UNEP Principles for Implementation of Sustainable Tourism. Similarly, the summit will draw inspiration from the Global Code of Ethics for Tourism, approved by consensus by all WTO member states in October 1999. The summit conclusions and recommendations are meant to be reported to the World Summit on Sustainable Development, to be held in Johannesburg, South Africa, in September 2002.

For more information, please contact:
Ecotourisme 2002 – JPD Secretariat,
51, rue d'Auteuil, Québec, Québec G1R
4C2, Canada.

Fax: +1 418 6925587;
e-mail: ecotourism2002@jpd.com;
www.world-tourism.org/sustainable/IYE-Main-Menu.htm;

or

United Nations Environment
Programme, Tourism Programme
Coordinator, Division of Technology,
Industry and Economics, Tour
Mirabeau, 39-43 – Quai André Citroën,
75739 Paris – Cedex 15, France.

Fax: +33 1 44371474;
e-mail: IYE2002@unep.fr

FORTHCOMING EVENTS



HUMAN DIMENSIONS WORKSHOP

BONN, GERMANY
3-14 JUNE 2002

The theme for the workshop will be "Human dimensions of urbanization and the transition to sustainability".

For more information, please contact:

Maarit Thiem, International Project Coordinator, International Human Dimensions Programme on Global Environmental Change, Walter-Flex-Str. 3, 53113 Bonn, Germany.

Fax: +49 228 739054;

e-mail: thiem.ihdp@uni-bonn.de;

www.uni-bonn.de/IHDP

1ST ANNUAL SUSTAINABLE FOREST MANAGEMENT SUMMIT: SCIENCE IN POLICY AND PRACTICE – SHARING SUCCESSFUL REGIONAL AND LOCAL INITIATIVES

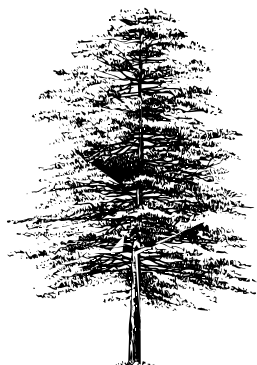
WISCONSIN, USA
17-19 JUNE 2002

For more information, please contact:

Wendy Hinrichs Sanders, Great Lakes Forest Alliance, PO Box 722, Hayward, WI 54843, USA.

E-mail: forestls@lsfa.org;

www.lsfa.org



MOUNTAIN INDIGENOUS KNOWLEDGE, SUSTAINABLE LIVELIHOODS AND CREATIVE MEANS OF RESOURCES GOVERNANCE (III MMSEA)

LIJIANG, YUNNAN, CHINA
25-28 AUGUST 2002

The conference will look at indigenous livelihoods, indigenous knowledge and creative means of local governance in our mountain areas.

For more information, please contact:

Xu Jianchu or Timmi Tillmann, Centre for Biodiversity and Indigenous Knowledge, Zhonghuandasha, Yanjiadi 650034, Kunming, China.

E-mail: cbik03@public.km.yn.cn or

xujc97@public.km.yn.cn;

www.cbik.org



SMALL FRUIT IN THE WILD AND CULTURE

KAUNAS, LITHUANIA
20-22 AUGUST 2002

The theme for the workshop will be "Human dimensions of urbanization and the transition to sustainability".

For more information, please contact:

Kaunas Botanical Garden, Z. E. Zilibero 6, LT-3018 Kaunas, Lithuania.

Fax: +370 7 390133;

e-mail: remigijusd@hotmail.com or

bs@bs.vdu.lt

WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

JOHANNESBURG, SOUTH AFRICA
26 AUGUST-4 SEPTEMBER 2002



The Johannesburg Summit 2002 – the World Summit on Sustainable Development – will bring together tens of thousands of participants, including Heads of State and Government, national delegates and leaders from NGOs, businesses and other major groups to focus the world's attention and direct action towards meeting difficult challenges, including improving people's lives and conserving our natural resources in a world that is growing in population, with ever-increasing demands for food, water, shelter, sanitation, energy, health services and economic security.

The summit will come a decade after the historic United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, which adopted Agenda 21, the blueprint for sustainable development – and spawned the conventions on climate change, biological diversity and desertification.

Background information, and the dates and venues for the preparatory meetings, as they are confirmed, can be found at the summit's Web site.

For more information, please contact:

Johannesburg Summit Secretariat, Division for Sustainable Development, United Nations Department of Economic and Social Affairs, Two United Nations Plaza, DC2-2220, New York, NY 10017, USA.

E-mail: dsd@un.org;

www.johannesburgsummit.org/

FORTHCOMING EVENTS



MANAGEMENT OF MOUNTAIN FOREST ECOSYSTEMS UNDER NEW ENVIRONMENTAL CONDITIONS

PRAGUE, CZECH REPUBLIC
1-7 SEPTEMBER 2002

For more information, please contact:
Mr Vratislav Balcar, Research Station
VULHM Opcno, Na Olive 550, 517 73
Opcno, Czech Republic.
Fax: +420 443 42393;
e-mail: balcar@vulhmop.cz

ECOLOGICAL AND ECONOMIC BENEFITS OF MOUNTAIN FORESTS

INNSBRUCK, AUSTRIA
15-18 SEPTEMBER 2002

For more information, please contact:
Robert Jandl, Federal Forest Research
Centre, Seckendorff-Gudent-Weg 8, A-
1131 Vienna, Austria.
Fax: +43 1 878381250;
e-mail: robert.jandl@fbva.bmlf.gv.at;
<http://fbva.forvie.ac.at/iym/ecology.html>

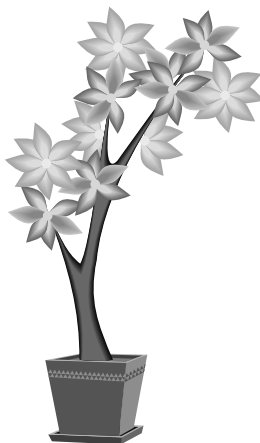


TAIGA RESCUE NETWORK AND BOREAL FOREST NETWORK 6TH BIENNIAL CONFERENCE

WINNIPEG, CANADA
20-22 SEPTEMBER 2002

The theme of this conference is "Current and future boreal forest values – conservation goals and market trends".

For more information, please contact:
Conference organizers:
Michelle Forrest and Susanne McCrea.
E-mail: info@borealnet.org;
www.borealnet.org or
www.taigarescue.org



PROTA FIRST INTERNATIONAL WORKSHOP

NAIROBI, KENYA
23-25 SEPTEMBER 2002

The workshop is being organized by the Plant Resources of Tropical Africa (PROTA) Programme, Wageningen University, the Netherlands. One of the workshop objectives is to highlight the importance of the plant resources of tropical Africa through commodity group reports, country reports and plant resources reports. Various papers are invited, including on auxiliary and medicinal plants. The workshop will be in English and French.

For more information, please contact:
PROTA Programme, Wageningen
University, PO Box 341, 6700 AH
Wageningen, the Netherlands.
E-mail: prota@pros.dpw.wag-ur.nl;
www.prota.org;
or PROTA First International Workshop,
c/o ICRAF, PO Box 30677, Nairobi,
Kenya.

[Please see under News and Notes for more information on PROTA.]

THIRD INTERNATIONAL TRAINING PROGRAMME ON SUSTAINABLE NTFP MANAGEMENT FOR RURAL DEVELOPMENT

MADHYA PRADESH, INDIA
12-27 NOVEMBER 2002



The newly established International Centre of Community Forestry (ICCF) at the Indian Institute of Forest Management (IIFM), Bhopal, has been organizing various community forestry-related training programmes regularly (see below for information on the course held in 2001). These training programmes are closely grounded on actual field experiences. The previous two programmes have attracted the participation of forestry and rural development practitioners and researchers, from various countries worldwide. This programme has been designed for enhancing knowledge and honing skills in the areas of NTFP-based livelihood generation through sustainable management of NTFPs.

The training topics, which are revised and updated every year, will involve situational analysis of the NTFP management and rural development scenario (both micro and macro) and an intensive coverage of contemporary issues related to NTFP production, processing and trade. The participants would also be trained in tools and techniques for NTFP resource assessment, enterprise feasibility assessment and NTFP-based livelihood generation. During the field visits, interspersed throughout the course, the participants will get ample opportunity to test their newly acquired knowledge and skills in actual field situations.

For more information, please contact:
Dr Prodyut Bhattacharya, Course
Director, Indian Institute of Forest

FORTHCOMING EVENTS



Management, Nehru Nagar, PO Box 357; Bhopal-462003, Madhya Pradesh, India.

E-mail: prodyut@iifm.org;
www.iifm.org



PRIMER CONGRESO LATINOAMERICANO DE HERBOLARIA Y SEGUNDO CONGRESO NACIONAL DE PLANTAS MEDICINALES DE MÉXICO

GUADALAJARA, JALISCO, MÉXICO
21 A 24 DE NOVIEMBRE DE 2002

El Congreso Latinoamericano de Herbolaria y el Segundo Congreso Nacional de Plantas Medicinales de México se han propuesto como objetivos generales:

- Ser el principal foro latinoamericano que promueva la cooperación, el intercambio y la difusión de investigaciones, tecnologías y experiencias entre los distintos actores sociales vinculados con la herbolaria, las terapias naturales y la medicina tradicional con el fin de rescatar, conservar, revalorizar y aprovechar sustentablemente las plantas medicinales y sus derivados.
- Servir como espacio abierto generador y multiplicador de ideas, propuestas, políticas, experiencias y acciones en torno a la conservación ecológica, la etnobotánica, el manejo sustentable, la investigación de campo y laboratorio, el control de calidad, la certificación, la bioprospección, el derecho de propiedad intelectual de

las comunidades rurales e indígenas, el cultivo orgánico, la normatividad, la transformación, el comercio justo y todos aquellos aspectos vinculados con los recursos terapéuticos herbolarios.

Para más información, dirigirse a:
Josefina Morfín López, Presidenta del Comité Organizador del Primer Congreso Latinoamericano de Herbolaria y Primera ExpoNaturalia Latinoamericana 2002, Calle La Calma, 60, Colonia Las Fuentes, C.P. 45070, Guadalajara, Jal., México.
Fax: +52 3 6312286;
correos electrónicos: cidnat@att.net.mx, conciencia@att.net.mx;
o **Miguel Angel Gutiérrez Domínguez, Vicepresidente del Comité Organizador del Primer Congreso Latinoamericano de Herbolaria y Primera ExpoNaturalia Latinoamericana 2002, Universidad Autónoma de Tlaxcala, Secretaría de Investigación Científica, Jardín Botánico Universitario, Av. Universidad N° 1, C.P. 90070 Tlaxcala, Tlax., México.**
Fax: +52 246 28996;
correos electrónicos:
redmexplam@uol.com.mx y
redcomerciohierbas@yahoo.com.mx;
sitio Internet del Primer Congreso Latinoamericano de Herbolaria:
www.laneta.apc.org/nuevaneta/info/morinfo.php3

THE NAMCHE CONFERENCE: PEOPLE, PARK AND MOUNTAIN ECOTOURISM AT NAMCHE BAZAAR

KHUMBU, NEPAL
5-8 DECEMBER 2002

Presentations and workshops will cover a range of topics, according to participants' interests. Special attention will be given to the role of parks in mountain ecotourism.

For more information, please contact:
Seth Sicroff, Director, Bridges: Projects in Rational Tourism Development.

E-mail: bridges-prtd@lycos.com or
namche@bridges-prtd.com;
www.bridges-prtd.com



THE 3RD WORLD CONGRESS ON MEDICINAL AND AROMATIC PLANTS FOR HUMAN WELFARE (WOCMAP III)

CHIANG MAI, THAILAND
3-7 FEBRUARY 2003

The theme of WOCMAP III is "From biodiversity through science and technology, trade and industry to sustainable use". This congress will provide a forum for international cooperation among people in all disciplines that involve medicinal and aromatic plants, bringing together experts in medicinal and aromatic plants from around the world.

The congress programme will include plenary sessions, invited lectures, oral and poster presentations, a commercial exhibition (EXPOMAP) and excursions in and around Chiang Mai and Bangkok as well as neighbouring countries.

Early registration should be made by 31 July 2002.

For more information and to obtain a copy of the pre-registration form, please contact:
Congress Secretariat WOCMAP-III, Department of Biology, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand.
Fax: +66 53 944934;
e-mail: WOCMAP3@yahoo.com



**ALL DIVISION
5 IUFRO CONFERENCE
"FOREST PRODUCTS
RESEARCH – PROVIDING
FOR SUSTAINABLE
CHOICES"**

ROTORUA, NEW ZEALAND
11-15 MARCH 2003

This conference, which is being organized by the International Union of Forest Research Organizations (IUFRO), will serve as a forum for the exchange of knowledge and experience in forest products research at the national and international levels. Participants will discuss recent research progress, exchange information and collaborate on research related to the conference theme of "Forest products research – providing for sustainable choices".

Discussion will consider scientific progress towards meeting the rapidly increasing demands for forest products of all kinds, while maintaining the forest as the source of such products and a resource for the social, economic and environmental benefits.

This conference includes a session on NWFPs under the IUFRO Group 5.11 chaired by Dr Jim Chamberlain. The session will be focused on "Research needs for sustainable management of non wood forest products".

For more information, please contact:
Dr Jim Chamberlain, NTFP Products
Research Technologist, US Forest
Service, Southern Research Station;
Coordinator, IUFRO Research Group
5.11 (Non-wood Forest Products), 1650
Ramble Road, Blacksburg, VA 24061,
USA.
Fax: +1 540 2311383,
e-mail jachambe@vt.edu;
www.sfp.forprod.vt.edu;
or
Conference Secretariat:
Fax: +64 7 3435507;
e-mail:
alldiv5iufronz@forestresearch.co.nz

**XII WORLD FORESTRY CONGRESS
QUÉBEC, CANADA
21-28 SEPTEMBER 2003**



The World Forestry Congress (WFC) is the largest, most important international gathering of key players in the forestry sector. Organized under the aegis of FAO, the congress takes place every six years. It is a forum for exchanging a wide range of views, where ideas and actions having a direct impact on forests and on forest management can be presented and discussed so that practical solutions can be found. Overall, the discussions are intended to bring together the breadth of knowledge, experiences and approaches from around the world to guide forest policy, practices, research and international cooperation. In addition to regular working sessions, the congress will showcase the latest advances in forestry.

The World Forestry Congress is not a meeting of officials representing governments and organizations. Rather, participants

attend in their personal capacity to express their own views. For this reason, its role is consultative rather than executive.

The WFC Theme "Forests, source of life" is of much relevance to the topic of non wood forest products and promises to inspire a rich debate on the role of edible NWFPs to food security and poverty alleviation. The FAO NWFP Programme is looking forward to a wide range of papers being submitted to the WFC emphasizing the important socio-economic contribution of NWFPs towards sustainable development.

Forests have sustained life on earth since time immemorial, providing a range of essential goods and services such as food, shelter, energy, wood, soil and water conservation, wildlife habitat, income generation, cultural identity and spiritual well-being. Thus, it is not surprising that one of today's greatest challenges is finding ways to balance and reconcile conflicting and increasing demands from those who depend on one aspect or another for their survival and development.

For more information, please contact:
World Forestry Congress 2003,
800, Place d'Youville, 18e étage,
Québec, Québec G1R 3P4,
Canada.
Fax: +1 418 6949922;
e-mail: sec-gen@cfm2003.org or
sec-gen@wfc2003.org;
www.wfc.2003.org ●

PUBLICATIONS OF INTEREST



- Al-Douri, N.A.** 2000. A survey of medicinal plants and their traditional uses in Iraq. *Pharmaceutical Biology*, 38(1): 74-79.
- Amatya, Swoyambhu Man, ed.** 2000. *Proceedings of the Third Regional Workshop on "Community-Based NTFP Management"*. (For more information, contact: Dr Swoyambhu Man Amatya, Director-General, Department of Forest Research and Survey, PO Box 339, Babar Mahal, Kathmandu, Nepal; fax: +977 1 220159; e-mail: foesc@wlink.com.np)
- Anderson, P.N.** 2001. Community-based conservation and social change amongst south Indian honey-hunters: an anthropological perspective. *Oryx*, 35(1): 81-83.
- Anon.** 2001. Open to plunder. Smuggling is stripping India of rare medicinal plants. *Down to Earth*, (January): 28-41.
- Anwar, R., Haq, N. & Masood, S.** 2001. *Medicinal plants of Pakistan*. Southampton, UK, International Centre for Underutilised Crops. ISBN 085-432-739-8.
- Backes, M.M.** 2001. The role of indigenous trees for the conservation of biocultural diversity in traditional agroforestry land use systems: the Bungoma case study: in-situ conservation of indigenous tree species. *Agroforestry Syst.*, 52(2): 119-132.
- Baker, N., ed.** 2001. *Developing Needs-Based Inventory Methods for Non-Timber Forest Products Application and Development of Current Research to Identify Practical Solutions for Developing Countries*. Proceedings of an ETFRN workshop which was held with and at FAO in May 2000 and was funded by the DFID Forest Research Programme. (Copies of this ETFRN publication are available from: European Tropical Forest Research Network [ETFRN], Coordination Unit, c/o The Tropenbos Foundation, PO Box 232, 6700 AE Wageningen, the Netherlands; fax: +31 317 495521; e-mail: etfrn@iac.agro.nl; www.etfrn.org/etfrn; www.etfrn.org/etfrn/workshop/ntfp/downloadreport.html)
- Berg, J. van den, Dijk, H. van, Dkamela, G.P., Ebene, Y. & Ntenwu, T.** 2001. The role and dynamics of community institutions in the management of NTFPs in Cameroon. *ETFRN News*, 32: 77-79.
- Bhatia, A., ed.** 2001. *Himawanti – Women of the Hindu Kush-Himalayas*. Kathmandu, International Centre for Integrated Mountain Development. 76 pp. ISBN 92-9115-412-1. Himawanti is a remarkable organization, a network of grassroots women from across the Hindu-Kush Himalayas concerned with the protection and development of natural resources such as forest, land and water. In October 1999, after years of planning and preparation, Himawanti succeeded in bringing together more than 200 women from the region for a regional workshop. The aim was to provide a forum for grassroots women to share experiences and evolve strategies, and to strengthen communication and alliances, among the rural women who are actually involved in conserving and managing natural resources. The situation of the women, their needs, the challenges they face, and how they are campaigning for change, were discussed at length in the supportive atmosphere of the workshop. The main themes are presented in this book in a visually stimulating form in three languages (English, Hindi, Urdu). (For more information, contact: ICOD/ICIMOD, POB 3226, Kathmandu, Nepal; e-mail: distri@icimod.org.np; www.icimod.org)
- Cadamuro, L.** 2000. *Plantes comestibles de Guyane*. Écocart éditions.
- Caspary, H.-U., Koné, I., Prouot, C. & Pauw, M. de.** 2001. *La chasse et la filière viande de brousse dans l'espace Taï, Côte d'Ivoire*. Tropenbos Côte d'Ivoire Série 2. Wageningen, Pays-Bas, Tropenbos International. ISBN 90-5113-148-1. €20.
- Davidson-Hunt, I, Duchesne, L.C. & Zasada, J.C., eds.** 2001. *Forest communities in the third millennium: linking research, business, and policy toward a sustainable non-timber forest product sector*. Proceedings of the meeting, 1-4 October 1999, Kenora, Ontario, Canada. General Technical Report NC-217. St. Paul, MN, US Department of Agriculture, Forest Service, North Central Research Station. 151 pp. The publication contains a wide variety of papers given at the first international conference on NTFPs in cold temperate and boreal forests. It focuses on many facets of NTFPs: economics, society, traditional ecological knowledge, biology, resource management and business development. (An electronic version of the proceedings can be viewed and downloaded from: www.ncrs.fs.fed.us/kstore.htm. Hard copy versions of the book are available free of charge from: Publications Distribution Center, North Central Research Station, United States Department of Agriculture, Forest Service, 1 Gifford Pinchot Drive, Madison, WI 53705, USA; or Tim Swedberg, Media and Public Relations, North Central Research Station, 1992 Folwell Ave., St. Paul, MN 55108, USA; fax: +1 651 6495285; e-mail: tswedberg@fs.fed.us)
- Demmer, J. & Overman, H.** 2001. *Indigenous people conserving the rain forest? The effect of wealth and markets on the economic behaviour of Tawahka Amerindians in Honduras*. Tropenbos Series 19. Wageningen, the Netherlands, Tropenbos International. ISBN 90-5113-053-8.

PUBLICATIONS OF INTEREST



- Dkamela, G.P.** 2001. *Les institutions communautaires de gestion de produits forestiers non-ligneux dans les villages périphériques de la Réserve de Biosphère du Dja*. Tropenbos-Cameroon Documents 7. Tropenbos-Cameroon Programme, Kribi, Cameroon.
- Duivenvoorden, J.F., ed.** 2001. *Evaluación de recursos vegetales no maderables en la Amazonía noroccidental*. IBED, Universidad de Amsterdam, Países Bajos.
- Emery, M. & McLain, R.J., eds.** 2001. *Non-timber forest products: medicinal herbs, fungi, edible fruits and nuts, and other natural products from the forest*. Binghamton, NY, Haworth Press. 176 pp. \$29.95. (www.HaworthPressInc.com/store/product.asp?sku=4487)
- Evans, T.D. & Viengkham, O.V.** 2001. Inventory time-cost and statistical power: a case study of a Lao rattan. *Forest Ecology and Management*, 150: 313-322.
- Evans, T.D., Sengdala, K., Viengkham, O.V. & Thammavong, B.** 2001. *A field guide to the Rattans of Lao P.R.* Scientific Publications Department, Royal Botanic Gardens, Kew, United Kingdom. Rattans contribute greatly to the Lao economy by producing flexible canes and edible shoots, which are used within country or exported. This book is intended to support their improved management. (For more information, contact: Royal Botanic Gardens, Kew, Surrey TW9 3AB, UK; fax: +44 (0)20 83325197; www.rbgekew.org.uk)
- FAO.** 2001. *Global Forest Resources Assessment 2000 (FRA 2000)*. FAO's Global Forest Resources Assessment 2000 (FRA 2000) is available online (www.fao.org/forestry/fo/fra/main/index.jsp)
- FAO.** 2001. *State of the world's forests*. Food and Agriculture Organization of the United Nations, Rome. ISBN 92-5-104590-9. The fourth edition of the *State of the world's forests* (SOFO), FAO's biennial report providing reliable and up-to-date information on the status of forests and developments in the forest sector worldwide, has been released in Arabic, Chinese, English, French and Spanish. Subjects covered in the report include forest cover and condition; management, conservation and sustainable development of forest resources; forest goods and services; the institutional framework for forestry; and international dialogue. Six comprehensive annex tables give basic country information (land area, population, economic indicators) and the latest data by country on forest cover; change in forest cover; forest management; production, trade and consumption of forest products; and participation in international conventions and agreements. (Printed copies of SOFO are available through FAO's Sales and Marketing Group [publications-sales@fao.org]. SOFO is also available electronically on the Internet [www.fao.org/forestry/fo/sofo/sofo-e.stm]. For more information, contact: Publications and Information Coordinator, Forestry Department, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy; fax: +39 0657052151; e-mail: forestry-information@fao.org)
- FAO.** 2001. *Resource base assessment, current uses and management potential of bamboo in Manicaland Province (Nyanga, Mutasa & Mutare districts) of Zimbabwe*. Harare, Zimbabwe, FAO. Published by the FAO Subregional Office for East and Southern Africa in Harare, Zimbabwe, this study focuses on the assessment and the management potential of bamboo species in the Eastern Highlands of Zimbabwe. It was conducted in three stages: 1. gathering information on bamboo species found in Zimbabwe, their distribution and present and potential uses; 2. carrying out a resource base assessment by estimating the quantity and size of bamboo reeds growing in the study area; 3. exploring current uses of bamboo in the survey area and opportunities of extending the management of bamboo into integrated agroforestry systems, small- and large-scale commercial farming, environmental rehabilitation, ecotourism, food security and income-generating bamboo projects. (To obtain a copy of the report or for more information, contact: Michel Laverdiere, Forest Conservation Officer, Subregional Office for Southern and East Africa [SAFR], PO Box 3730, Harare, Zimbabwe; fax: +263 4 703497; e-mail: michel.laverdiere@fao.org)
- Gunasena, H.P.M. & Hughes, A.** 2000. *Tamarind*. Southampton, UK, International Centre for Underutilised Crops. A monograph on tamarind (*Tamarindus indica* L.), published by the International Centre for Underutilised Crops, is an output from a research project funded by the United Kingdom Department for International Development (DFID) (For a free copy of this monograph, contact the International Centre for Underutilised Crops; e-mail: haq@soton.ac.uk)
- Ha Chu Chu.** 2001. Situation of non-wood forest products production and utilization in Vietnam. In *Proceedings on the International Seminar on Non-Timber Forest Products, China-Yunnan, Laos and Vietnam*. Yunnan University Press. ISBN 7-81068-27-7.
- Hall & Yun.** 2000. Edible mushrooms as secondary crops in forests. *Quarterly J. Forestry*, 94: 299-304.
- Helbingen, A.J. Bojanic.** 2001. *Balance is beautiful: assessing sustainable development in the rain forests of the Bolivian Amazon*. PROMAB Scientific Series 4. ISBN 90-393-2757-2.

PUBLICATIONS OF INTEREST



- Jiaquan, C.** 2001. Survey on NTFPs border trade between China and Vietnam, and China and Laos in Jiangcheng County, Simao Prefecture, and Mengla County, Xishuangbanna Prefecture. In *Proceedings of the International Seminar on Non-Timber Forest Products, China-Yunnan, Laos and Vietnam*. Yunnan University Press. ISBN 7-81068-27-7.
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van Rijsoort, J. & He Pikun. 2001. *Proceedings of the International Seminar on Non-Timber Forest Products, China-Yunnan, Laos and Vietnam*. The proceedings are published by the Forest Conservation and Community Development Project (FCCDP), a Chinese-Netherlands-funded project in Yunnan, China. In December 2000, the project organized an international seminar together with two other Netherlands-funded projects in Viet Nam and the Lao People's Democratic Republic, respectively, on "The role of non-timber forest products (NTFPs) in forest conservation and community development". It was the first time such a regional seminar on this specific issue was held with the three countries bordering Yunnan – China, Viet Nam and the Lao People's Democratic Republic. During the seminar, the participants exchanged ideas and experiences on issues related to NTFPs and forest conservation, community development and marketing and processing. This resulted in a better understanding between the three countries about the

various aspects of NTFP conservation and development and set the stage for future information exchange and sharing in the region. The proceedings present a clear overview of lessons learnt, similarities and differences in the region, possibilities for future collaboration, as well as various interesting papers from the participants of the three countries. (For more information, contact: Jeannette van Rijsoort, Forest Conservation and Community Development Project [FCCDP], Simao Forestry Department, Zhen Xing Lu 48, 665000 Simao City, Yunnan, China; tel./fax: +86 879 2144046; e-mail: rijsoort@public.km.yn.cn)

van Valkenburg, J.L.C.H. & Bunyaphatsara, N., eds. 2001. *Plant resources of South-East Asia No. 12(2). Medicinal and poisonous plants 2*. Leiden, the Netherlands, Backhuys Publishers. 782 pp. *Plant Resources of South-East Asia (PROSEA)* is a multivolume handbook that aims to summarize knowledge about useful plants for workers in education, research, extension and industry. This second of the three planned volumes on the medicinal and poisonous plants of Southeast Asia presents a mixture of species with a longstanding reputation in traditional medicine and species that have been well investigated phytochemically or pharmacologically, but are poorly known in the Southeast Asian region. Up-to-date information is provided concerning local knowledge as well as modern research findings, where possible. The alphabetical treatment of genera and species comprises 171 papers. The hardcover edition is distributed by Backhuys Publishers, PO Box 321, 2300 AH Leiden, the Netherlands, priced _159. A paperback edition will be available as of December 2003, priced _68. For developing countries, a cheaper paperback edition (ISBN 979-8316-43-6) will be available in 2002 from the PROSEA Network Office, PO Box 332, Bogor 16122,

PUBLICATIONS OF INTEREST



Indonesia. (For more information, contact: Dr J.S. Siemonsma, Head Publication Office, PROSEA, Wageningen Agricultural University, PO Box 341, 6700 AH Wageningen, the Netherlands; fax: +31 317 482206; e-mail: prosea@pros.agro.wau.nl)
[Please see under News and Notes for more information on PROSEA.]

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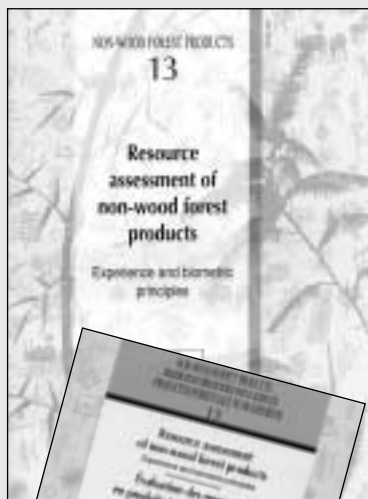
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NEW PUBLICATIONS IN THE FAO NON-WOOD FOREST PRODUCTS SERIES

NO. 13. RESOURCE ASSESSMENT OF NON-WOOD FOREST PRODUCTS. EXPERIENCE AND BIOMETRIC PRINCIPLES

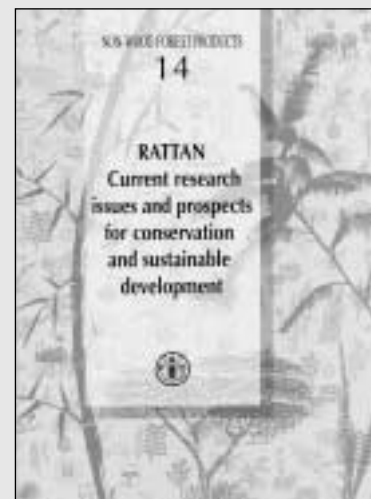


This publication is also available in French (*Évaluation des ressources en produits forestiers non ligneux. Expérience et principes de biométrie*) and Spanish (*Evaluación de los recursos de productos forestales no madereros. Experiencia y principios biométricos*) and is accompanied by a trilingual CD-ROM.

This publication is also available online at the following address:
www.fao.org/docrep/003/y1457e/y1457e00.htm (English)
www.fao.org/docrep/003/y1457f/y1457f00.htm (French)
www.fao.org/docrep/003/y1457s/y1457s00.htm (Spanish)

For more information, please contact: François Ndeckere-Ziangba, FAO NWFP Programme.
E-mail: francois.ndeckere@fao.org

NO. 14: RATTAN. CURRENT RESEARCH ISSUES AND PROSPECTS FOR CONSERVATION AND SUSTAINABLE DEVELOPMENT



Despite the fact that rattan is an important commodity for international trade and that, at the local level, it is of critical relevance in improving rural livelihoods, the supply of rattan still comes from cutting palms in natural forests. Nowadays, rattan resources in their natural range of tropical forests are being depleted through overexploitation, inadequate replenishment, poor forest management and loss of forest habitats. Against this background, Non-Wood Forest Products Series No. 14, was recently published and contains the proceedings of a joint FAO/INBAR International Expert Consultation on Rattan, held in Rome in December 2000. This publication is also available online at the following address: www.fao.org/docrep/003/y2783e/y2783e00.htm

For more information, please contact: Paul Vantomme, FAO NWFP Programme.
E-mail: paul.vantomme@fao.org



NEW WORKING PAPERS FROM THE FAO NWFP PROGRAMME

The following two new working papers have been produced by the FAO Non-Wood Forest Products Programme. A third volume covering the Caribbean countries is under preparation.

FOPW/01/1 *Non-wood forest products in Africa: a regional and national overview/Les produits forestiers non ligneux en Afrique: un aperçu régional et national*
The electronic version is available on the FAO home page at: www.fao.org/docrep/003/y1515b/y1515b00.htm

FOPW/01/2 *Non-wood forest products in the Near East: a regional and national overview*

The electronic version will be available on the FAO NWFP home page shortly.

Country information is also available on the FAO home page at: www.fao.org/forestry/fo/country/nav_world.jsp.

Printed copies of both publications are available from the FAO NWFP Programme (non-wood-news@fao.org). [Please see under *International Action – FAO for more detailed information of these regional studies.*]

OTHER RECENT PUBLICATIONS

Harvesting of Non-Wood Forest Products – seminar proceedings

The proceedings of the seminar on Harvesting of Non-Wood Forest Products were recently printed by the Turkish Ministry of Forestry. This seminar was held from 2 to 8 October 2000 in Menemen-Izmir, Turkey at the invitation of the Ministry of Forestry and under the auspices of the Joint FAO/ECE/ILO Committee on Forest Technology, Management and Training. The seminar, which was attended by participants from 32 countries, covered a wide range of topics, from inventory to marketing. The 41 papers are presented in the language provided by their authors (mostly English) with summaries in the other two languages of the seminar (French and Russian) for most of the papers.

For a copy of the proceedings, please contact:

Forest Products Division, Forestry Department, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy.
Fax: +39 0657055618;
e-mail: non-wood-news@fao.org;
www.fao.org/forestry/fop/foph/harvest/turkey/turkey-e.stm

Development Bookshop Online
ITDG Publishing, the publishing arm of the Intermediate Technology Development Group, and a leading publisher of books on development issues, has recently launched the Development Bookshop Online. This new bookshop allows you to use the Internet to search their database of key development books, make secure online orders, and browse bargain and best-seller lists.
www.developmentbookshop.com

Estándar para la certificación del manejo forestal con fines de producción de castaña (Bertholletia excelsa) en el Perú
La producción e impresión de esta publicación ha sido financiada por el proyecto «Conservando castañales», una iniciativa de la Asociación para la Conservación de la Cuenca Amazónica (ACCA), que viene trabajando desde 1997 en la validación y promoción del mejor manejo de los bosques naturales de castaña de Madre de Dios (Perú) para el beneficio de la población local y la conservación de los bosques.

Este gran esfuerzo ha resultado en el primer estándar de certificación reconocido por el Forest Stewardship Council (FSC) para el manejo de un producto forestal no maderable a nivel mundial. Así mismo, está dirigido a pequeños productores forestales de los bosques amazónicos, demostrando así que los principios y criterios de manejo responsable del FSC son adaptables a algunas de las más complejas condiciones de manejo forestal.

Para más información, dirigirse a:
Proyecto «Conservando castañales»,
Asociación para la Conservación de la Cuenca Amazónica (ACCA), Jr. Cuzco

N° 499, Puerto Maldonado, Madre de Dios, Perú.

Fax: +51 84 573211;
correo electrónico:
castanha@terra.com.pe

Extractivism in Amazonia

The book *La forêt en jeu: l'extractivisme en Amazonie centrale* (Emperaire, L. (org.), Paris, Orstom/Unesco, 1996) was published in 2000 in Portuguese under the title *A floresta em jogo: o extrativismo na Amazônia central* (Emperaire, L., org., São Paulo, Editora da Unesp/Imprensa Oficial do Estado, 232 p. 2000),

Often decried and presented as an outdated activity incapable of progress, extractivism might today be nothing more than an obsolete testimony to one of the numerous economic cycles that Brazil has experienced. But the political movements of the *seringueiros*, whose demands are supported by various institutions, and a public opinion sensitive to ecological problems have placed this ancient activity at the centre of discussions concerning the management of the Amazonian forest.

The purpose of this publication is not to present an exhaustive analysis of the many aspects of this activity but simply to suggest some themes for reflection and research on the subject. The articles fall into four groups dealing respectively with: extractivism in the historical context of the occupation of Amazonia, the numerous ways in which this activity is integrated in the systems of production, the ecological aspects of the exploitation of different species, and current tendencies.

For more information, please contact:

Laure Emperaire, IRD (ex-Orstom),
Centro de Desenvolvimento Sustentável,
UnB: SAS, Quadra 05 Bloco H 2º andar,
Ed. Superintendência do IBAMA, 70070-914 Brasília, DF, Brazil.
Fax: +55 61 3228473;
e-mail: emperair@uol.com.br

Proceedings of the Trees for Arid Lands Workshop

The Trees for Arid Lands Workshop, organized by IPALAC, took place in Israel in November 2000.

PUBLICATIONS OF INTEREST



For more information, please contact:
**Mr Arnie Schlissel, Administrative
 Coordinator, International Program for
 Arid Land Crops (IPALAC), PO Box 653,
 Beer Sheva 84105, Israel.**
E-mail: ipalac@bgumail.bgu.ac.il

*Special Forest Products Species
 Information Guide for the Pacific
 Northwest*

This United States Forest Service publication (PNW GTR-513) is accessible as a pdf file on the Forest Service Web site (www.fs.fed.us/pnw/pubs/gtr513).

For more information, please contact:
**Diane Smith, Publications, PNW
 Research Station, PO Box 3890, Portland,
 OR 97208, USA.**
E-mail: DESmith@fs.fed.us

*Sustaining Incomes from Non Timber
 Forest Products*

Sustaining Incomes from Non Timber Forest Products: special issue of the *International Tree Crops Journal*, Vol. 10, No. 4. 2000. United Kingdom, AB Academic Publishers. (Free copies of this issue may be requested at: n.sabarniati@cgjar.org)

A team of researchers affiliated with CIFOR examines the problems of sustaining incomes from NTFPs, once they have reached some degree of commercialization.

Papers include those by Oliver Braedt of Germany and Wavell Standa of Zimbabwe who spent many days talking to woodcarvers in Zimbabwe. In their paper, they note that for the country's approximately 4 000 woodcarvers to stay in business, they must keep finding sources of wood for their sculptures. This suggests the need to control harvesting of the few valuable hardwood species still available in the area's miombo woodlands, and to find alternative species suitable for carving the popular wooden hippos, rhinos and buffaloes. Braedt and Standa conclude that to make the woodcarving industry in Zimbabwe sustainable, an important first step is for the government to recognize woodcarving officially as a legitimate industry.

For Brazil nut collectors in northern Bolivia, the problem of ensuring stable or increasing incomes is slightly different, according to Dietmar Stoian of Germany and Arienne Henkemans of the Netherlands. About 25 000 people – half of the region's labour force – are employed in the local Brazil nut industry, which brings about US\$30 million per year to the region from international sales. Forest estates and processors control the industry, taking thousands of collectors to remote corners in the forest to collect the nuts from December to February. The collectors' incomes fluctuate, sometimes dramatically, depending on the price of Brazil nuts in international markets and how much factory owners can sell.

Solutions to problems such as these are never simple. In his paper, Jobst Schroeder of Germany describes how a French company had a monopoly on the trading of *Prunus africana*, an African tree harvested for its medicinal bark. The company worked to make sure the bark was harvested without damaging the tree. But high demand for the bark lured many outsiders to the trade, and although local villagers are benefiting, Schroeder predicts that the current intensive and often less careful harvesting practices will soon deplete the area's tree stock.

While forest product trade is important to many rural communities, a team of Zimbabwe researchers led by Bruce Campbell argues that rather than seeking primarily to stabilize or increase income from a single resource, it is advisable to consider the broader range of income-generating activities in an area and how they can be balanced to meet local livelihood needs. (Contributed by: Wil de Jong; e-mail: w.de-jong@cgjar.org)

*The Overstory Book: cultivating connections
 with trees*

A printed and formatted version of *The Overstory* journal editions 1-75 is now available. Proceeds from the sale of *The Overstory Book* will be used to cover the expense of publishing *The Overstory* journal, which has been provided cost-free since March 1998.

For more information, please contact:
Craig Elevitch, Editor, The Overstory,

**Permanent Agriculture Resources, PO
 Box 428, Holualoa, Hawaii 96725, USA.**
Fax: +1 808 3244129;
e-mail: overstory@agroforester.com;
www.overstory.com; or
order online at: www.agroforester.com/overstory/ovbook.html

Trouble in the Taiga

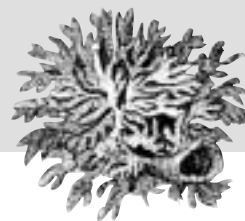
Trouble in the Taiga is a recent brochure produced by the Taiga Rescue Network and provides a general overview of the boreal region and the issues facing it and its people.

For more information, please contact:
**Elisa Peter and Ola Larsson,
 International Coordination Centre, Taiga
 Rescue Network, Box 116, S-96223
 Jokkmokk, Sweden.**
E-mail: info@taigarescue.org;
www.taigarescue.org

*Valuing trees, woodlands and forests:
 uncovering the hidden harvest: valuation
 methods for woodland and forest
 resources.* Edited by Bruce Campbell and Marty Luckert.

In press, London, Earthscan. Local biological resources are of vital importance to people in many parts of the world, and the valuation of such resources is an essential part of developing sustainable harvest and use. This practical manual describes a range of methods that can be used in the valuation of woodland and forest resources in developing countries. With contributions from economists, ecologists and sociologists, it provides an overview of these methods and approaches, pointing out the advantages and problems, and also the increasing importance of an interdisciplinary perspective. The non-technical style makes the book accessible to practitioners from a wide range of disciplines, as well as to researchers and students.

For more information, please contact:
**Enquiries: Earthscan, 120 Pentonville
 Road, London N1 9JN, UK.**
Fax: +44 (0)171 2781142;
e-mail: earthinfo@earthscan.co.uk ●



FAO

The **FO-Publications** page of FAO Forestry Department's Web site has been updated and changed. The site is available in three languages, although all document titles are not translated, since the entire publication content is being updated. A new e-mail address has been introduced for ordering Forestry Department publications (FO-publications@fao.org). Mail arriving at this address is read by the staff of the Forestry Library, who also take care of the distribution of requested documents. Please note, however, the contact address for priced publications (Publications-Sales@fao.org).

www.fao.org/forestry/foris/index.jsp?start_id=4668

The **FO-Databases** page has also been changed. Under each database entry a brief explanation is given of its content.

www.fao.org/forestry/foris/index.jsp?start_id=4029

Forestry story online

The Web story "Forestry forum spotlights poverty alleviation" is available now on the FAO Web page. It can be accessed from the FAO front page or by clicking on:

For Arabic: www1.fao.org/ar-iso/news/2001/010906-a.htm

For English: www.fao.org/news/2001/010906-e.htm

For French: www.fao.org/nouvelle/2001/010906-f.htm

For Spanish: www.fao.org/noticias/2001/010906-s.htm

Amazonia Web site

The site is an attempt to orient the surfer to the various "worlds" that exist in the Amazon.

www.amazonia.org.br/ingles/

BorNet

A group of scientists has initiated an international effort called BorNet to strengthen the scientific basis for maintaining boreal forest biodiversity. BorNet aims to: understand the human footprint on the boreal; inform the setting of nature conservation targets; find indicator species; analyse habitat loss; and enhance communication between scientists and foresters.

www.bornet.org

Certified Forest Products Council (CFPC)

CFPC's mission is to conserve, protect and restore the world's forests by promoting responsible forest product buying practices throughout North America.

www.certifiedwood.org/

Certified Wood Products

The purpose of this site is to act primarily as a clearinghouse for information on the certified forest products marketplace and certification, with a secondary emphasis on issues surrounding sustainable forest management and sustainability in general.

www.certwdmkt.com

Chile Forestal Negocios

www.chileforestal.com/index_5.htm

Databases

American Indian ethnology database

This is an electronic database containing food, drug, dye, fibre and other plants used by native North American peoples (a total of more than 47 000 items); 291 Native American groups and 3 895 species from 243 different plant families are represented.

www.umd.umich.edu/cgi-bin/herb



FSC database

Forest Stewardship Council (FSC) certificates are now listed on the Internet via a new database developed by the Certified Forest Product Council in the United States. North American product information is already available and in the future the database will also include information on Europe.

www.certifiedwood.org

ICIMOD library database

The entire International Centre for Integrated Mountain Development (ICIMOD) Library database is now available online.

www.icimod.org.np/library

New US non-timber forest product database

This database currently lists 857 commercial and non-commercial non-timber forest product species and is intended to help in the identification, development and conservation of NTFP species. You can search by scientific name, common names, product use, parts used, state range and distribution, and whether or not it is known to be commercially harvested.

<http://ifcae.org/ntfp/>

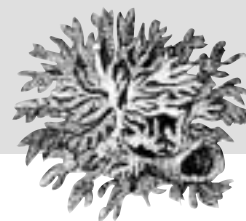
In addition to the product database, the US NTFP Web site has a searchable bibliographic database and Internet links database.

For more information, please contact:

**Eric T Jones, Partner, Institute for Culture and Ecology (501c3),
PO Box 6688, Portland, Oregon 97228-6688, USA. www.ifcae.org**

The SANREM West Africa annotated bibliographical database

The Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program (SANREM CRSP), funded by USAID, has announced the West



Africa Annotated Bibliographical Database. This database is hosted on SANREM West Africa Project's (SANREM WA) home page and is a vital multidisciplinary resource for those concerned with the holistic goal of food security and development in the West African Sahel.

This specialized annotated bibliographical database on food security and development in the West African Sahel targets decision-makers, researchers and development practitioners concerned with sustainable agriculture, natural resource management and conflict resolution in the West African Sahel. This database resource is an intersection of these fields, addressing the day-to-day crises of competing interests seeking food security dependant on a diminishing resource base.

To date, this database holds more than 600 bibliographic records pertaining to sustainable agriculture, natural resource management, conflict management and resolution and other issues related to food security in the West African Sahel. These searchable records contain abstracts that can be reviewed. Key features are:

- Documents are in French and English.
- Significant amounts of "grey" (fugitive) literature from Africa, particularly West Africa.
- Consolidated information on the topics of sustainable agriculture and natural resource management with information on conflict resolution and management.

If you have documents that are relevant to the themes of sustainable agriculture, natural resource management, and conflict management, please send attachments including an abstract (in Word or WordPerfect) to: sanrem@vt.edu
www.oird.vt.edu/sanremcrsp/index.html

Species conservation database (WISIA)

The German Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN) has recently launched a searchable database which holds information on the national and international protection status of more than 10 000 animal and plant species. This Internet tool presents, for the first time, a synoptic view of the diverse field of species conservation legislation. A permanent update of data is guaranteed by the Federal Agency for Nature Conservation (Bundesamt für Naturschutz) as soon as one of the relevant species conservation regularizations is amended.

The database holds information on animals of 1 407 genera and 7 218 species; on the plant side it contains 2 821 species from 1 034 genera. The CITES-EC Regulation No. 338/97 alone, which implements CITES in the European Union, covers 4 756 animal species in its Annexes A and B.

www.dainet.de/genres/mpc-dir

For more information, please contact:

**Dr Uwe Schippmann, Bundesamt für Naturschutz,
 Konstantinstraße 110, D-53179 Bonn, Germany.**

E-mail: wisia@bfn.de;

www.wisia.de

Directory of Forest-Related International and Regional Institutions and Instruments

www.un.org/esa/sustdev/forests.htm

FRAME

The FRAME Web site is not only a library of technical reports and country data, but also a gateway to other databases and mechanisms. It facilitates the use of up-to-date information by environment and natural resource management professionals in Africa and encompasses: a Web gateway to analytical tools and information, mechanisms to share lessons and experiences, a Contact Group and networks of experts, and linkages to enhance collaboration among partners. Funding for FRAME is provided by the United States Agency for International Development (USAID) Africa Office of Sustainable Development.
www.frameweb.org

Global association of online foresters

www.foresters.org/

New search engine

This agricultural search engine (not a directory site) has more than 300 000 Web pages.

www.web-agri.com/

Newsletters

Amazon News list

Amazon News is a free weekly newsletter by Friends of the Earth – Brazilian Amazon, with a selection of news published by Brazilian media in the latest week and translated into English. Subscribe online through the Web site:

www.amazonia.org.br/english/

Biodiversity and Intellectual property rights – BIO-IPR

BIO-IPR is an irregular listserver put out by Genetic Resources Action International (GRAIN). Its purpose is to circulate information about recent developments in the field of intellectual property rights related to biodiversity and associated knowledge. To join, send the word "subscribe" (no quotes) as the subject of an e-mail message to: bio-ipr-request@cuenet.com

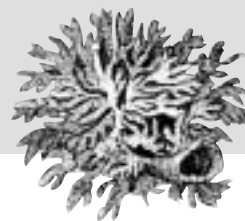
For general information about GRAIN, please contact:

E-mail: grain@grain.org; www.grain.org

EcoNews Perú

EcoNews Perú es la primera agencia de noticias ambientales del Perú. Su objetivo es proveer de información sobre temas ambientales al público peruano a través de despachos diarios libres de costo a los medios de comunicación (prensa escrita, radio, TV e Internet). Para ello, ha sido desarrollado un sistema de cobertura diaria de noticias que abarca los campos de la ecología, los recursos naturales y la problemática ambiental, empleando tecnología de punta y aprovechando la experiencia adquirida en años de trabajo a lo largo y ancho del país.

WEB SITES



EcoNews Perú espera que esta experiencia, única en su género en el continente, permita crear conciencia en el público peruano acerca de los temas relacionados con la naturaleza y el uso de sus recursos, así como evaluar la respuesta de los medios y las autoridades nacionales respecto de la información vinculada al ambiente.

Para más información, dirigirse a:

Correo electrónico: econews@econewsperu.com;

www.econewsperu.com

FRAM Egram

A new twice-monthly bulletin produced by FRAME on strategic environmental issues in Africa. To subscribe, please send an e-mail to: framemail@irg ltd.com

IUFRO Non-Wood Forest Products News

The inaugural issue of the IUFRO Non-Wood Forest Products newsletter can be found on the IUFRO Web site:

<http://iufro.boku.ac.at/iufro/iufro net/d5/hp51100.htm>

Several activities are being initiated with the newsletter. The professional expertise database is designed to serve as a forum and the discussion group hopefully will advance discussion on critical issues. The initial topic of discussion is the C&I for NWFPs.

For more information, please contact:

Dr Jim Chamberlain, Non-Timber Forest Products Research Technologist, US Forest Service, Southern Research Station, Coordinator, IUFRO Research Group 5.11 (Non-wood Forest Products), 1650 Ramble Road, Blacksburg, VA 24061, USA.

Fax. +1 540 2311383;

e-mail: jachambe@vt.edu; www.sfp.forprod.vt.edu

Newsfront

UNDP helps countries work towards the UN Millennium Summit goal of halving world poverty by 2015. *Newsfront* brings stories of big breakthroughs and small gains. Subscribe online at:

www.undp.org/dpa/newsfront_admin.html

RECOFTC e-letter

The RECOFTC e-letter is a bi-weekly e-mail intended to provide news and information on community forestry related activities and issues throughout the region. It is published by the Regional Community Forestry Center for Asia and the Pacific (RECOFTC). Back issues of the RECOFTC e-letter can be found at:

www.recoftc.org/publications_recof_letter.html

To subscribe, or for more information, please contact: contact@recoftc.org

NTFP Project in Viet Nam

The Sustainable Utilization of Non Timber Forest Products Project Viet Nam, based in the Non Timber Forest Products Research Centre, Hanoi and supported by IUCN, has a new

Web site.

www.mekonginfo.org/partners/ntfp/index.htm

Pinestraw

Includes information on pine straw studies and management.

www.agriquip.com/pinestraw_baling.html

Philippine Plant Specialist Group

www.pnh.com.ph

Plants for a future

This project, based in the United Kingdom, seeks to gather together and disseminate information on the many useful properties of plants, particularly rare and unusual plants that have medicinal, edible or other uses. The project practises vegan-organic permaculture with emphasis on creating an ecologically sustainable environment and perennial plants. It maintains a database of over 7 000 plant species.

www.scs.leeds.ac.uk/pfaf/index.html

Small enterprise development Web sites

www.seepnetwork.org/bdsguide.html; www.sba.gov/starting/

The Forest Management Trust

This non-profit organization located in Gainesville, Florida, United States, is updating its Web site and is in search of photographs of forests, forest management, forest products (timber and NTFPs) and forest-based people and communities. Photographs from tropical forests are needed, but other forest types are also appropriate, especially forests in the southeastern United States. No payment can be made but credit will be given in the Web site.

For more information, please contact:

Stephen Taranto, Forest Management Trust.

E-mail: staranto@foresttrust.org; or

Nacho Paz Posse, Webmaster.

E-mail: ignaciopp@email.com

Tree Conservation Information Service

www.wcmc.org.uk/cgi-bin/SaCGI.cgi/trees.exe

UN Commission on Sustainable Development

This includes a vast amount of country information on forests, based on country reports to CSD.

www.un.org/esa/agenda21/natlinfo/

USDA Forest Service International Programs' latest highlights – available online

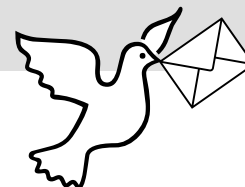
www.fs.fed.us/global/wsnew/

Woodnet

Woodnet is the online home for all involved in the Forest and Wood products industry.

www.woodnet.co.nz ●

READERS' RESPONSE

**Request for help – *Astrocaryum huicungo***

El motivo de la presente es para solicitar información sobre la extracción de aceite de una planta denominada Huicungo (*Astrocaryum huicungo*). Deseo recibir información sobre cómo extraer el aceite de esta planta mediante métodos tradicionales pero efectivos.

Mi dirección postal es: Víctor Hugo Acosta Avila, Romulo Espinar 117 (esquina Colegio Rosa Agustina), Iquitos, Loreto, Perú; correo electrónico: vicacost@yahoo.com

Request for help – Effect of RIL on NTFPs

I am researching RIL (reduced impact logging) and Non-Timber forest Products (NTFP) for advancing sustainable forest management and would like information about implementing RIL techniques for NTFPs. In addition to information on this subject, I am looking into the economic feasibility to implement RIL tactics and utilize NTFPs for sustainable forest management ... and not coming up with a lot of case studies or real-life examples. Any ideas would be appreciated.

If you can help, please contact: Erica Clark, Virginia Tech University (erclark1@vt.edu).

Request for help – *Nipa palm*

I am looking for information on the Nipa palm and how to develop its products into a cottage industry that will generate employment in the countryside of the Philippines.

If you can help, please contact: Nick Villarruz (iam@capznet.mozcom.com)

Request for help – Survey on the commercial potential of selected tropical NWFPs from the state of Acre, Brazil

We are currently assisting the government of Acre, Brazil, in assessing the market potential of seven tropical NWFPs (copaiba, andiroba, patua, buriti, murmuru, cat's claw and açai), as part of a project (www.projetoacre.ac.gov.br) that seeks to improve the livelihood of forest dwellers (subsistence farmers/rubber tappers/Indians), while conserving the natural (forest) resources base.

Any information regarding the uses, demand and international markets for these products would be appreciated since pertinent available information seems to be scarce, out of date, too aggregate and/or not quantified.

If you can help, please contact: Hector Escobar (Unicamp, Campinas-SP) hector@eco.unicamp.br, or Guy Henry (CIRAD, Campinas-SP) guyhenry@lexxa.com.br

Request for help – training materials

I am looking for business training materials designed for NWFP enterprises. This is part of some research I am doing for a non-profit conservation group called Innovative Resources Management. More specifically, I am seeking information that could help train new NWFP businesses in product feasibility analysis and marketing. Information on standard formats for product feasibility analysis and rural based marketing would also be useful.

If you can help, please contact: Abhishek Lal, Innovative Resources Management, 2421 Pennsylvania Ave, NW, Washington, DC 20037, USA; fax: +1 202 2938386; e-mail: abhishek_lal@hotmail.com; www.irmgt.com

Request for help – truffle research

I am currently doing research on a truffle found in most of the eastern United States, as well as Quebec and Mexico. The species is *Tuber lyonii*, which has also been called *T. rufum* and *T. texense*. It may be found in most places where any of the following trees are found: shagbark hickory, American basswood, scarlet oak, several other oak species, pecan, and possibly other tree species as well. The largest collections to date have been associated with either American basswood or pecan.

Because of the wide range involved, there is also a considerable variation in fruiting times. The fungus has been reported from as early as June in Mexico and southern Texas to as late as March in Minnesota "a week after the snows went off".

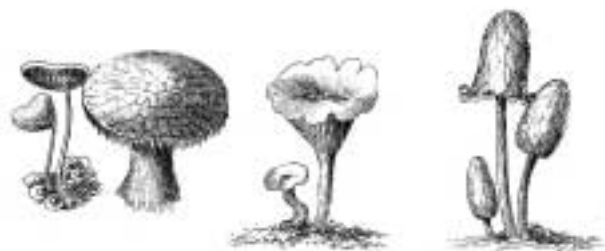
Truffles are economically important worldwide, and have an enviable position among gourmets. Last year, the Italian white truffle (*Tuber magnatum*) sold for US\$7 000/lb in a charity auction, according to a report published by the BBC.

The wide range and fruiting times indicate *T. lyonii* may also be a fungus of some economic importance, but it appears to have been largely ignored for nearly 100 years (it was first collected in 1903).

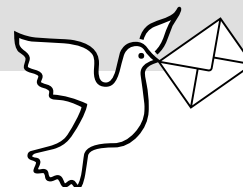
To proceed with its development, I need to know how common it is at this time and how much is available. For more information, please visit: www.oregonwhitetruffles.com; if you can help, please contact: Daniel B. Wheeler (dwheeler@teleport.com).

Request for help – wild mushroom business

I am starting to work on my postgraduate study project. This marketing project will focus on the charcoal and wild mushroom business in Hungary that links to the European market. I would also like to analyse the target market in which the Hungarian products (charcoal and wild mushroom) are participating. I am actually looking for country-specific (Europe) information about the charcoal and wild mushroom business. If you have any kind of material, publications, ideas about these topics, please contact me personally: Attila Hegedus, Hungary (hegedus@emk.nyme.hu).



READERS' RESPONSE



Request for information – NTFP definition (1)

I am making a literature review on the NTFP issue. There seems to be confusion regarding the name and definition. Why isn't there a universal name with a common definition? As well as for classifications?

Please clarify this for me. Silavanh Sawathvong (silavanh@hotmail.com).



The following reply has already been sent from FAO's NWFP Programme, but perhaps readers have additional ideas that they would like to share.

"Indeed, the situation is rather complex. NWFPs – as we call them – are a rather diverse group of products, ranging from medicinal plants and roots to lianas and bushmeat. The terms just used already show the different possibilities on how to classify these products: by use (medicine), life form (lianas) and part used (roots). Obviously, every classification and definition depends on the purpose of why they are used.

It will be very difficult to identify ONE definition or ONE terminology that will fit everybody's needs. However, what is important is that whenever a given term/classification is used, at least both, terms and classifications, are defined. Once defined, the information presented can be compared with other literature (which might use other terms and definitions ...).

For further information on this issue, please have a look at the following articles available on our Web site:

- Terminology, Definition and Classification of Forest Products other than Wood (C. Chandrasekharan), at: www.fao.org/docrep/V7540e/V7540e28.htm;
- Towards a harmonized definition of non-wood forest products, at: www.fao.org/docrep/x2450e/x2450e0d.htm#fao"

Request for information – NTFP definition (2)

I know you might have extensively deliberated on definitions. The use of Non-Wood instead of Non-Timber is somehow

misleading. How do you classify products like chewsticks that are woody, but non-timber? (Hassan Adewusi; ajilete@hotmail.com)

The following reply has already been sent from FAO's NWFP Programme.

Please have a look at a brief article on this issue at: www.fao.org/docrep/x2450e/x2450e0d.htm#fao, where we distinguished between wood and non-wood forest products. Chewsticks can be derived from different part of the plants, e.g. bark and roots, and I would tend to include them. However, there is indeed a grey area and no clear borderline between NWFP/WP, NTFP/NWFP and NTFP/Timber.

Request for information – Russian Far East

I would like to find out if you have any information/database suggestions for obtaining information on NTFPs in the Russian Far East. I am working with a forestry project there and am doing some background research.

If you can help, please contact: Maureen DeCoursey, Director of Sustainable Development, Herb Research Foundation, 1007 Pearl Street, Suite 200, Boulder, Colorado 80302, USA (Fax: +1 303 4497849; e-mail: mdecoursey@herbs.org or modecoursey@hotmail.com; www.herbs.org). ●



You can't wake a person who is pretending to be asleep.

Navajo Proverb

Resourceful rattans



Rattans are palms which grow in the tropical forests of Africa and Asia. The word rattan is derived from the Malay "rotan", the local name for climbing palms. Rattans are best known for the manufacture of chairs and tables, giving many verandas and terraces their much appreciated casual or holiday appeal. Locally, however, rattans are also used as vegetables from the edible shoots, or for ropes, fibres, roof thatching, construction materials and all kinds of household furniture. A recent publication in the FAO NWFP series, *Rattan, current research issues and prospects for conservation and sustainable development*, contains the proceedings of a joint FAO/INBAR International Expert Consultation on Rattan.