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8
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EDITORIAL

We invited Mr Cherukat Chandrasekharan, who founded Non-Wood News *in 1994, to write the editorial for this, the first issue of the new millennium. We would like to thank Mr Chandrasekharan for accepting our invitation.*

I am very happy to have the honour and privilege of writing this editorial.

It is gratifying that *Non-Wood News* has proved to be a great success. The reasons are clear. First, it has met a seriously felt need. Second, it came with a refreshing identity – not as old wine in a new bottle, but as new wine in a rather large barrel. Each issue of *Non-Wood News* is packed with so much useful and interesting material that it would probably be better to spread it out and produce at least two issues annually.

Non-Wood News also has a major mission: to help realize the potential that the future holds for non-wood forest products (NWFP). NWFPs had a colourful and glorious past. Subsequently, however, they suffered serious downfall and neglect. Some 5 000 years ago, the Chinese Emperor Shen Nung wrote (what is believed to be the earliest recorded use of plants as medicine) that *chalmugra oil*, an extract from the fruit of *Hydnocarpus* spp., was an efficient treatment against leprosy. It is estimated that 35 000 to 70 000 plant species have at one time or other been used, in some culture or other, for medicinal purposes. The geopolitics of today was influenced by the past trade in NWFPs – spices, cosmetics, food preservatives and silks. The influence of trade in NWFPs continued up to the industrial revolution in the West, when the economy of scale slowly eased out the small-scale production of NWFPs.

Continuous deforestation and forest degradation drastically affected the NWFP resources along with habitat changes and loss of biodiversity. The timber-orientation of the forestry profession, and the bias of planners in favour of large-scale enterprises, had left NWFPs at a disadvantage. Their production, at best, was considered incidental.

Thanks to publications such as *Non-Wood News*, we are made aware of the multiple contributions of NWFPs. The flora and fauna providing NWFPs are a complete resource base. Use of non-wood goods and services is often linked to local culture and there is considerable indigenous knowledge available about them. It has been prophesied that a healthy marriage of traditional and modern scientific knowledge can open up unlimited possibilities for NWFPs. New possibilities can also emerge, from developments in biotechnology, carbon trade and clean development mechanisms; and conceptually these can significantly alter the future outlook.

The overall trend in respect of NWFP resources, however, has been towards depletion. Their management now faces colliding trends of fall in supply and rise in demand. While many of the flora and fauna yielding NWFPs are amenable to be domesticated and cultivated, efforts in that direction have also been hesitant.

Many of the failures in NWFP programmes result from inattention to markets. Marketing helps to create better linkages among resource creation, management, processing and end use. Rational and transparent marketing

NON-WOOD NEWS

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***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 30 November 2001, to:**
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CONTENTS

EDITORIAL

transactions throughout the production and market chains are crucially needed. Some NWFPs have fully faded out of the market in the past, and in respect of others there has been an erosion of the international market share. However, experts observe an emerging "green consumerism" – particularly in favour of phytopharmaceuticals and aroma chemicals.

Medicinal and aromatic plants, thus, form an important group that has received considerable attention, nationally and globally; this is backed up by the simultaneous advances in chemistry, bacteriology, pathology and pharmacology. The number of plants at present forming the sources of modern medicine probably runs to thousands.

With all their multifaceted properties and contributions, NWFPs should normally be able to halt the ongoing assault on forests and the resulting deforestation and habitat degradation. But, the realistic assessment is that very little is happening at ground level to manage the NWFP resource properly. Overexploitation and unscientific harvesting of medicinal plants and the depredations by well-organized smuggling networks have led to the virtual decimation of several species in the wild. It is becoming difficult to get genuine and authenticated materials and adulteration is rampant.

The current situation of NWFPs presents several contradictions and anachronisms, and observers feel that something is amiss. Deficiencies and inadequacies seem to persist. The need has been stressed, over and over again, to manage the remaining NWFP resources scientifically, sustainably, rationally and equitably. In spite of the apparent awareness in that regard, nothing much seems to have happened to translate that awareness into effective action. So far, the spurts of enthusiasm have lacked coordination, consistency and survival capacity – leaving our own credibility under dark shadows.

This thumbnail sketch of the situation and diverse problems facing the various aspects of NWFPs will help to have a hard-nosed appreciation of the challenges we face and their social, economic, environmental and institutional implications.

While *Non-Wood News* has registered significant achievements during the last eight years, the task ahead – moving forward from the stage of awareness creation to promotion of organized action – appears more onerous. The special feature in this issue, "Plan of action towards the sustainable development of the rattan sector", is a clear indication that it has embarked on the new mission.

Non-wood News has miles after arduous miles to go on this mission and I wish it continued and resounding success in its untiring efforts to face the daunting challenges with fortitude.

Cherukat Chandrasekharan

CONTENTS

Non-Wood forest products (NWFP) consist of goods of biological origin other than wood, derived from forests, other wooded land and trees outside forest. 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 synonymous throughout this bulletin. Other terms, such as "minor", "secondary" or "speciality" forest products, are sometimes used to keep original names and/or titles.

PLAN OF ACTION TOWARDS THE SUSTAINABLE DEVELOPMENT OF THE RATTAN SECTOR

An Expert Consultation on Rattan Development was held at FAO headquarters in Rome, Italy from 5 to 7 December 2000. The meeting was jointly organized by FAO and the International Network on Bamboo and Rattan (INBAR), and cofunded by the Swedish International Development Cooperation Agency (Sida). The invited experts concluded that rattan resources worldwide are being depleted and that there is an urgent need to ensure a sustainable supply of rattan given its huge socio-economic importance.

The 23 experts from 16 countries were selected on the basis of their specialized knowledge and their role in the management and development of rattan resources in their respective countries. In addition, the meeting was attended by representatives of the International Fund for Agricultural Development (IFAD); the International Tropical Timber Organization (ITTO); the International Plant Genetic Resources Institute (IPGRI); the Centre for International Forestry Research (CIFOR); INBAR; Sida; Kew Gardens; the German Agency for Technical Cooperation (GTZ); Tropenbos; the private sector; and universities.

According to an estimate made by INBAR, the global local usage of rattan is worth US$2.5 billion and external trade of rattan is estimated to generate US$4 billion. Worldwide 700 million people use rattan. Most of the raw material for local processing and for supplying the rattan industry is still obtained by harvesting unmanaged, wild rattan resources in natural tropical forests. Only a very small share is obtained from rattan plantations. The huge economic and social importance of the rattan sector is thus based on a fast dwindling stock of wild rattan resources available in the forests, therefore compromising its future outlook.

The focus of the meeting was on the sustainable development of the rattan

sector worldwide, but with a particular emphasis on Asia and Africa. Some attention was given to Latin America in view of its potential for rattan introduction.

To facilitate the discussions at the meeting, studies had been commissioned by FAO in advance to cover supply and demand, trends and needs of rattan and its sector in the major producing countries in Asia and Africa, as well as global status reports on ongoing work on rattan development and conservation. Drafts of these studies had been made available to the participants well in advance and were presented by their authors at the meeting. The full text of these papers will be included in the proceedings of the meeting.

Key observations

Based on the papers presented and their discussion, the meeting emphasized the economic, sociocultural and ecological importance of rattan to a large number of people in the world and noted that rattan resources in their natural range of tropical forests in Asia and Africa were being depleted through overexploitation, inadequate replenishment, poor forest management and loss of forest habitats. There was a need to ensure a sustainable supply of rattan through improved and equitable management.

The meeting recalled that:

- There were approximately 600 rattan species, of which some 10 percent were commercial species. Many species, including some of commercial importance, had very restricted natural ranges. The majority of the world's rattan resources (by volume and by number of species) were in one country – Indonesia.
- Rattan was an important commodity in international trade. At the local level, it was of critical relevance for rural livelihood strategies as a primary, supplementary and/or emergency source of income. Rattan collection complemented agriculture in terms of seasonal labour and as a source of capital for agricultural inputs.
- The rattan sector was characterized by a variety of stakeholders with different needs and interests, such as rattan growers, raw material collectors, manufacturers and traders, and it functioned within a complex and dynamic socio-economic, political and ecological context. Rattan was gathered by unorganized or organized collectors, the latter either under contract or in debt relationships with traders and farmers/cultivators. In addition, there was a loss of traditional rattan management practices, while at the same time increasing competition for resources. Linkages between industry, traders, collectors/cultivators and research and development efforts were weak. Rattan manufacturing and trade were fragmented and diverse in size and markets, with a focus on export.

The meeting highlighted that taxonomic knowledge on species was patchy and available information conflicting. Similarly, the knowledge of biological aspects was also sparse, e.g. pollination and gene flow. In spite of the World Conservation Union Red List review of 1998, the conservation status of rattans was not well known and it was difficult to assess and monitor. In addition, rattan species were assumed not to be "safe" in protected areas or in national parks, as harvesting in such areas was usually permitted or tolerated. It was also assumed that the genetic basis of rattan species was narrowing. Some species were likely to be at risk of extinction.

The meeting underlined that there could be no sustainable supply of rattan if the forests in which they grew were not managed sustainably. In its natural

habitat, rattan was not managed as yet, and received low priority in national forest and conservation policies. There was no dedicated rattan development institution in any country, as rattan was usually subsumed within the forestry services, and the few existing national rattan programmes were weak and with limited research and development capacity. With a few exceptions, national forest inventories did not include rattan, and information on the resource base was scarce. However, in large tracts of degraded and logged-over forests, (re)introduction and management of rattan had the potential to complement significantly the value of these forests.

The meeting was informed that major advances had been made in the understanding of growing rattan as a plantation crop. Although community-based or smallholder rattan gardens could be profitable in some situations, the profitability of industrial-scale plantations in Asia was currently uncertain, as other land uses were more lucrative. As a result of this, private-sector investment in industrial-scale rattan plantations had declined. The meeting took note that existing rattan plantations had been converted into more profitable crops such as oil-palm.

The meeting was further informed that rattan production was also affected by the low return to gatherers, resulting in weak incentives for sustainable rattan harvesting and management. A number of factors contributed to the low returns. Foremost among these were uncertain property rights, the dispersed nature of production and inconsistent cane quality. In several countries, prices and competition had been affected by the remoteness of collecting areas and poor transportation; "illegal" harvesting; poor market information; lack of organization among collectors; large post-harvest losses due to insect and fungal infestation; prohibitive tax policies; export barriers; and informal taxes that depressed raw material prices.

The meeting noted that international agencies such as INBAR, CIFOR, IPGRI, FAO and ITTO addressed rattan management, either directly or indirectly, within their programmes.

Conclusions

In the light of the above, the meeting concluded that there was a wide variety of potential interventions that could assist the different stakeholder groups. Raw material producers and smallholders could be encouraged (and be assisted) to manage local resources on a more sustainable and productive basis, through the establishment of community forest management practices, long-term concessions, local land-use planning and the provision of resource and/or land tenure rights, in conjunction with approved management plans.

At the processing level, needs were particularly great at the artisanal level. Potential interventions that might assist industry include improving entrepreneurship and competitiveness; training of advisers; improving post-harvest treatment and quality control; market deregulation and improved market information; establishment of design centres; and trade fairs. Also, given the nature of the resource users and the generally small-scale or cottage industry (employing socially disadvantaged groups), rattan products could become ideal commodities for promotion as rain forest conservation products.

The meeting identified the following key actions to be initiated immediately for enhancing a more sustainable supply of rattan:

Resources

- intensifying *ex situ* and *in situ* conservation efforts in a more coordinated and organized manner among countries in the regions;
- developing suitable methods for resource assessments, including studies on growth, yield, basic biology and taxonomy of rattan species;
- improving techniques of enrichment planting and management of rattan in degraded forests, and wide dissemination of the available guidelines for rattan planting.

Products

- increasing the knowledge of the properties of commercial species and of the potential of underutilized/lesser known species;
- improving and disseminating technologies for reducing post-harvesting losses, biological deterioration, improved storage and processing;
- introduction of quality grading.

Policies and institutional support

- awareness-raising on the importance of the rattan sector to decision-makers at all levels;
- institutional strengthening and coordination regarding rattan conservation, management and processing issues, including the promotion of more government and private sector cooperation/coordination to enhance the contribution of rattan for poverty alleviation and economic prosperity;
- providing tenure security to rattan gatherers and planters by incorporating them into community-based forest management schemes;
- introducing incentive schemes for rattan cultivation to increase the economic benefits for rural households and smallholder plantations in Asia, such as providing credit and technical assistance for small-scale plantation development and favourable harvesting and marketing arrangements;
- introducing market deregulation to benefit rattan collectors and traders (i.e. removing transport barriers;

SPECIAL FEATURES

TITLE OF DOCUMENT	Presented by
General introduction to rattan – the biological background to exploitation and the history of rattan research	John Dransfield
Challenges and constraints in rattan processing and utilization	Walter Liese
Presentation of INBAR's programme on rattan	Lou Yiping
Resilience and evolution in a managed NTFP system: evidence from the rattan gardens of Kalimantan	Brian Belcher
Rattan genetic resources conservation and use – IPGRI's perspective and strategy	Hong Lay Thong
Presentation of ITTO	Hwan-Ok Ma
Status of rattan resources and uses in West and Central Africa	Terry Sunderland
Status of rattan resources and uses in South Asia	C. Renuka
The status of the rattan sectors in Lao People's Democratic Republic, Viet Nam and Cambodia, with an emphasis on cane supply	Tom Evans
Degraded tropical forest and its potential role for rattan development: an Indonesian perspective	Toga Silitonga
Country report on the status of rattan resources and uses in Malaysia	Abdul Razak
Rattan resources of the Philippines – their extent, production, utilization and issues on resource development	Florentino Tesoro
Thai rattan in the early 2000	I. Vongkaluang
Harvesting wild rattan: opportunities, constraints and monitoring methods	Stephen Siebert
Rattan in the 21st century – an outlook	Cherla Sastry
Policy and Institutional Framework for a sustainable development of rattan	Mohammed Salleh
Discussion paper on "Key issues for required actions"	Wulf Killmann
Summary notes of the paper submitted for the meeting	FAO Secretariat

support for improved collection and dissemination of market information; extension in processing techniques);
- providing comprehensive training and support to local specialists in rattan-producing countries in taxonomy, management and processing, complemented with "twinning arrangements" among relevant institutions in the regions.

The expert consultation emphasized the potential of enhancing regional cooperation through information exchange; collaborative research and development; training; and material exchange to promote rattan as a vehicle for achieving social, economic and environmental sustainability in rattan-producing countries. To this end, the expert consultation called for a concerted effort of governments, the private sector, non-governmental organizations and relevant international agencies.

The proceedings, with the full text of presentations, are being prepared and will be posted on the home page of FAO's NWFP Programme as soon as they are finalized. A short report on the meeting is available. [A *future issue of* Unasylva *will be dedicated to this meeting*.]

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LES PRODUITS FORESTIERS NON LIGNEUX COMESTIBLES, UTILISÉS DANS LES PAYS AFRICAINS FRANCOPHONES

Les produits comestibles sont parmi les produits forestiers non ligneux (PFNL) les plus importants en Afrique. Le texte ci-dessous résume l'utilisation de quelques PFNL végétaux comestibles dans les pays francophones de l'Afrique,

notamment en Afrique du Nord, de l'Ouest et Central. Il est tiré et adapté des Profiles des Pays, qui sont disponible sous forme électronique sur le site d'Internet de la FAO (voir www.fao.org/forestry/fo/country/nav_africa.jsp?lang_id=2, choisir pays et sujet [PFNL]), ainsi qu'en tant que document de travail (FAO. 2001. *Les produits forestiers non ligneux de l'Afrique: un aperçu régional et national.* Working Paper FOPW/1/01. Rome).

Bénin

Les PFNL les plus utilisés sont récoltés dans les champs et les jachères plutôt que dans les savanes et les forêts. Quarante-et-un espèces forestières (par exemple, *Irvingia gabonensis*, *Parkia biglobosa*) qui fournissent des produits comestibles ont été identifiées.

Les trois PFNL les plus importants dans la région Bassila à l'ouest de Bénin sont le karité (*Vitellaria paradoxa*), le néré (*Parkia biglobosa*) et le palmier à huile (*Elaeis guineensis*).

À part ces produits, huit autres PFNL sont d'une importance limitée: *Blighia sapida, Adansonia digitata, Tamarindus indica, Borassus aethiopum, Vitex doniana, Diospyros mespiliformis, Perntadesma butyracea* et *Bombax costatum*.

Burkina Faso

Les PFNL comestibles, en particulier le karité (*Vitellaria paradoxa*) et le néré (*Parkia biglobosa*), sont d'une grande importance au Burkina Faso. Des plantes comme *Adansonia digitata* (baobab), *Tamarindus indica* (tamarin), *Bombax costatum, Balanites aegyptiaca, Detarium microcarpum, Ziziphus mauritiana, Sclerocarya birrea* et *Elaeis guineensis* sont également importantes sur le plan socio-économique.

Parmi les PFNL du Burkina Faso, le karité occupe une place de choix pour ses multiples avantages au niveau de l'économie locale (fabrication de beurre de karité et de savon) et parce qu'il constitue un produit d'exportation depuis plus de 25 ans sous forme d'amande et de beurre de karité.

Fundación Espavé

Le néré (*Parkia biglobosa*) détient une grande valeur alimentaire. Les principales utilisations portent sur la pulpe et les grains des gousses mûres très riches en saccharose, en protéines et en lipides. Le fruit du néré est l'objet de transactions sur les marchés africains sous diverses formes, notamment le «soumbala» (condiment de la pâte de maïs) qui est le plus couramment utilisé. En 1990 la production totale en volume de graines de néré était de 20 802 tonnes pour une valeur de 5 852 millions de FCFA.

Le baobab (*Adansonia digitata*) est une espèce offrant une multitude de possibilités d'utilisation. Les feuilles et les fruits constituent une source d'alimentation importante. Les jeunes feuilles sont utilisées pour la préparation d'une sauce riche en protéines. Elles sont également moulues en farine. Le fruit ou «pain de singe» est mangé comme casse-croûte, mais il est aussi moulu en farine. La farine est mangée sans préparation ou versée dans la bouillie pour lui donner un goût aigre. Du point de vue nutritionnel, le fruit est très riche en calcium, vitamine C et protéine. En 1990 la production de feuilles de baobab était de 92 445 tonnes pour une valeur de 8 782 millions de FCFA.

Burundi

Quoique très limitées, les forêts burundaises renferment des produits végétaux comme des fruits, des champignons et des feuilles (par exemple, *Gardenia ternifolia, Lannea schimperi*) qui contribuent à l'alimentation de la population, surtout en période de soudure, et des éleveurs pendant la période de transhumance.

Au Burundi, plus de 50 espèces de champignons comestibles sont ramassées. Les champignons les plus consommés sont du genre *Cantharellus* (*Cantharellus congolensis, C. cibarius, C. cyanoxanthus, C. densifolius, C. rufopunctatus, C. cyanescens, C. splendens, C. symoensii, C. pseudocibarius, C. ruber*). En 1995, plus de 1 000 kg de chanterelles en provenance des forêts de Rumonge ont été exportés vers l'Allemagne.

Cameroun

Les plantes forestières comestibles (fruits, noix, feuilles légumes, condiments, boissons) sont parmi les PFNL les plus importants au Cameroun. Les plantes comestibles importantes consommées à l'état brut incluent:

- les bourgeons de *Pennisetum purpureum*;
- les feuilles de *Balanites aegyptiaca* (consommées dans les savanes du Nord), *Gnetum africanum* (consommées dans toutes les régions forestières), *Aframomum* spp., *Ocimum* spp.;
- les écorces de *Scorodophleus zenkeri, Aphrardisia* spp. et *Garcinia* spp.;
- les rhizomes de *Zingiber officinales*;
- les tubercules de *Dioscorea* sp. (igname sauvage);
- les racines des Rubiacées;
- les fruits d'*Annonidium mannii, Elaeis guineensis, Tamarindus indica, Sclerocarya birrea, Cola acuminata, C. nitida, C. verticillata, Irvingia gabonensis, Baillonella toxisperma, Ricinodendron heudelotii, Coula edulis, Tricosypha arborea, T. acuminata, T. ferrugine, Xylopia aethiopica, Aframomum* spp., *Antrocaryon klaineanum, Piper guineensis, Uapaca heudelotii, Tetrapleura tetratera*;
- les graines de *Monodora myristica, Bucholzia macrophylla, Garcinia kola*;
- les champignons.

Les produits consommés à l'état transformé incluent:

- l'huile extraite des graines de *Baillonella toxisperma, Vitellaria paradoxa, Autranella congolensis*;

- la pâte à base d'amandes des graines d'*Irvingia gabonensis*;
- l'huile extraite à partir des graines d'*Allanblackia floribunda*;
- les différentes espèces de champignons consommés secs.

Une vingtaine de plantes comestibles sont exportées en Europe ainsi qu'aux États-Unis, au Gabon, en République centrafricaine, en Guinée équatoriale et au Nigéria. Le Cameroun est le seul pays en Afrique Centrale qui exporte des PFNL pour le «marché vert» des «produits organiques/biologiques».

Les fruits d'*Irvingia gabonensis* (mangue de brousse) sont très populaires et offrent un grand potentiel pour l'accroissement des sources de revenu grâce à la commercialisation des excédents de récoltes. Deux composantes d'*Irvingia gabonensis* sont utilisées: les fruits et les amandes. Le fruit, qui contient beaucoup de fibres, est consommé frais. La partie la plus importante est l'amande, utilisée pour l'assaisonnement des soupes et qui constitue une source de revenu importante pour les paysans de la zone de la forêt humide du Cameroun.

Les fruits de *Coula edulis* sont cueillis essentiellement pour l'autoconsommation. Ils sont difficilement commercialisés du fait de leur poids. Généralement, les gens cueillent juste les quantités nécessaires à leur subsistance, ou bien les mangent directement dans les champs en guise de coupe-faim. Le bois, renommé pour sa longévité, est utilisé comme matériau de construction. Ces arbres se trouvent dans la forêt vierge et, très rarement, dans les plantations de cacaotier. La période de ramassage des fruits se situe entre août et septembre; les arbres ne produisent qu'après un cycle de deux ans. Les noix sont généralement cueillies par les enfants, mais également par quelques hommes et femmes.

Les noix de kola de *Cola acuminata* sont les plus précieux parmi les PFNL du Cameroun. Le marché de ces noix est estimé à 20 400 tonnes. En 1983, les revenus procurés par les noix de kola dans certains foyers du sud-ouest du Cameroun étaient plus élevés que ceux du café, et la vente des noix de kola a fourni entre 5 pour cent et 37 pour cent des revenus monétaires des familles. Les projections de vente sur les marchés de PFNL pour toute la zone des forêts humides du sud de Cameroun estimaient que:

- en 1995, une quantité de 509 000 kg a été vendue pour une valeur de 221 990 000 FCFA;
- en 1996, une quantité de 127 400 kg a été vendue pour une valeur de 94 656 000 FCFA.

Très souvent, *C. acuminata* est plantée par des paysans, surtout dans les plantations de cacao.

L'écorce de *Garcinia lucida* et *Garcinia kola* sont des condiments importants pour la production des vins de palmiers. Après la dévaluation du franc CFA qui a causé une augmentation des prix de la bière ainsi que du whisky, la consommation des alcools locaux (vins de palmier, whisky local) et, en conséquence, l'exploitation de l'écorce a augmenté. Cette exploitation met en danger les espèces concernées, car l'écorçage affaiblit ou tue l'arbre. La récolte des produits du *Garcinia lucida* a lieu tout au long de l'année, bien qu'il soit plus facile d'extraire l'écorce pendant la saison des pluies, c'est-à-dire entre août et septembre et entre avril et juin. L'écorce est enlevée sur l'ensemble de l'arbre provoquant sa mort.

L'écorce de *Cola nitida* peut être utilisée pour la fermentation des vins de palme et de raphia, même si les gens normalement préfèrent l'écorce du *Garcinia lucida*. Les noix de *Cola nitida* sont utilisées pour l'autoconsommation et le commerce. Les arbres sont situés surtout dans les plantations de cacaotier et sont pour la plupart cultivés. Les arbres sauvages, dont les fruits sont d'une qualité moins bonne, se trouvent également dans la forêt vierge. Certains arbres dans les plantations de cacaotier ont été plantés, les autres poussant naturellement, sont protégés et bien entretenus.

Les feuilles légumes de *Gnetum africanum* et *Gnetum buchholzianum* sont des PFNL importants au Cameroun. Elles sont commercialisées au niveau local, régional, national et international. La quantité d'exportation a augmenté d'une façon significative vers le Gabon et les États-Unis pendant les dernières années. Les feuilles sont exportées principalement par deux villes, Idenau et Campo. À Idenau, environ 600 tonnes de feuilles pour une valeur de 1 800 millions de FCFA sont exportées annuellement au Nigéria. La vente des feuilles légumes est donc une activité ayant une grande valeur économique qui offre des revenus de 450 000 FCFA par mois pour un intermédiaire (travaillant à plein temps). Des méthodes de récolte non adaptées et des pertes de surfaces forestières font que la ressource est sérieusement en danger. Pour résoudre ce problème, un programme de domestication du *Genetum africanum* et *G. buchholzianum* a été développé et réalisé. Les résultats ont démontré que les espèces sont faciles à domestiquer et qu'il existe un potentiel pour l'intégration de ces espèces dans les systèmes agroforestiers.
[*Pour plus d'information sur le Cameroun, voir sous Country Compass*.]

Comores

Les plantes comestibles consommées aux Comores sont le taro, les aréquiers (*Areca* sp.), les agrumes (*Citrus* sp.) et les caféiers sauvages (*Coffea* sp.). Toutes ces espèces poussent à l'état spontané ou subspontané.

La production de confiture et de jus obtenu de *Psidium guajava* alimente une petite industrie de transformation.

Congo, République démocratique du

Dans le sud-ouest du pays, le manioc est le produit de base. La composante lipide de l'alimentation est essentiellement donnée par l'huile des noix de *Elaeis guineensis*.

Coffea arabica

La nourriture obtenue grâce à la cueillette, qui accompagne les produits de base, est saisonnière. Certains fruits et feuilles sauvages sont disponibles pendant toute l'année, tandis que les feuilles des forêts sont principalement disponibles pendant la saison des pluies. Ceux-ci commencent à devenir rares à cause de la grave déforestation causée par la conversion des forêts en terres agricoles pour nourrir la population croissante. Par exemple, le *Gnetum africanum*, qui autrefois était très commun, est devenu difficile à trouver.

Pendant la période pointe de production des fruits, plus de 24 pour cent de l'alimentation des Mbuti est composée par les grains de *Gilbertiodendron*. Les autres plantes alimentaires sauvages importantes sont: *Dioscorea* spp., *Canarium schweinfurthii, Irvingia* sp. et *Elaeis guineensis*. Ces espèces, prises ensemble, composent plus de 80 pour cent de la nourriture obtenue à partir de plantes sauvages.

Congo, République du

Près de 160 espèces, appartenant à 55 familles, sont utilisées pour la nourriture.

Parmi les espèces de feuilles légumes, les plus cueillies, transportées, commercialisées et consommées sont *Gnetum africanum* et *Trilepisium madagascariensis*. Ces feuilles sont coupées en lanières transversales et sont utilisées dans les préparations culinaires en tant qu'ingrédient de l'aliment de base (le manioc, la viande ou le poisson). Les feuilles légumes sont très nutritives et très utilisées. Ce succès fait que les deux espèces les plus appréciées ont pratiquement disparu des écosystèmes proches des principales villes congolaises.

Les sèves et les vins des «lianes à eau» (*Cissus dinklagei, Tetracera podotricha*) sont bien utilisés durant la chasse. Un danger de disparition des espèces par des coupes trop intenses est observé à proximité des villes et des principales voies de communication. La moelle de *Costus ligularis* est également consommée dans le même but sur l'ensemble du pays. Les vins, surtout tirés de plusieurs espèces de palmiers, sont partout mis à contribution, surtout le palmier à huile (*Elaeis guineensis*) et les divers *Raphia.*

Les huiles et matières oléagineuses sont principalement fournies au Congo par le palmier à huile (*Elaeis guineensis*). Les autres espèces qui produisent des huiles sont *Raphia, Allanblackia floribunda* et *Baillonella toxisperma.*

En ce qui concerne *Elaeis guineensis*, la sève est le plus souvent recueillie dans une calebasse (ou autre récipient) insérée sur un axe d'inflorescence mâle sectionné et dont l'entaille est «rajeunie» à chaque transvasement du contenu. Les quantités récoltées sont plus faibles que celles obtenues par d'autres techniques, mais cette technique a l'avantage d'être compatible avec la production de fruits par le même palmier. Le vin est consommé rapidement, le degré alcoolique augmentant progressivement sous l'action de micro-organismes. Bien que souvent cultivée, *Elaeis guineensis* pousse naturellement partout dans le pays, le plus souvent au bord des cours d'eau, dans les jachères ou dans les villages et campements abandonnés.

Hormis le palmier à huile, les principales espèces spontanées aux propriétés oléagineuses en forêt marécageuse sont deux espèces du genre *Raphia*. Elles sont utilisées soit pour l'extraction de l'huile ou, comme l'arachide, sous forme de graines grillées. Elles constituent la base d'une sauce accompagnant le manioc ou la

viande. Ces espèces pourraient être aisément développées et permettraient aux populations des forêts marécageuses de briser leur marginalisation économique.

Les fruits les plus consommés au Congo sont *Afromomum* spp., *Landolphia* sp. (malombo), *Gambeya africana* et *Daryodes edulis* (safou). Les autres fruits importants sont *Coula edulis, Grewia coriacea, Mammea africana, Treculia africana, Treculia obovoidea* et *Tetracarpidium conophorum*.

Les fruits de la plus grande potentialité économique sont, grâce à leur richesse en éléments nutritifs et leurs potentialités de domestication, *Treculia africana, Tetracarpidium conophorum, Treculia obovoidea* et *Coula edulis*. Les fruits les plus rares, qui atteignent donc des prix élevés sur les marchés, sont *Heinsia crinita* et *Trichoscypha* spp.

Les graines de *Cola* spp. sont très populaires et utilisées par la population comme excitant et dans les pratiques fétichistes. La plus grande production du cola a lieu dans la région de la Likouala.

Les condiments utilisés dans le pays incluent *Afrostyrax lepidophyllus, Huagabonii* sp., *Scorodophloeus zenkeri, Irvingia grandifolia* et *Ricinodendron heudelotii*.

Côte d'Ivoire

Les savanes de la moitié nord de la Côte d'Ivoire regorgent d'espèces forestières fruitières. Il s'agit de plantes arbustives, arborées, lianescentes et sarmenteuses. Certains fruits sont consommés à l'état frais (par exemple, *Adansonia digitata, Borassus aethiopum, Detarium microcarpum, Parkia biglobosa* et *Vitellaria paradoxa*); d'autres, par contre, font l'objet de cuisson ou d'extraction pour l'huile, comme par exemple: *Parkia biglobosa* pour la réalisation du soumbala; *Vitellaria paradoxa* pour la réalisation du beurre de karité; *Carapa procera* pour la fabrication du savon et de l'huile pharmacopée; et *Pentadesma butyracea* pour la fabrication d'un excellent beurre alimentaire.

D'autres encore font l'objet d'une transformation industrielle: *Tamarindus*

indica pour le jus de tamarin; et *Parkia biglobosa* pour la réalisation de plaquettes de graines de néré dans le cadre de la prévention contre le goitre.

Gabon

Les fruits les plus consommés au nord-est du Gabon sont *Irvingia gabonensis*, *Scyphocephalium ochocoa*, *Panda oleosa, Gambeya lacourtiana, Pseudospondias longifolia* et *Trichoscypha acuminata*. Les fruits de *Coula edulis* sont partout très appréciés par la population rurale.

La commercialisation des fruits est documentée pour les espèces suivantes: *Aframomum* sp., *Antrocaryon klaineanum, Coula edulis, Dacryodes buetneri, Dacryodes edulis, Gambeya lacourtiana* et *Trichoscypha acuminata*. Les fruits d'*Irvingia gabonensis*, de *Dacryodes buetneri* et de *Dacryodes edulis* sont également exportés.

La plupart des arbres fruitiers poussent spontanément (par exemple, *Aframomum* sp. dans les forêts secondaires ou les vieilles jachères agricoles) tandis que autres sont cultivés (par exemple, *Antrocaryon klaineanum, Dacryodes edulis*).

Les fruits et les amandes d'*Irvingia gabonensis* sont commercialisés et ils sont également exportés en France et en Belgique. Au Gabon, on a réalisé des essais sur la domestication qui n'ont pas eu beaucoup de succès auprès de paysans à cause de la longue période pour la première fructification.

Les feuilles légumes de *Gnetum africanum* font partie des PFNL les plus importants du Gabon. À cause d'une collecte et utilisation intensives, cette espèce, qui se trouve dans les forêts denses, est surexploitée. Les essais de domestication n'ont pas encore abouti aux résultats espérés. La filière commerciale de cette espèce est très porteuse.

L'écorce de *Garcinia klaineana* est très utilisée dans la distillation des boissons alcoolisées à base de vin de palme. L'arbre se trouve dans la forêt naturelle. [*Pour plus d'information sur le Gabon, voir sous Country Compass.*]

Fundación Espavé

Saccharum officinarum

Guinée

La valeur des différents fruits sauvages (e.g. les fruits de *Detarium* et de *Dialium*) atteindrait environ 100 millions de FG.

Les noix de *Cola nitida* font l'objet d'un commerce actif. La consommation nationale varie entre 150 millions et 200 millions de noix, ce qui correspond à 14 noix par tête et par semaine. Les exportations vers le Mali et le Sénégal sont évaluées à 200 millions de noix.

Deux PFNL de *Parkia biglobosa* sont exportés:

- 500 tonnes de graines pour une valeur de 100 FG par kg; et
- 1 000 tonnes de pâte de néré (soumbala) pour une valeur de 100 FG par kg.

La valeur approximative (consommation et exportation) varie entre 350 millions et 400 millions de FG.

La valeur économique du beurre de karité de *Vitellaria paradoxa* correspond à:

- 150 millions de FG pour la consommation (dont 100 millions de FG en autoconsommation); et
- 120 millions de FG pour la production.

Guinée équatoriale

Les fruits comestibles les plus communs sont *Dacryodes edulis* (prune de brousse) et *Mangifera indica* (vraie mangue). Les deux espèces sont généralement plantées hors de la forêt. La prune de brousse, lorsque c'est la saison, vient à la fois du Cameroun et des jardins locaux. Cependant, la majorité de celles qui sont vendues sur les marchés sont cultivées localement – ces fruits se conservent mal et ils doivent être livrés au marché dans un délai d'un ou deux jours après leur cueillette.

Quant aux boissons, on trouve – comme c'est le cas dans toute cette région d'Afrique – le vin de palme. À Bata et à Mbini, deux types de vin de palme sont disponibles:

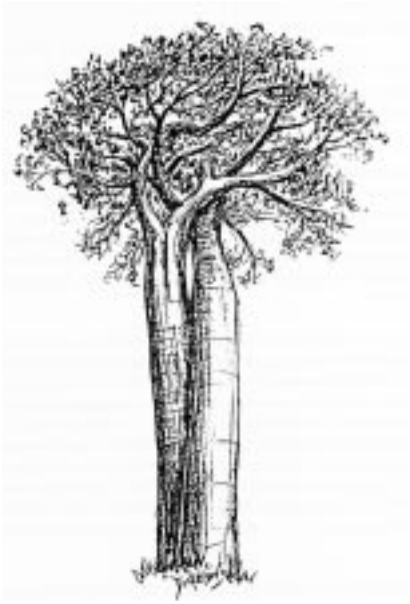
- le «vin du bas», récolté à partir de pousses terminales d'*Elaeis guineensis* abattues; et
- le «vin du haut» provenant de l'inflorescence de *Raphia vinifera* sur pied.

Une autre boisson régulièrement commercialisée est produite à partir des tiges de canne à sucre écrasées (*Saccharum officinarum*). Cet alcool est renforcé par l'adjonction de graines et parfois de bois de *Garcinia kola* qui rend la boisson très amère.

Le piment de brousse (*Piper guineensis*) est utilisé au niveau local. De plus, environ 150 tonnes par an sont exportées au Nigéria. Autres condiments utilisés en Guinée équatoriale sont les graines de *Monodora myristica, Ricinodendron heudelotii, Afrostyrax kamerunensis* et *Mucuna sloanei,* l'écorce de *Scorodophleus zenkeri* ainsi que les feuilles de *Strychnos* spp. Quelques condiments comme *Abelmoschus esculentus, Solanum annuum, Piper longum* et *Cucurbita pepo* sont même cultivés dans des systèmes agricoles de petite échelle.

Les graines d'*Irvingia gabonensis* sont le produit forestier le plus largement vendu en Guinée équatoriale. La forte saisonnalité de ce produit a une incidence significative sur sa vente et sur son prix: pendant la saison des pluies (juin à septembre), lorsque la mangue de brousse est facile à trouver, son prix est de 100 FCFA pour 40 graines; pendant la saison sèche (septembre à décembre), le prix est de 100 FCFA pour 20 graines seulement. Selon l'endroit, les graines d'*Irvingia gabonensis* vendues sur le marché de Bata (nord-ouest de la Guinée équatoriale) sont importées du Cameroun, tandis que les graines vendues sur le

marché du Mbini (sud-ouest du pays) et récoltées dans la région de Rio Muni (sud-ouest du pays) sont plutôt destinées à l'exportation vers le Gabon.



Mali

Parmi les 41 espèces fruitières forestières documentées dans la zone nord-guinéenne au sud du Mali, huit espèces sont à haut revenu: *Adansonia digitata* (les feuilles), *Vitellaria paradoxa* (les noix), *Parkia biglobosa* (les graines), *Eleasis guineensis* (les fruits), *Tamarindus indica*, *Carapa procera* et *Lophira lanceolata* ainsi que *Borassus aethiopum* (divers produits).

Le baobab (*Adansonia digitata*) se trouve dans la région soudanienne du pays où les précipitations varient de 600 à 1 400 mm. Il est un des arbres les plus utiles du pays. Ses feuilles sont quotidiennement utilisées par toutes les populations, tant rurales qu'urbaines. Fraîches, les jeunes feuilles donnent un excellent légume; sèches et transformées en poudre, elles sont vendues comme ingrédient de nombreux mets et sauces. La pulpe du fruit est couramment utilisée dans la préparation de la crème de mil. Les graines jouent un rôle identique aux graines du néré dans la fabrication du «soumbala», mais elles ne sont utilisées que par certaines ethnies de la région. Les quantités auto-consommées de ces différents produits sont importantes. De plus, compte tenu de la forte demande de poudre de feuilles séchées, ce produit procure aux populations rurales un revenu important. Les feuilles fraîches d'*Adansonia digitata* sont récoltées d'avril à octobre. Celles destinées à la production de poudre sont récoltées en octobre avant leur jaunissement.

Le karité (*Vitellaria paradoxa*) est l'essence champêtre de premier choix des populations rurales de la zone soudanienne et soudano-guinéenne. Les amandes, ainsi que le beurre qui en est extrait, font l'objet d'un commerce international. Le beurre de karité est la principale source de matière grasse d'origine végétale. Il est employé dans la préparation des aliments, dans la fabrication du savon, pour les soins médicaux, la fabrication des produits cosmétiques etc. On l'utilise industriellement dans la fabrication du chocolat ou du rouge à lèvres de qualité. Même si la demande pour l'auto-consommation est forte, les transactions commerciales concernant les amandes et le beurre de karité apportent des revenus importants aux populations rurales, mais surtout aux nombreux intermédiaires et grossistes.

Le néré (*Parkia biglobosa*) est l'espèce champêtre la plus caractéristique de la zone soudanienne. Il est entretenu pour faire du fromage végétal, le «soumbala», et utilisé comme condiment dans tous les villages de la région. À ce titre, les graines et le soumbala sont largement commercialisés, ce qui apporte un revenu important aux populations rurales et aux nombreux intermédiaires impliqués dans cette filière. Les graines font l'objet d'un commerce international. La récolte se fait en avril ou mai, quand les gousses sèchent. La cueillette peut durer deux mois et une famille peut obtenir en moyenne 500 kg de graines en bonne saison. C'est surtout la tâche des femmes qui, regroupées en associations d'entraide, se chargent de cette activité en alternance avec le ramassage des noix de karité. Les fruits sont récoltés à l'aide de perches ou en escaladant les arbres.

Le palmier à huile (*Eleasis guineensis*) se rencontre à l'état naturel sur sols bien humides, à proximité immédiate des cours d'eau permanents. La pulpe du fruit du palmier fournit l'huile de palme qui peut apporter un revenu substantiel aux populations. Une partie de l'huile est utilisée dans la préparation des aliments ou sous forme de savon. Le surplus est vendu à l'occasion des foires hebdomadaires.

Le tamarinier (*Tamarindus indica*) est un arbre aux usages les plus multiples au Mali. La pulpe est utilisée dans la préparation de boissons rafraîchissantes, de sirops ou jus et rentrent dans la fabrication de divers produits pharmaceutiques. Les graines sont utilisées dans l'industrie alimentaire, de la laine et du jute, de la colle et en imprimerie.

Maroc

Près de 2 000 espèces de champignons sauvages sont connues au Maroc, mais seulement une minorité a été analysée pour sa potentialité commerciale. Les espèces de champignons sauvages les plus importantes au Maroc sont *Tricholoma caligatum, Boletus edulis, Cantharellus cibarius, Terfezia leonis, Psalliota bispora, Morchella* spp. et *Pleurotus ostreatus.* Actuellement, seulement quatre à cinq espèces sont cultivées à grande échelle.

Environ deux millions de personnes de la population rurale au Maroc sont impliquées dans l'aménagement d'*Argania spinosa*. Cet arbre est apprécié pour sa production d'une huile comestible, qui a une grande valeur nutritionnelle (ainsi que pour la production de plantes fourragères et du bois de chauffe). Les femmes marocaines consacrent 20 millions de journées de travail par an pour l'extraction de l'huile (en moyenne un jour et demi pour la production d'un litre de l'huile).

En 1994, 8 678 tonnes d'épices ont été exportées pour une valeur de 6 973 421 DH. De plus, 900 tonnes de graines de caroube (*Ceratonia siliqua*) ont été produites en 1992.

Mauritanie

Des arbres produisant des fruits comestibles incluent *Boscia senegalensis, Balanites aegyptiaca, Adansonia digitata* et *Sclerocarya birrea*. Les fruits de *Sclerocarya birrea* font l'objet d'un commerce local. La pulpe des fruits, riche en alcool, est fermentée et transformée en bière. Du fruit on peut faire des jus et des confitures.

L'amande du noyau de *Sclerocarya birrea* contient des matières grasses et beaucoup de vitamine C. Elle donne aussi une huile comestible.

Les graines de *Boscia senegalensis* donnent une excellente farine pour la fabrication des repas. En plus, on consomme l'albumen des graines et les feuilles d'*Adansonia digitata*.

Niger

Beaucoup d'espèces forestières, notamment le néré (*Parkia biglobosa*), le baobab (*Adansonia digitata*), sont très riches en protéines, en sucre et en certains oligo-éléments tels que le fer, le manganèse et le zinc. De ce fait, les PFNL augmentent l'apport protidique du régime alimentaire de la population rurale du Niger, qui est essentiellement constitué de céréales, ce qui permet de réduire les déséquilibres alimentaires en protéines et d'améliorer la santé des populations. En période de graves crises alimentaires, la population nigérienne recourt souvent à l'usage de PFNL (feuilles, fruits, noix) de certaines espèces ligneuses et herbacées comme base ou complément alimentaire. Les espèces les plus couramment utilisées sont *Boscia senegalensis* (feuilles et fruits), *Parkia biglobosa* (farine obtenue à partir de la pulpe), *Maerua crassifolia* et *Cenchrus biflorus*.

La plupart des fruits sauvages sont également récoltés pour être vendus sur les marchés locaux. Au niveau des marchés des différentes villes du Niger, une importante filière de commercialisation des fruits de *Ziziphus mauritania, Hyphaene thebaica, Adansonia digitata, Balanites aegyptiaca* et des graines de *Parkia biglobosa* est en train de se développer.

Les graines du néré (*Parkia biglobosa*) sont appelées «la viande du pauvre» à cause de sa teneur élevée en protéines. Le néré se rencontre surtout dans la bande sud des départements de Zinder, Maradi, Dosso et Tillabèry. Les peuplements les plus importants se rencontrent dans les zones humides ou pluvieuses de la région de Gaya et le long des dallols et dans la région de Torodi. Les paysans utilisent cette espèce qui fait partie des biens transmis en héritage. La poudre tirée de la pulpe sert à fabriquer un gâteau et des boissons fraîches. Les graines du néré servent à la fabrication du «soumbala» qui a un arôme très prisé et qui fait l'objet de la fabrication industrielle au Nigéria.

Les feuilles et les fruits du baobab (*Adansonia digitata*) font l'objet d'un commerce organisé. Le baobab, comme le néré, est une espèce complètement intégrée dans le système de production paysan et elle fait également partie des biens légués en héritage. Le baobab et le néré sont connus pour leur richesse en sucre et en certains oligo-éléments tels que le fer, le zinc et le manganèse. De plus, l'écorce fournit des fibres d'excellente qualité. Les plus grands peuplements de baobab sont surtout localisés dans la région de Torodi.

L'espèce végétale la plus importante au Niger est probablement le rônier *Borassus aethiopum.* C'est en raison des multiples utilisations de cette espèce qu'on parle, au Niger, de plante nourricière en citant le rônier. Cette espèce est assez bien représentée. En effet, elle se rencontre dans deux zones naturelles: le Dallol Maouri, au sud du pays, avec un important peuplement de plus de 30 000 ha dont 738 ha de forêt classée. Il constitue la formation la plus importante de l'Afrique de l'ouest; et un deuxième peuplement (forêt de Dezga) d'une superficie de 665 ha, au sud-est du Niger, à la frontière du Nigéria dans l'arrondissement de Matamèye. D'autres peuplements de moindre importance existent, isolés le long du fleuve Niger, dans le Parc W et le long de la rivière Mékrou. Des plantations artificielles ont été réalisées dans les années 1940-1953 à Niamey (Lamordé) et Doutchi. Le rônier est la principale source de bois de service au Niger. Il fournit un revenu monétaire important à des milliers de petits exploitants tout en leur permettant de se nourrir et de s'abriter. Toutes les parties du rônier (stipe, feuilles, pétiole, fleurs, bourgeon terminal, fruits, racines) sont utilisables, mais leur utilisation varie d'une région à l'autre. Les usages clefs du rônier sont notamment l'alimentation humaine et animale et l'artisanat.

République centrafricaine

Des tubercules, des feuilles, des fruits et des écorces sont utilisés pour l'alimentation par la population centrafricaine.

Les tubercules d'ignames *Dioscorea* sp. constituent l'aliment de base chez les pygmées. *Dioscorea* sp. (*ndombi* en banda yanguéré), identifié en forêt du sud de la République centrafricaine, donne des grosses tubercules et peut pénétrer dans le sol à plus de 1,5 m.

Les feuilles de *Gnetum* spp., d'*Hileria latifolia* et de *Dorstenia* sp. sont comestibles et souvent commercialisées au niveau national. À cause de la rareté de *Gnetum buchholzianum* (koko), ces plantes sont en train d'être substituées par *Gnetum africanum* (kali).

Les fruits comme *Gambeya africana, Treculia africana, Canarium schweinfurthii, Afrostyrax lepidophyllus, Irvingia excelsa, Vittelaria paradoxa* (huile et fruit de karité très consommés par les habitants du nord de la République centrafricaine), *Parkia biglobosa* (les graines fermentées sont consommées sous forme de boulettes

noires et très parfumées aux arômes de camembert), sont recherchés pour leurs usages divers, pour leur apport dans l'alimentation et pour leur goût. Le poivre *Piper guineense*, *Xylopia aethiopica* et *Aframomum* sp. sont très recherchés pour l'exportation.

Les écorces de *Khaya senegalensis* et de *Garcinia kola,* sont utilisées comme ferment dans le vin de palme.

Rwanda

Les fruits et champignons sauvages sont surtout consommés par la population pauvre et les enfants. La quantité de fruits sauvages collectée n'est pas connue. Par contre, la production de fruits dans les systèmes agroforestiers a atteint 58 759 tonnes en 1989.

La production de champignons a augmenté pour satisfaire la demande croissante de la population urbaine et rurale. Les champignons les plus cultivés sont *Pleurotes florida* et *Pleurotes pulminarius*, avec une production de 6 tonnes en 1991 (production mondiale: 5 millions tonnes en 1995).

Sénégal

Dans les fruits forestiers, qui sont parmi les PFNL les plus importants au Sénégal, on peut distinguer quatre groupes de produits selon l'importance de la quantité exploitée en moyenne par an, il s'agit:

- du buy, communément appelé «pain de singe» (*Adansonia digitata*), du ditakh (*Detarium senegalensis*), du maad (*Saba senegalensis*) et du nététou (*Parkia biglobosa*) qui ont une production moyenne supérieure à 210 000 kg;
- du dank (*Detarium microcarpum*), du dakhar (*Tamarindus indica*), du sump (*Balanites aegyptiaca*), du sidème (jujube) (*Ziziphus mauritiana*) et du nété (*Parkia biglobosa*) avec une production moyenne comprise entre 95 000 et 45 000 kg.

Il faut noter que la production du nété et du dakhar est faite régulièrement durant ces dix dernières années. Ces produits occupent une place très importante dans l'alimentation des populations.

Le dernier groupe des produits est constitué du:

- solom (*Dalium guineense*), du khougam (*Parkia biglobosa*) et du leung (*Vitex doniana*) pour une production comprise entre 2 400 et 32 000 kg;
- et enfin le reste dont la production est inférieure à 9 000 kg par an, ce sont: le toll (*Landolphia heudelotii*)*,* le nep-nep (*Acacia nilotica*), le alom (*Diospyros mespiliformis*), le ntaba (*Cola cordifolia*) et le néo (*Parinari macrophylla*) avec une production annuelle inférieure à 300 kg

Il faut toutefois rappeler que le nété, le néré, le kougham et le nététou sont tous tirés du même arbre, le *Parkia biglobosa.* Le nété est le fruit du *Parkia biglobosa.* C'est une gousse longue de 25 à 30 cm sur 1,5 à 2 cm de largeur. La pulpe de couleur jaune fournit une farine très riche en glucide (80 pour cent environ), le néré. Cette farine était recommandée à la fin du dix-neuvième siècle comme base de farine lactée pour l'alimentation des enfants. Dans les zones de production, les ruraux l'utilisent dans les bouillies de mil et de riz. C'est l'aliment de soudure par excellence. À nos jours, les paysans prennent, tôt le matin, une bouillie de néré avant d'aller aux champs. Ce repas simple leur permet de résister à la faim jusqu'à leur retour dans l'après-midi. Mélangé à du miel, on lui prête des vertus préventives contre le paludisme.

L'amande extraite des graines du nété, le khougam, fournit après fermentation un condiment appelé «soumbala» ou nététou de grande valeur nutritionnelle (35 pour cent de protides, 29 pour cent de lipides et 10 pour cent de glucides). À ce sujet, il faut noter que l'Institut de technologie alimentaire (ITA) a pu isoler la moisissure et procéder à sa multiplication au laboratoire. Un essai portant sur la fermentation des amendes extraites a donné de bons résultats; ce qui permet d'envisager la fabrication du nététou dans d'excellentes conditions d'hygiène

De façon générale, la production des fruits forestiers, toute espèce confondue, connaît une augmentation régulière depuis 1991, avec une moyenne de 1 800 000 kg par an

Il importe d'insister sur le fait que la production contrôlée est celle qui fait l'objet de commercialisation.

Toutefois, compte tenu des frontières communes avec la Guinée et la Guinée Bissau, il existe, dans les régions de Kolda et de Ziguinchor, un trafic important de produits forestiers, surtout l'huile de palme et certains fruits forestiers. Ce phénomène est accentué par l'existence de nombreux marchés hebdomadaires qui constituent des lieux importants d'échanges pour les populations rurales. Les produits issus de ces marchés sont, par la suite, achetés par les commerçants qui s'acquittent de la redevance forestière pour les acheminer vers les centres de commercialisation. De ce fait, ces produits sont comptabilisés comme exploités au Sénégal. À ce niveau une enquête pourrait être menée pour mieux cerner la quantité réellement exploitée au Sénégal.

Malgré cette situation, l'on enregistre l'existence de quantités importantes de produits importés, conformément à la réglementation. Ces produits sont déversés sur le marché intérieur et contribuent, de ce fait, à la satisfaction des besoins des populations. (*Source:* Étude sur la collecte et l'analyse des données statistiques sur les produits forestiers non-ligneux au Sénégal, janvier 2001, par T. Fall. Projet GCP/INT/679/EC.)

[*Pour plus d'information sur le Sénégal, voir sous Country Compass*.]

Tchad

Les principaux arbres fruitiers connus sont le savonnier (*Balanites aegyptiaca*), le jujubier (*Ziziphus mauritiana* et *Ziziphus spina christi*), le tamarin (*Tamarindus indica*), l'ébénier d'Afrique (*Diospiros mespilliformis*), le palmier doum (*Hyphaene thebaica*), *Faiderherbia albida* (fruit sauvage), le karité (*Vitellaria paradoxa*), le néré (*Parkia biglobosa*), le dattier (*Phoenix dactiliphera*), *Salvadora persica* et *Boscia senegalensis*. La cueillette des fruits au Tchad est une activité pratiquée au niveau national et par toutes les couches sociales et surtout rurales.

Les noix/amandes du karité (*Vitellaria paradoxa*) font partie des oléagineux les plus utilisés au Tchad. Elles sont utilisées principalement pour la fabrication du beurre, mais le sont aussi dans la médecine traditionnelle et moderne, la cosmétique et la savonnerie. *Vitellaria paradoxa* est répandue dans le sud de la zone soudanienne avec des densités variables. Les peuplements les plus denses sont observés, en particulier dans les préfectures de Tandjilé, du Logone oriental, du Logone occidental, et du Moyen-chari où des estimations ont donné 50 millions à 60 millions d'arbres de karité, mais seulement quatre à cinq pour cent sont exploités. Dans les deux tiers de la zone soudanienne, on a évalué à 4,6 millions les *Vitellaria paradoxa* avec une production potentiale de 500 000 tonnes de noix de karité par an.

Le ramassage et la transformation (extraction manuelle de l'huile, fabrication de savon ou de pommades) des noix de karité sont des activités principales pour les femmes. Les revenus obtenus par ces activités ne sont pas négligeables, bien que sa commercialisation soit limitée essentiellement au marché intérieur. Pour une collecte de l'ordre de 120 kg de noix par foyer, on peut estimer des revenus monétaires de la vente entre 5 000 et 20 000 FCFA, soit l'équivalent de 25 à 100 kg de mil achetés au moment des soudures. La part de

National Academy of Sciences

collecte vendue augmente depuis 10 ou 20 ans, avec les besoins monétaires, au détriment de l'autoconsommation.

En tant que condiment, les espèces suivantes sont utilisées au Tchad: *Grewia mollis, Grewia tenax, Bombax costatum, Balanites aegyptiaca* et *Spirlunia platensis*.

Togo

Le karité (*Vitellaria paradoxa*) possède de multiples avantages mais le plus important est son intérêt économique, du fait de l'extraction du «beurre de karité», utilisé aussi bien dans l'alimentation humaine qu'en cosmétique (rouge à lèvres). Les qualités médiocres servent pour la fabrication du savon ou des bougies. On l'utilise également pour fabriquer du chocolat. La pulpe du fruit est consommée par le bétail. Dans les conditions idéales, le rendement par arbre est de 15 kg par an.

La pulpe du néré (*Parkia biglobosa*) contient jusqu'à 60 pour cent de sucre. Les graines sont transformées en une boule noirâtre utilisée comme ingrédient dans les sauces. Le baobab (*Adansonia digitata*) présente de multiples usages alimentaires, avec les feuilles, la pulpe des fruits et les graines. En plus, le baobab a des utilisations variées dans la pharmacopée.

Tunisie

Les graines comestibles du pin d'Alep (*Pinus halepensis*) et de pin pignon (*Pinus pinea*) sont récoltées dans les forêts tunisiennes. Surtout les graines du pin d'Alep sont commercialisées en grandes quantités (10 000 tonnes par an), tandis que seules de petites quantités de pin pignon sont commercialisées à cause de leur disponibilité limitée. La production des graines du pin pignon s'accroîtra dans les années à venir à cause de l'entrée en production des peuplements créés artificiellement au lendemain de l'indépendance.

Environ 13 500 ha des nappes naturelles du caprier *Capparis spinosa* sont exploitées pour la cueillette des câpres. Une partie des câpres est exportée par les industriels en conserve alimentaire.

Les champignons sauvages comestibles sont cueillis dans les forêts humides du nord-ouest. Dans une bonne année, jusqu'à 20 tonnes peuvent être collectées. ●

NEWS AND NOTES

"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.»

(FAO's working definition)

ACTION FOR NATURAL MEDICINES (ANAMED)

Action for Natural Medicines (Anamed) is committed to supporting people in the tropics in being as self-sufficient as possible in meeting their own health needs, and in developing the greatest possible degree of economic self-reliance. Priority is given to working in ways that are in complete harmony with the environment.

Polygala paniculata

Malaysian Timber Bulletin

Anamed seminars:

- promote the protection and cultivation of healing plants and the skilled preparation of, and treatment with, natural medicines;
- support people in becoming more active in the care of the environment;
- support people in becoming more self-reliant with regard to their health and material needs, and at the same time opposes any commercial initiative that continues their dependency on the North; and
- promote local and international cooperation in pursuing these principles.

Natural medicine in the tropics is one of Anamed's recent publications. This practical handbook describes the preparation and use of natural medicines and is available in English, French and German. A poster "Healing Plants in the Tropics" has also been prepared with photographs of the more than 60 medicinal plants that are described in the book, indicating the disorders and diseases for which they are useful.

For more information, please contact:
Anamed, Schafweide 77,
71364 Winnenden, Germany.
Fax: +49 7195 65367.

AGROFORESTREE DATABASE – CALL FOR PHOTOS

Following the launch in 1998 of the Agroforestree Database (a tree species reference and selection guide), the International Center for Research in Agroforestry (ICRAF), with funding from the United Kingdom Department for International Development (DFID), has been working to increase the species coverage and information content.

Version 1.0 of the AF Dbase is available on CD-ROM or directly off the Internet. In version 2.0, which will be released in April/May 2001, the number of tropical trees included has increased from 321 to 502 tree species. However, ICRAF still requires photographic images for a number of taxa and would like to receive submissions in slide, photo or digital formats.

Photographic credits will be included for all images which are incorporated in the database, and two free copies of the CD-ROM database Version 2.0 will be sent to all photographers whose images are included. (*Source:* Forest Information Update [FIU], 19 February 2001.)

For more information, please contact:
Ahmed Salim, ICRAF, Box 30677,
Nairobi, Kenya.
E-mail: A.S.SALIM@cgiar.org;
www.icraf.cgiar.org/treessd/databases.htm

ANTI-CANCER DITERPENE TAXOL

Taxol, a tubulin-binding diterpene originally isolated from *Taxus brevifolia*, has been discovered in the African fern pine, *Podocarpus gracilior*. This is the first report of the occurrence of this compound in plants outside the Taxaceae family. (*Source: Forests Chemical Review*, May-June 2000.)

ARAB ORGANIZATION FOR AGRICULTURAL DEVELOPMENT

The Arab Organization for Agricultural Development (AOAD) is a regional intergovernmental technical organization working under the umbrella of the League of Arab States with a mandate to enhance agricultural development in the Arab region. Its workplan, policies and budget are determined and approved by its General Assembly which is composed of Ministers of Agriculture in the 21 Arab Member States.

Founded in 1972, AOAD's objectives are to strengthen relations and develop cooperation in different agricultural activities to achieve food self-sufficiency and surplus in a framework of regional agricultural and economic integration. In recent years, AOAD adopted a new strategy to cope with regional,

international and political changes and their economic and environmental impact on Arab agriculture. This necessitates further emphasis on areas of food production, environmental conservation, preservation of natural resources, human resource development and implementation of country and regional projects. (*Source: AOAD Quarterly Newsletter.*)

For more information, please contact: Arab Organization for Agricultural Development (AOAD), PO Box 474, Khartoum-Al Amarat, the Sudan. Fax: +249 11 472176; e-mail: aoad@sudanmail.net; www.aoad.org/main.htm

BAMBOO SHELTER – A DEMONSTRATION OF BEST CONSTRUCTION PRACTICE

TRADA Technology is currently carrying out a project, funded by the United Kingdom Department for International Development (DFID) as part of their Knowledge and Research Programme (KAR). The aim of the project is to demonstrate and promote the utilization of bamboo, a low-cost, sustainable resource, in the provision of adequate, affordable, safe and secure shelter for the poorest communities in developing countries.

The question of harvesting existing stands of bamboo sustainably will be addressed as an integral part of the project. In addition, the possibility of a parallel project on sustainable growing and harvesting, to include home-garden bamboo, will also be considered.

The regional focus is South Asia, with work currently under way in southern India. The project duration is three years, and it is hoped to extend the work to northern areas of India, and also to Sri Lanka and Bangladesh.

The main project activities are:

- assessment of bamboo availability;
- socio-economic study;
- design and testing of bamboo elements, joints and structural assemblies;
- investigations and treatment trials to establish effectiveness of different preservative treatment techniques;
- identification of appropriate construction practices;
- design and construction of demonstration buildings;
- participation in preparation of draft bamboo building code;
- arrangement of training programmes for counterpart personnel;
- production of a manual, poster and video illustrating the activities of the project;
- organization of an in-country seminar to disseminate the projects findings.

The work is being carried out in partnership with the Indian Plywood Industries Research and Training Institute (IPIRTI) and Kerala Forestry Research Institute (KFRI).

Bamboo in construction – an introduction
by D.L. Jayanetti and P.R. Follett.

This new publication aims to offer a general introduction to bamboo as a construction material. It is a joint publication of TRADA Technology and the International Network for Bamboo and Rattan (INBAR) and has been prepared as part of a project funded by the United Kingdom Department for International Development (DFID). Copies are available free of charge from TRADA.

For more information, please contact: Mr Lionel Jayanetti, TRADA International, Stocking Lane, Hughenden Valley, High Wycombe HP14 4ND, UK. E-mail: ljayanetti@trada.co.uk; fax: +44 1494 565487.
[*Please see* Non-Wood News *No. 5 for more information.*]

BAMBOO PLANTATIONS DISCUSSION GROUP

This e-mail group is a forum for exchanging information, ideas and opinions about the use of bamboo in plantations.

While bamboo has been exploited from natural stands from time immemorial, only recently have we seen the overexploitation of bamboo forests to provide raw material for bamboo industries. The growth of industries utilizing bamboo requires the sustainable cultivation and management of bamboo resources. Bamboo is increasingly being cultivated in the same way as other agricultural crops; i.e. in large-scale, professionally managed plantations.

The topics of interest to the group, which has over 250 members, include:

- global inventory of bamboo plantations;
- regulatory issues related to bamboo;
- national policies and strategies on bamboo agroforestry;
- environmental impact of bamboo plantations;
- planting material used for bamboo plantations;
- genetic enhancement of bamboo for plantations;
- the socio-economics of bamboo plantations;
- the role of women in bamboo plantations;
- the utilization of bamboo from plantations;
- the technologies implemented in developing and managing bamboo plantations;
- opportunities for plantation development;

- assessment of existing plantations;
- information on bamboo plantation projects;
- harvesting methods and yield of bamboo plantations;
- economic and business analysis of bamboo plantations;
- industries dependent on bamboo as a raw material;
- data linking bamboo to other wood and non-wood forestry crops.

The group is thus an open platform for disseminating information related to bamboo plantations and is open to all individuals: farmers, environmentalists, agronomists, entrepreneurs, industrialists, or anyone with a special interest in bamboo cultivation.

To join, send a blank message to: bamboo-plantations-subscribe@egroups.com *or* e-mail the group moderator Dr Victor Brias: brias@skynet.be; http://groups.yahoo.com/group/bamboo-plantations

BENEFIT-SHARING ARRANGEMENTS IN THE FIELD OF NON-WOOD FOREST PRODUCTS

FAO's Non-Wood Forest Products Programme recently prepared an overview of benefit-sharing arrangements (BSA) in the field of non-wood forest products.

In the first part of the study, the concept of BSA is defined by describing its background (the Convention on Biological Diversity) and the main international actors (companies, non-governmental and international organizations.

This is followed by an analysis of five case studies that illustrate a benefit-sharing arrangement:

- three cover medicinal plants:
- the example of *Prunus africana* in the Mount Cameroon region, Cameroon;
- sharing with the Kani ethnic group (India): the example of *Trichopus zeylanicus*;
- sharing with the Se Dang ethnic group (Viet Nam): the example of *Panax vietnamensis:* a new ginseng?;
- one with bioprospecting (Bioprospecting in Suriname); and
- one with ecotourism (Ecotourism with Conservation International).

The same methodology (or framework) of analysis was applied to these five studies.

The third part of the study is dedicated to a global assessment of the case studies, e.g. to understand the lessons to be learned. To do that, the study compared the social, political, ecological, economical and technological aspects within the framework applied above. (*Source: Benefit-sharing arrangements (BSA) in the field of non-wood forests products – an overview*, by Alexandre Stipanovich, FAO Volunteer, July 2000.)

For more information, please contact FAO's NWFP Programme at the address given on the first page.

BOREAL FOREST DIRECTORY

A concise directory is available covering 120 Taiga Rescue Network participant organizations and their activities. The directory provides up-to-date contact details and information on fields of work, areas of interest and specialities.

For more information and to purchase a copy, please contact:
Taiga Rescue Network, Box 116, 962 23 Jokkmokk, Sweden.
E-mail: taiga@ajtte.com

BUSHMEAT UTILIZATION DEPLETES WILDLIFE IN EASTERN AND SOUTHERN AFRICA

Many wildlife populations in eastern and southern Africa are facing a lean future. The illegal killing of wild animals for meat, the so-called use and trade of "bushmeat", is believed to be one of the greatest direct causes of the decline of wildlife numbers outside protected areas.

In order to gather more substantial information on the situation, Trade Records and Analysis of Flora and Fauna in Commerce (TRAFFIC) conducted a review on trade and utilization of wild meat in seven eastern and southern African countries (Botswana, Kenya, Malawi, Mozambique, United Republic of Tanzania, Zambia and Zimbabwe). The study, *Food for thought: the utilisation and trade of wild meat in eastern and southern Africa,* by Rob Barnett, TRAFFIC East/Southern Africa*,* was released in July 2000.

This study documents the utilization of wild meat in the region, its economic value to rural communities and the impact of its harvest on protected areas and individual species valued in the trade.

A total of 23 surveys were conducted from 1997 to 1998, of which 16 were focused on the illegal use of wildlife. A diversity of rural and urban areas was targeted and approximately 6 000 respondents contributed to the collection of baseline data.

Versatile source of food and protein

A wide variety of species – from insects, rodents and birds, to duikers, elephants and impalas – are utilized regularly throughout the areas studied. Bushmeat also affects a wide range of communities, from traditional hunter/gatherer societies, to agropastoral and pastoral communities, as well as urban centres in the region.

Among the majority of the people, bushmeat is recognized as a valued

resource and consumed regularly on a daily, weekly or monthly basis. In many areas bushmeat also represents the only viable source of meat protein, with domestic meat being prohibitively expensive and largely unavailable.

Furthermore, in six of the seven countries surveyed, bushmeat was found to be much cheaper than domestic meat. The study found that the poorer the household, the greater its reliance on bushmeat. During times of economic hardship, droughts and famine, bushmeat is relied upon to an even greater extent.

Legal game meat production

All the countries surveyed legally produced game meat through ranching, farming, cropping/culling, licensed hunting or problem animal control initiatives. Such schemes collectively yield about 8 500 tonnes of meat annually, with an estimated local value of nearly US$7.7 million.

Game meat production in Zimbabwe (2 925 tonnes per year) represents a substantial and growing industry. It is economically more favourable compared with other land uses such as farming and livestock ranching in semi-arid areas. However, the study found that the other countries surveyed have a negligible game ranching, farming and cropping sector owing to unfavourable wildlife ownership and land tenure laws. In these countries, wildlife is government-owned with only limited and, in many cases, short-term user rights given to landholders. When a continuing uncertainty about the retention of wildlife user rights persists, landholders remain reluctant to invest in costly start-up infrastructure.

Game meat also results as a by-product from licensed hunting. All the countries surveyed have legislation allowing low-cost licensed hunting by citizens. However, due to the subsidised cost of licences, licensed citizen hunting can be open to misuse.

Rights for landholders

This study recommends that wildlife ownership be more widely transferred to landholders and that secure land tenure needs to be formalized in legislation. This would prompt an interest among landowners and holders to invest in the sustainable management of the wildlife resource for meat production.

Once benefits increase to landholders, wildlife can play an important sustainable role in community development and, by doing so, ensure its continued survival. Without it, wildlife will continue to be seen as a freely exploitable, uncared-for resource that benefits only those who use it first.

Without a dynamic and proactive response to the bushmeat issue in the region, it is likely that the countries of this study will lose not only a valued natural resource, but also a vital community development option.

The study emphasizes the necessity for a more equitable distribution of donor funding for this critical conservation and social issue, with greater collaboration among the conservation and community development government departments, non-governmental organizations and professionals. (*Contributed by:* Maija Sirola, Communications Officer, TRAFFIC International.)

For more information, please contact:
TRAFFIC East/Southern Africa – Kenya,
c/o Ngong Racecourse, Ngong Road,
PO Box 68200, Nairobi, Kenya.
Tel./Fax: +254 2 577943;
e-mail: traffic@iconnect.co.ke;
www.traffic.org

[*Please see* Non-Wood News *No. 5 for more information.*]

CERTIFICATION OF NWFPS

A forthcoming manual on NTFP certification

This manual is a product of Rainforest Alliance's NTFP Marketing and Management Project, which was supported by the United States Agency for International Development (USAID). The purpose of the project was to explore the feasibility of NTFP certification, with a principal geographic focus on Latin America.

The manual is organized into six sections. The first is an introduction to certification systems, which traces the evolution of timber certification and draws out relevant lessons for NTFP certification. Section two introduces the guideline development process, and includes the final draft generic guidelines, indicators and verifiers by plant class, as well as an example of species-specific guidelines developed for maple syrup. Section three relates experiences from field-testing the guidelines in Mexico (chicle), Bolivia (Brazil nut) and Brazil (palm heart), including some of the lessons learned.

Section four expands the focus of the manual to incorporate a range of temperate as well as tropical NTFP species profiles from around the world. The species profiles examine unique ecological, social, cultural, and marketing elements – and in so doing, portray the enormous diversity in NTFPs – as well as the potential, or incompatibility, of certification to act as a tool for promotion of environmental and social objectives in each case. The species represent not only geographical diversity, but different classes (resins, roots, bark, herbs, fibres), markets (subsistence, local, regional, international), uses (e.g. medicinal, edible, craft, fibre), and sources (primary forest, secondary forest, fallow).

Section five examines the "core elements" of NTFP certification, with subsections covering ecological, social, marketing, and technical issues. An additional section in the "Social Elements" chapter highlights the importance of NTFPs to subsistence livelihoods in both the North and the South.

The manual concludes with a review of central lessons learned, summarizing some of the greatest opportunities and challenges afforded by NTFP certification. (*Source:* from the Introduction to: P. Shanley, S. Laird, A. Pierce & A. Guillen, eds. *The management and marketing of non-timber forest products: certification as a tool to promote sustainability.* RBG Kew/WWF/UNESCO People and Plants Series No. 5. [in press])

NEWS AND NOTES

For more information on this publication, please contact:
Trish Shanley, PO Box 6596 JKPWB, Jakarta 10065. Indonesia.
E-mail: Trishanley@aol.com

Certificación de PFNM

La Oficina regional de la FAO para América Latina y el Caribe (RLAC) está realizando en América Latina un estudio prospectivo de experiencias de manejo sostenible y certificación de Productos Forestales No Madereros (PFNM).

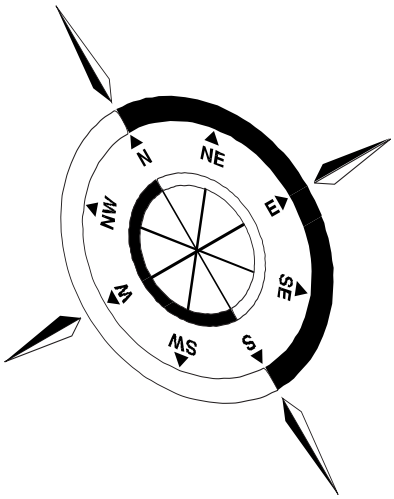
A través de una revisión bibliográfica y de la información disponible en Internet, se hará una recopilación de la información sobre el estado de los actuales procesos en materia de manejo sostenible de PFNM y su certificación, en bosques naturales, bosques plantados o fuera de los bosques. De manera paralela, a través de la red internacional del Consejo de Manejo Forestal (FSC) y de otros organismos o instancias de certificación, se hará una recopilación de procesos avalados y certificados, o que se encuentran en proceso de evaluación.

Se espera obtener resultados generales en el ámbito de las experiencias actuales de manejo sostenible y certificación en América Latina, y de los proyectos específicos que se encuentren en proceso de evaluación por medio de la certificación.

Para más información, dirigirse a:
Torsten Frisk, Oficial Forestal Superior, Oficina Regional de la FAO para América Latina y el Caribe,
Casilla 10095, Santiago, Chile.
Fax: +56 2 3372101/2/3;
correo electrónico:
Torsten.Frisk@field.fao.org

CURRENT TRENDS IN NTFP DEVELOPMENT – A SURVEY

During the implementation of various NTFP activities in recent years, both CIFOR and ProFound have come across a demand for up-to-date strategic information among international donors,



non-governmental organizations (NGOs) and local groups concerning the development and conservation potential of NTFPs.

Consequently, these two organizations teamed up in 2000 to carry out a survey on the current status and trends concerning NTFPs in the development and research agendas of key donors and NGOs.

CIFOR's programme Forest Products and People (FPP) undertakes collaborative research to assess the role and potential of NTFPs as tools for development and for conservation (see www.cifor.org/research/productsandpeople/).

ProFound's programme on NTFPs focuses on strategy development and capacity building in community-based NTFP development, e.g. through the establishment of local networks in Asia, Africa and Latin America (see, for instance, www.NTFP.org).

During the first phase of the survey, a questionnaire was distributed to all organizations that, according to CIFOR's and ProFound's knowledge, support or carry out NTFP-related activities.

Based on the response to this questionnaire, in-depth interviews with a number of key players will be carried out in the first half of 2001. Organizations that have not yet received a questionnaire, and are of the opinion that they can offer valuable experiences to be incorporated in the survey, are kindly requested to submit a request for a questionnaire to ProFound (e-mail: profound@knoware.nl).

CIFOR's FPP programme considers international donors and NGOs as key clients for its research outputs, and expects that the results of the survey will contribute to an improved matching of the programme's outputs to the information requirements of those clients. At the same time, it is envisaged that the output of the survey will provide international donors and key players a worldwide overview of NTFP-related development activities, thus enabling more effective and efficient investment of time and money.

The principal output of the survey will be a CIFOR special publication (co-authored by ProFound), comprising:

- status and (investment) trends of NTFP projects;
- analysis of the underlying assumptions of these projects;
- assessment of lessons learned, and changing perceptions and expectations regarding NTFP-based development activities and policies;
- identification of overlap of activities and neglected aspects/issues;
- assessment of information requirements.

(*Contributed by:* Eric van Poederooijen, ProFound.)

For more information, please contact:
Mr Eric van Poederooijen, ProFound, HoogHiemstraplein 128, Utrecht 3514 AZ, the Netherlands.
Fax: +31 30 272 0878;
e-mail: profound@knoware.nl
[*Please see under International Action for more information on CIFOR.*]

DIETARY SUPPLEMENTS FROM TREES IN URBAN AND PERI-URBAN AREAS

This note is based on research funded by DFID UK – Researchable constraints to the use of forest and tree resources by poor urban and peri-urban households in developing countries (ZF 0136) April-July 2000.

NEWS AND NOTES

In response to a request from the Forestry Research Programme (FRP) of the Renewable Natural Resources Knowledge Strategy, research was conducted with the purpose: "To understand the role that forest products play in their livelihoods, both as providers of goods and services, and as the focus of occupations in order to define future policy and research priorities to benefit the poor in urban and peri-urban areas."

Case studies of forest and tree product use and occupations in six cities within FRP target countries (Mexico City, Mexico; Feira de Santana, Brazil; Kumasi, Ghana; Harare, Zimbabwe; Kathmandu, Nepal; and Calcutta, India) were carried out.

The fieldwork consisted of:

- discussions with key informants (health workers, teachers, NGOs);
- panel discussion groups, with six to ten people in each; and
- questionnaire for 30 households relating to household data and information for six to ten products and three to five occupations identified.

A workshop lasting one and a half days was held to discuss the results of the case studies with a group of people interested in and knowledgeable about forest and tree products or urban poverty and development and also to identify researchable constraints.

Looking at the findings by the main categories of use of forest and tree products and employment in their supply, the following points were noted for foodstuffs:

- Despite the variety of forest and tree foods being consumed – mushrooms, bushmeat, fruits, alcohol, etc. – most are relishes, not staples, and are consumed in modest amounts.
- "Wild" fruits from urban trees in gardens and public land can be important to the quality of nutrition through the provision of vitamins, especially for children and adolescents.
- Plants, barks and herbs as medicines can be both a first recourse when ill, as well as the last resort when formal medicine offers no further hope (AIDS). Traditional medicines offer not just material comfort, but are often seen as psychologically comforting. Indeed, distinguishing between the psychic and physical dimensions of "traditional", "alternative" and homeopathic medicines is often difficult.
- Niche markets exist for high-value relishes – for example honey, mopane worms, bushmeat – thus offering opportunities for employment in the marketing chain. That said, most of the work done in the marketing chain is carried out near the point of origin in the rural (and peri-urban) areas (smoking, distilling, refining, extracting, etc.). Moreover, forest and tree foodstuffs tend to be harvested seasonally, so that jobs are not permanent.
- There may be some scope for processing fruits – for example, ice creams and lollies flavoured with fruits (e.g. mangaba in Brazil), or sweet-making.
- In peri-urban areas, most such foods are gathering by household members, rather than income earners.
- In medicine retailing, much of the value added arises in the knowledge of the healer/physician dispensing herbal and plant remedies, rather than in the actual collection and marketing of the products.

After the workshop consultation, the following researchable issues were identified:

- The role of "wild" fruits in the nutrition of children and adolescents – the nutritional value of fruits has been researched but less work has been done on the use and consumption of "wild" fruits.
- Little is known about the role of trees in food security, such as coconut, mango, jackfruit, etc. in the diets of the urban poor.
- The potential for income generation, such as the preservation and processing of "wild" fruits into sweets, ice creams and lollies to add value.

(*Contributed by:* Steve Wiggins and Georgina Holt, University of Reading.)

For more information, please contact: Ms Georgina Holt, Research Fellow, Department of Agricultural and Food Economics, University of Reading, PO Box 237, Reading RG6 6AR, UK. Fax: +44(0)118 975 6467; e-mail: g.c.holt@reading.ac.uk

[*Please see under Recent Events for more information on this workshop.*]

ÉCHANGES DES PFNL ENTRE L'AFRIQUE SUBSAHARIENNE ET L'EUROPE

Parmi les nombreux changements induits par la mondialisation et l'internationalisation des échanges, il y a la croissance de la demande des produits «porteurs d'identité» par les Européens. Cette demande ouvre des opportunités intéressantes pour les produits des paysans du Sud. C'est le cas des produits forestiers non ligneux (PFNL) de l'Afrique subsaharienne importés depuis plusieurs années par certains pays européens. Une étude ménée par la FAO avec le support du Programme régional pour l'environnement en Afrique centrale (CARPE) aborde l'évaluation de ces échanges et plusieurs aspects liés à ce commerce en Europe. Parmi les PFNL importés, on distingue les PFNL principaux et les PFNL secondaires. Les premiers sont les plus nombreux et les plus importés: 21 le sont par la France, 10 par la Belgique, 15 par le Royaume-Uni, 11 par le Portugal et six par l'Espagne. Les quantités importées ont été évaluées à 31 776 tonnes dont

22 920 tonnes sont importées par le Royaume-Uni, 8 565 tonnes par la France, 166 tonnes par la Belgique, 114 tonnes par le Portugal et 11 tonnes par l'Espagne. Ces quantités ont généré un chiffre d'affaires de 96 424 251 $EU dont 75 446 800 $EU par le marché du Royaume-Uni, 19 221 667 $EU par le marché français, 835 667 $EU par le marché portugais, 72 148 $EU par le marché belge et 147 969 $EU par le marché espagnol. Ces chiffres d'affaires pourraient progresser sous deux conditions: l'ouverture du marché actuel aux Européens et l'organisation *sine qua non* de la production en Afrique. Celle-ci doit permettre une adéquation entre l'offre et la demande, actuellement déficitaire. Cet objectif ne peut être atteint qu'au travers la conjonction entre la modernité (utilisation du «marketing») et la tradition (maintien du modèle actuel).

Aussi, cette étude propose un label CENDEXPPA, sur lequel sera bâtie la politique de communication des PFNL en Europe. De plus, elle doit garantir l'origine paysanne des PFNL exportés, la traçabilité, la protection de l'environnement et celle des intérêts des paysans. Il sera délivré aux entreprises assurant depuis plusieurs années le lien entre les marchés régionaux ou nationaux et les unités de production villageoises. Accompagnées et soutenues par les organismes internationaux, elles devront maîtriser d'abord les règles du commerce international. Après, elles devront centraliser les produits des paysans, comme à l'accoutumée, et les exporter vers l'Europe, soit sous forme d'ingrédients, soit sous forme de produits finis. Ainsi, elles créeront des emplois dans les villes, contribueront au développement de l'économie rurale et à la participation des paysans au processus de la mondialisation sans sacrifier leurs acquis culturels. (*Source:* Tabuna, H. 2000. *Évaluation des échanges des produits forestiers non-ligneux entre l'Afrique subsaharienne et l'Europe.* FAO, Bureau régional pour l'Afrique. Accra. 91 pages.)

E-CONFERENCE ON GLOBALIZATION, POVERTY AND DEVELOPMENT

The Panos Institute London and the World Bank cosponsored a month-long public electronic conference on "Globalization, development and poverty" in May 2000. This e-conference, the first in a proposed series on this topic, brought together activists, scholars, development specialists, staff of the World Bank and other international institutions, the media and non-governmental organizations (NGOs).

Its goal was to chart the dimensions of the broad public debate on the impact of globalization on the world's poor, so as to permit a longer, more focused and more productive public discussion of these issues.

The themes covered during the four weeks of the discussion were:

- Globalization, development and poverty: what do we know?
- Poverty, basic needs and development.
- Modes of development.
- Whose development? Globalization, empowerment and the poor.

The Panos Institute is an independent NGO working to stimulate open debate on development issues, and particularly to facilitate access to such debates by people in developing countries. Panos London has set up three autonomous regional centres: Southern Africa (Lusaka), South Asia (Kathmandu) and Eastern Africa (Kampala). These in turn are setting up satellite offices.

For more information, please contact: Panos London, 9 White Lion Street, London N1 9PD, UK.

Fax: +44(0)20 7278 0345; e-mail: panos@panoslondon.org.uk; www.panos.org.uk; http://vx.worldbank.org/cgi-bin/lyris.pl?enter=globalization&text_mode=0

E-CONFERENCE ON INTERVENTION OF TECHNOLOGY IN MOUNTAIN AREAS

The e-conference on "Intervention of technology in mountain areas: strategies for developing fresh approaches and mainstreaming of local innovations in the Asia Pacific Region (ITMA)" was organized by the Asia Pacific Mountain Network (APMN)/International Centre for Integrated Mountain Development (ICIMOD) and took place from 5 February to 6 March 2001.

This e-conference: a) brought together knowledge and experiences from mountain areas, particularly in the Asia Pacific region; b) served as a forum for international discussion by diverse stakeholders on the key issues related to technology interventions in the diverse but fragile mountain ecosystems; and c) discussed strategies as to how modern technologies and local innovations could be used to improve livelihoods.

Each weekly discussion had a broad theme:

- Large-scale interventions, regional, national and corporate interests versus local mountain communities and downstream municipalities.
- Who takes responsibility? Who benefits?
- Technology for peace and development.
- Integrating traditional local knowledge and new technologies and empowering mountain communities.

For more information, please contact: Sangeeta Pandey, Documentation Officer/Web Person, International Centre for Integrated Mountain Development (ICIMOD), Jawalakhel, Kathmandu, Nepal.

NEWS AND NOTES

E-mail: sangeeta@icimod.org.np; www.icimod.org.np; www.icimod.org.sg; *or* www.mtnforum.org/apmn/e-conference.htm

E-CONFERENCE ON POVERTY ALLEVIATION AND SUSTAINABLE DEVELOPMENT: EXPLORING THE LINKS

An e-conference on "Poverty alleviation and sustainable development" was organized by the International Institute for Sustainable Development in January 2001. The outcome of the e-conference was presented to senior Canadian policy-makers at a workshop in Ottawa on 23 January 2001.

The following themes were covered during the conference:

- Five decades of underachievement.
- The way forward: a sustainable development framework.

For more information, please contact: International Institute for Sustainable Development, 161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4.
Fax: +1(204)958 7710;
e-mail: info@iisd.ca;
www.iisd.ca/linkages/;
www.iisd.org/pe/pov_sd/e_conference.htm

ENCYCLOPEDIA OF BIODIVERSITY

In October 2000, Academic Press published a monumental five-volume reference work, *Encyclopedia of biodiversity*, with 4 700 pages including more than 300 articles each with bibliography and a glossary of 3 000 entries.

Encyclopedia of biodiversity brings together, for the first time, a study of the dimensions of diversity with examination of the services biodiversity provides, and measures to protect it. Major themes of the work include the evolution

National Academy of Sciences

of biodiversity, systems for classifying and defining biodiversity, ecological patterns and theories of biodiversity, and an assessment of contemporary patterns and trends in biodiversity.

The project was led by Professor Simon Levin, who is Moffett Professor of Biology at the University of Princeton and Director of the Princeton Environmental Institute.

(This encyclopedia complements the United Nations Environment Programme publication, *Global biodiversity assessment*, by V.H. Heywood *et al.*, 1995, Cambridge University Press, but is more extensive.)

To order a copy or for more information, please contact:
Academic Press Inc., Order Fulfillment Department, 6277 Sea Harbor Drive, Orlando, Florida 32887, USA.
Fax: +1 800 874 6418;
e-mail: ap@acad.com;
www.academicpress.com/ecology/

EUROPEAN TROPICAL FOREST NETWORK (ETFRN)

In January 2001, the European Tropical Forest Network produced a special issue of *ETFRN Newsletter* devoted to non-timber forest products. The Institute for World Forestry was in charge of the guest editing.

For more information, please contact: Ms Christiane Then; Institute for World Forestry, Federal Research Centre for Forestry and Forest Products, Leuschnerstr. 91, D-21031 Hamburg, Germany.
Fax: +49 40 73962 480;
e-mail: then@holz.uni-hamburg.de

EXPLORING THE VALUE OF URBAN FOREST PRODUCTS

A new study based in Baltimore, Maryland, United States has reported that many urban residents collect, use and even sell urban non-timber forest products (NTFP) such as fruits, nuts, mushrooms, medicinal plants, vines, seedlings and decorative greens and cones. These products provide important economic, nutritional, recreational, educational and cultural benefits to residents, and represent an often overlooked value of the urban forest.

Foresters and researchers have long documented a number of benefits provided by urban trees and forests, from pollution control to wildlife habitat to beauty. But, until recently, scant attention had been paid to the role and value of products from the urban forest. In an effort to overcome this gap in knowledge, Community Resources, a regional non-profit organization in the United States, undertook a detailed study during 1998 and 1999, with support from the National Urban and Community Forestry Advisory Council. In this study, Community Resources staff conducted more than 100 interviews, field observations and market visits to uncover the uses, benefits and values – both monetary and personal – of urban NTFPs.

The project aims to help environmental professionals, urban land managers and policy-makers gain a better understanding of the potential importance of urban forest products. This will lead to better policies and management strategies that promote sustainable urban forest use.

NEWS AND NOTES

The key findings were:

- More than 103 products are currently collected by individuals and organizations in Baltimore City, including: edible products (43 percent), medicinal products (8 percent), horticultural or nursery products (31 percent) and craft and decorative products (18 percent).
- Collectors include public agencies, non-profit organizations and a wide diversity of individuals.
- Products are collected from street trees, park trees, house gardens, vacant lots, roadsides and forests.
- Direct net value was calculated for 60 products.
- The value of products ranges from about US$0.70/kg for pokeweed (*Phytolacca americana*) to more than $22/kg for some seeds and woodland mushrooms.
- Net annual per tree values range from $4/year for an average mulberry tree to more than $103 per year for mature Chinese chestnut, apricot and peach trees.
- Urban forest product collection also provides important educational, nutritional, cultural and recreational benefits, which were not included in the dollar values above.
- Key issues surrounding urban NTFP collection include the lack of collector empowerment, potential conflicts between collectors and property owners, health and toxicity issues, and sustainable harvest and ecological impact issues.

For more information, please contact: Mr Paul Jahnige, Community Resources, 4900 Wetheredsville Road, Baltimore, MD 21207, USA.
Fax: +1 410 448 0874;
e-mail: info@communityresources.org;
www.communityresources.org/ntfp.htm

FOREST INFORMATION UPDATE (FIU)

Forest Information Update is a free weekly e-mail newsletter sent to people interested in the inventorying and monitoring of natural resources. FIU is produced by Forest Information Services and is supported by organizations, agencies and individuals working in the natural resources field.

FIU is currently sent to about 4 000 e-mail addresses worldwide. Many of these recipients forward FIU to their own mailing lists.

Back issues of FIU may be found at: www.foresters.org/fiu/index.htm

For more information, please contact: H. Gyde Lund, Forest Information Services, 8221 Thornwood Court, Manassas, VA 20110-4627, USA.
Fax: +1 703 257 1419;
e-mail: gklund@att.net;
http://home.att.net/~gklund

FORESTS AND LIVELIHOODS: A NEWSLETTER OF FORESTACTION

Forests and Livelihoods is a journal for the forestry sector in Nepal to be published in English and distributed widely in Nepal as well as in other countries. Its goal is to promote pluralistic approaches in the management of forest resources and the conservation of biodiversity. The newsletter provides an interactive forum for policy-makers, foresters, social scientists, forestry projects, non-governmental organizations, university teachers, researchers, forestry entrepreneurs, and other actors in the forestry sector to synthesize, document and disseminate innovative ideas, perspectives and lessons gained through research and various forms of experience. The targeted readers are those who work in forestry, biodiversity and rural development.

The main aspects on which the newsletter aims to focus include the policies and practices of community forestry, biodiversity conservation, agroforestry, private forestry and watershed management. Issues related to technical, social, economic, political, ecological and biological dimensions of forest resource use, conservation and management are addressed depending on the importance and leverage of the topic in current affairs. Articles may be submitted in English or Nepali and should be around 1 500 words in length.

ForestAction aims to sustain the production of the newsletter through subscription by expanding the readership base.

Established in July 2000, Forest Resource Studies and Action Team, Nepal (ForestAction) is a core team of forestry professionals and activists associated with Bikalpa, a registered network/membership-based organization working in livelihood issues. ForestAction's dream is improved forests and rural livelihoods, which is possible through the democratization of forest-related decision-making processes at both the micro and macro levels. This newsletter is one of the key areas of ForestAction's interventions.

For more information, please contact: Krishna Pd. Paudel, Course Coordinator, ForestAction, Bikalp, Nepal.
E-mail: kppaudel@hotmail.com.np or hemant@infoclub.com.np;
http://iufro.boku.ac.at/iufro/spdc/ideas.htm

NEWS AND NOTES

FORESTS, FOOD SECURITY AND SUSTAINABLE LIVELIHOODS

A recent *Unasylva* (Vol. 51 No. 202) theme was "Forests, Food Security and Sustainable Livelihoods".

Among the articles included were:

- K. Warner – *Forestry and sustainable livelihoods.*
- E.H. Sène – *Forests and food security in Africa: the place of forestry in FAO's Special programme for Food Security.*
- F. Egal, A. Ngom and P.D. Ndione – *Integration of food security and nutrition in forestry planning: the role of participatory approaches.*
- L. Lipper – *Forest degradation and food security.*
- D. Gonzáles Posso – *Coca, deforestation and food security in the Colombian Amazon region.*
- Y.B. Malla – I*mpact of community forestry policy on rural livelihoods and food security in Nepal.*
- D.V. Vladyshevskiy, A.P. Laletin and A.D. Vladyshevskiy – *Role of wildlife and other non-wood forest products in food security in Central Siberia.*
- C. Danks – *Community forestry initiatives for the creation of sustainable rural livelihoods: a case from North America.*

For more information, please contact: Mr Stephen A. Dembner, Publications and Information Coordinator, Forestry Department, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy. Fax: +39 0657053024/0657052151; e-mail: steve.dembner@fao.org; www.fao.org/docrep/X7273e/X7273e00.htm

FUNDACIÓN ESPAVÉ

La Fundación Espavé es una ONG, una organización sin animo de lucro que trabaja con actores locales y regionales del Pacífico colombiano y se ha especializado en la identificación de alternativas para el manejo, apropiación territorial y aprovechamiento sostenible de los recursos naturales, a través de la capacitación, asesoría, investigación y validación de experiencias.

Espavé es el nombre dado en lengua embera al *Anacardium excelsum* (Caracolí), un árbol de la familia Anacardiacea, originario de América, y que se caracteriza por su gran tamaño. Las comunidades indígenas y afrocolombianas del Pacífico lo emplean principalmente para la construcción de diferentes tipos de embarcaciones, canoas y botes, medios de transporte y de comunicación fundamentales para estos pueblos.

La Fundación, que colabora con diferentes organizaciones y grupos sociales de la región del Pacífico colombiano, dirige su acción hacia cuatro áreas estratégicas:

Recursos del bosque: orientada a la búsqueda de alternativas productivas, culturales y sociales a partir del manejo y uso sustentable de los recursos del bosque, comprendidos los recursos madereros, agroalimentarios y no madereros. Líneas de acción prioritarias dentro del área son la seguridad alimentaria y la transformación y comercialización alternativa de algunos recursos del bosque.

Manejo territorial: orientada a validar y construir metodologías propias para los procesos de ordenamiento y manejo territorial de las comunidades del Pacífico colombiano. Líneas de acción prioritarias al respecto son los sistemas productivos, los planes de manejo y el ecoturismo.

Debate regional: orientada al análisis y reflexión permanente de los procesos sociales, económicos, ambientales y culturales de la región.

Desarrollo institucional: orientada al apoyo de los procesos de fortalecimiento organizativo y de gestión de las diferentes organizaciones de las comunidades del Pacífico colombiano.

La Fundación Espavé, en colaboración con la Fundación Swissaid, ha publicado *Principales plagas que afectan las plantas aromáticas, medicinales y de condimento en el Chocó.* Nuevas publicaciones, que son uno de los resultados del Programa Bosque Húmedo, están orientadas a la búsqueda de alternativas en materia de seguridad alimentaria a partir de la recuperación de tradiciones productivas sostenibles en el Pacifico colombiano, así como al fortalecimiento del debate sobre los programas y proyectos que, para el desarrollo de esa región del Pacifico, se proponen desde distintas vertientes.

Fundación Espavé

Para más información, dirigirse a: Fundación Espavé, Calle 47 Nº 42-56, Torres de Bomboná, Oficina 213, Medellín, Colombia. Fax: +57 094 239 7025; correo electrónico: fespave@epm.net.co; www.geocities.com/CapeCanaveral/Hangar/8721/

NEWS AND NOTES

GLOBAL ASSESSMENT OF BAMBOO RESOURCES

More than 1 000 known bamboo species grow over wide areas of Africa, Asia and the Caribbean and Latin America and contribute to the livelihoods of millions of people. Despite its economic significance, statistics on bamboo resources, especially in natural stands, are very poor. Classified as a "non-timber forest product", bamboo is not routinely included in resource inventory. A good and transparent estimate of bamboo and rattan resources has yet to be developed.

As a first step to improve the information available, the International Network for Bamboo and Rattan (INBAR) and the UNEP World Conservation Monitoring Centre (UNEP-WCMC) are jointly initiating a project to estimate the magnitude and distribution of bamboo resources within natural stands. In the first instance, the project will combine information on the distribution of individual taxa with floristic data and global data on forest cover to generate a global distribution and estimated total area of forest containing bamboo.

For more information, please contact: Nadia Bystriakova and Valerie Kapos, UNEP-WCMC, 219 Huntingdon Road, Cambridge CB3 0DL, UK. Fax: +44(0)1223 277136; e-mail: nadia.bystriakova@unep-wcmc.org or val.kapos@unep-wcmc.org

GLOBAL THINKING AND LOCAL ACTION

Based on extensive local field research undertaken in and around the Cross River National Park in Nigeria, *Global thinking and local action – Agriculture, tropical forest loss and conservation in southeast Nigeria,* by Uwem Ite, Lancaster University, United Kingdom, is a socio-economic study of the tensions between agriculture and nature conservation.

Taking a "bottom-up" approach and focusing on the farm household and the dynamics of forest farming at the household level, this book breaks new ground and brings together a mass of up-to-date and highly relevant information on the subject of tropical forestry in general.

The author addresses two key development issues in particular. The first concerns causes and dynamics of tropical rain forest loss. The second concerns the problematic relations between conservation authorities in national parks and local people. Its conclusions raise important questions about sensible ways forward in the development of such areas.

For more information, please contact: Nicky Comber, Ashgate Publishing Direct Sales, Bookpoint Ltd, 39 Milton Park, Abingdon, Oxon. OX14 4TD, UK. Fax: +44 1235 400454; e-mail: orders@bookpoint.co.uk

INNOVATIVE FOREST-RELATED THEMES

A new Theme Study Series on innovative forest-related themes that are high on the international agenda was launched by the National Reference Centre for Nature Management (EC LNV) in the Netherlands. The purpose of the series is to collect and synthesize information and knowledge on these themes, and to present concrete directions for policy development and implementation in the framework of international cooperation. The series is intended for anyone involved in international cooperation in the field of forests and nature management.

The following reports have already been published:

- *Non-timber forest products (NTFPs); their role in sustainable forest management in the tropics* [*see Box for a brief summary*].
- *Natural forest management by local groups in the humid tropics.*
- *National forest programmes, from political concept to practical instrument in developing countries.*
- *The challenge of including forests as sinks within the clean development mechanism.*

A forthcoming publication is *The management of bufferzones*.

The reports can all be downloaded from the Web address below.

***Non-timber forest products (NTFPs); their role in sustainable forest management in the tropics*, by Jeanette van Rijsoort.**

An overview is presented of experiences, practicalities and impracticalities of the management and use of NTFPs as a means of ensuring sustainable management of forests and biodiversity. The document is intended to support policy-makers and those implementing policies in forest management, biodiversity conservation and NTFP activities. It concludes that the potential of NTFPs as a resource for sustainable forest management is extremely diverse and is frequently limited by various factors. The management and use of NTFPs is best developed in broader land use systems such as buffer zones, floodplains, mountain areas, forest edges and degraded forests.

NEWS AND NOTES

For more information and to order hard copies, please contact:
EC LNV Information Desk, PO Box 30, 6700 AA Wageningen, the Netherlands.
Fax: +31 317 427561;
e-mail: balie@eclnv.agro.nl;
www.minlnv.nl/inm

INTERNATIONAL BEE RESEARCH ASSOCIATION (IBRA)

The International Bee Research Association is a non-profit organization with members in most countries of the world. It provides a very comprehensive library, information and advisory service on bees of all kinds, thereby helping to promote their use as wealth creators. It provides a network of expertise, facilitates research and encourages the study and conservation of bees.

An important part of IBRA's mission is to promote appropriate beekeeping development as a practical and sustainable economic activity in the developing world.

Through three quarterly journals (*Bee World, Apicultural Abstracts* and *Journal of Apicultural Research*), regular conferences and book publications, IBRA makes available all that is known on bees. There is also a specialist mail-order service that can supply not only IBRA publications but also all current, and many historical, facsimile publications on beekeeping and bee science.

IBRA is registered in the United Kingdom as a charity and maintains its services through the support of members' subscriptions, grants, donations and the sale of publications.

As part of its mission IBRA, in conjunction with the Commonwealth Secretariat, has published *Beekeeping as a business.* The text replaces an earlier publication entitled *Beekeeping in rural development*, which is now out of print.

Beekeeping is a good example of an activity that has a strong local tradition in many developing countries – an activity which provides rural people with a source of nutrition and income. It is a sustainable form of agriculture that is highly beneficial to the environment and provides reasons for the retention of native habitats and potentially increased yields from food and forage crops. It can also be used to economic advantage in conjunction with forest plantation for, if thought is given to species offering suitable forage, a crop can be harvested without felling a tree.

The joy of a beekeeping business is that it does not require expensive ongoing aid. The demand is for information and this new publication presents the basic knowledge required in a readable and clearly illustrated form.

For more information, please contact:
Mr Richard Jones, Director,
International Bee Research Association,
18 North Road, Cardiff CF10 3DT, UK.
Fax: +44(0)29 20 665522;
e-mail: ibra@cardiff.ac.uk;
www.cf.ac.uk/ibra/

INTERNATIONAL FORESTRY RESOURCES AND INSTITUTIONS (IFRI) RESEARCH PROGRAM

The International Forestry Resources and Institutions Research Program is a network of collaborating research centres in Africa, Asia, Europe, Latin America and North America, supported by the Ford Foundation, the MacArthur Foundation, FAO and the United States National Science Foundation. IFRI scholars acknowledge the importance of both biophysical and social factors by taking an inherently interdisciplinary approach to the study of forests. Members of the IFRI network use standardized methods to collect data on a common set of biophysical, socio-economic and institutional variables. Researchers return to forest sites every three to five years to conduct repeat studies. By building an international database of comparable repeat studies, IFRI scholars gain the ability to draw comparisons across a large number of cases and over time.

As of December 2000, there are 14 IFRI collaborating research centres in 12 countries. The first were established in 1993. Revisits have begun in Nepal, Uganda and the United States.

IFRI studies suggest that the perceived value of a resource is the most important factor affecting the emergence and success of institutions for self-governance. Perceptions of the condition and value of a forest greatly influence decisions about its management. Interactions with the forest, particularly the use of forest resources, shape perceptions of forest value and condition.

Non-timber forest products (NTFP) loom large in assessments of forests by local users of forest resources. The IFRI research protocols are sensitive to the multiple ways in which people interact with forests. Data are collected on the use of a wide range of forest products, including trees, bushes, grasses, leaves on the ground, climbing leaves (e.g. vines), soils, stones, minerals and wildlife. Of the pairings of user groups and forests in their database, nearly all (87.4 percent) use at least one NTFP. The most commonly used forest products for the study sites are grasses. The availability of NTFPs clearly influences assessments of forests by the people who use them, and thus affects their willingness to take action to protect their forest resources. (*Extracted from: The International Forestry Resources and Institutions [IFRI] Research Program and the Search for Communal Management of Forest Resources*, by Amy R. Poteete.)

NEWS AND NOTES

XXI IUFRO WORLD CONGRESS

The XXI IUFRO World Congress took place in Kuala Lumpur, Malaysia, from 7 to 12 August 2000. The papers presented at the congress, together with the contact points of their authors, are listed below.

Role of local people in sustainable management and conservation of bamboo and rattan diversities in Bangladesh.
Ratan Lal Banik, Bangladesh Forest Research Institute, PO Box 273, 4000 Chittagong, Bangladesh.
Fax: +880 31 681 1584;
e-mail: bfri@spnetctg.com

Indigenous Forest Management Systems and forest products commercialization: the upland people's strategy on forest conservation in the Cordillera Region, Philippines.
Fatima T. Tangan, Ecosystem Research and Development Service, Department of Environment and Natural Resources, Loakan Road, 2600 Baguio City, the Philippines.
Fax: +63 442 4531;
e-mail: erds-car@mozcom.com

Estimating the density of rare tree species: a case study from Ethiopia.
Alfred de Gier & G. Dessie, International Institute for Aerospace Survey and Earth Sciences (ITC), Hengelosestraat 99, Post Box 6, 7500 AA Enschede, the Netherlands.
Fax: +31 53 4874399;
e-mail: degier@itc.nl

Extending forest resource assessment to landscape inventories.
Peter Brassel, Swiss Federal Institute of Forest, Snow and Landscape Research, Birmensdorf, Switzerland.
e-mail: Brassel@wsl.ch

Sustaining wildlife populations in productively managed forests.
Michael Bevers, Curtis H. Flather, John Hof & Fred Kaiser, USDA Forest Service, Rocky Mountain Research Station, 80526 Fort Collins, CO, USA.
Fax: +970 295 5959;
e-mail: mbevers@fs.fed.us

Wild sago palm and the role it plays in the culture of Papua New Guinea.
Sudesh Aggarwal, University of Technology, Department of Forestry, Private Mail Bag Lae, Papua New Guinea.
e-mail: saggarwa@fo.unitech.ac.pg

Marketing of non-timber forest products: a key to conserve natural tropical forests?
Michel Becker & Antonia Engel, University of Freiburg, Institute of Forest Policy, Markets and Marketing Section, Freiburg, Germany.

Management and production of NTFP and the commercialization/conservation proposition.
Bruce Campbell & Wil de Jong, University of Zimbabwe, Institute of Environmental Studies, Harare, Zimbabwe; and Centre for International Forestry Research, Indonesia.
Fax: +62 251 622100;
e-mail: w.de-jong@cgiar.org

NTFPs and rural poverty alleviation: the economics of scepticism.
William Cavendish, Imperial College, Royal School of Mines, T.H. Huxley School, Exhibition Road, London SW7 2AZ, UK.
e-mail: info@ic.ac.uk

Non-wood tree biomass: a raw material of the coming century?
Mauris Daugavietis, Latvia Forest Research Institute "Silava", Rigas Str. 111, LV-2169 Salaspils, Latvia.
Fax: +371 7901359;
e-mail: maris@silava.lv

A comparison of theories on institutions relevant to non-timber forest products development.
Wil de Jong, Centre for International Forestry Research, Indonesia.
Fax: +62 251 622100;
e-mail: w.de-jong@cgiar.org

Conservation, protection and sustainable use of medicinal plants.
P.L. Gautam, S.P. Raychaudhuri & Neelam Sharma, National Bureau of Plant Genetic Resources, Pusa Campus, 110012 New Delhi, India.
e-mail: director@nbpgr.delhi.ni.in

The significance of NWFP for tropical societies: an analysis of statistical data on NWFP utilization in East and southern African countries.
W. Killmann, H. Kästel, L. Russo, P, Vantomme & S. Walter, FAO Forestry Department, Rome, Italy.
Fax: +39 0657055816;
e-mail: wulf.killmann@fao.org

People's dependence on forest and the changing legal profile.
Neil B. Majundar, Indian Institute of Forest Management, Post Box 357, Bhopal 462003, India.
Fax: +91 755 772878;
e-mail: neil@iifm.org

Strategy for sustainable NTFP management in India.
Ram Prasad, Indian Institute of Forest Management, Post Box 357, Bhopal 462003, India.
Fax: +91 755 772878;
e-mail: ramprasad@iimb.ren.nic.in

NEWS AND NOTES

NTFPs pivotal for sustainable forest management to solve global forestry problems and society needs.
Mahabir Prasad Shiva & Alka Shiva, Centre for Minor Forest Products, Dehra Dun, India.
Fax: +91 135 629936;
e-mail: shivamfp@nde.vsnl.net.in

Contribution of NTFP-based economies to development: a conceptual framework between growth and distribution.
Jochen Statz, University of Freiburg, Institute of Policy, Markets and Marketing Section, Freiburg, Germany.

Plant Resources of South East Asia (PROSEA).
Elisabeth Philip, M.K.M. Rizal, M.S. Khadijaah & M.A.A. Razak, Forest Research Institute Malaysia, Kuala Lumpur, Malaysia.
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Knowing forests, knowing people, knowing change.
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Forest resources and human welfare in Himalaya: the contribution of commercial medicinal plants.
Carsten Smith Olsen & Nirmal Bhattarai, Royal Veterinary and Agricultural University, Department of Economics and Natural Resources, 1958 Frederiksberg, Denmark.
Fax: +45 35282671;
e-mail: cso@kvl.dk

The contribution of Cassia vera *in improving the environmental quality and society welfare in Indonesia.*
Eulis Retnowati, Forest and Nature Conservation Research and Development Center, FORDA, PO Box

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e-mail: slitbang@bogor.indo.net.id

The socio-economic value of sustainable mangrove forest management: the Matang mangroves in Malaysia.
Lim Hin Fui & Mohd. Parid Mamat, FRIM, Kepong, 52109 Kuala Lumpur, Malaysia.
Fax: +603 6365687;
e-mail: limhf@frim.gov.my

Community based bioprospecting of Mondia whytei *indigenous plant as income-generating activity in Western region of Kenya.*
Kefri Muguga & Mukonyi Watai, Kenya Forestry Research Institute, Post Box 20412, Nairobi, Kenya.
Fax: +254 514 32844;
e-mail: kefri@arce.or.ke

Wild edible herbs and maple sap as an income source in mountain areas of Korea.
Don Koo Lee & Gab T. Kim, Seoul National University, Department of Forest Resources, 103 Seodun-Dong, Kwosun-Gu, 441-744 Suwon, Republic of Korea.
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Elementos técnicos para la producción sostenible de recursos vegetales no madereros del bosque tropical.
Daniel Marmillod, Roger Villalobos y Gabriel Robles, CATIE, 7170 Turrialba, Costa Rica.
Fax: +506 556 8417;
correo electrónico: rvillalo@catie.ac.cr

Production and utilisation of bamboo, rattan and related species: management of research consideration.
Abd. Latif Mohmod, Forest Research Institute Malaysia (FRIM), Kepong, 52109 Kuala Lumpur, Malaysia.
Fax: +603 686 3082;
e-mail: drlatif@pc.jaring.my

Managing national forests of the eastern United States for non-timber forest products.
James Chamberlain, Robert Bush, A.L. Hammet & Philip Araman, Department of Wood Science and Forest Products, College of Natural Resources, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA.
Fax: +1 540 231 8868;
e-mail: jachambe@vt.edu

Hiccups/problems with inequitable distribution of profits from non-wood forest products and their remedies.
D.D. Tewari, Division of Economics, School of Economics and Management, University of Natal, Durban, South Africa.
e-mail: tewari@nu.ac.za

Non-timber forest product-based enterprise in forest conservation and community development. India's evolving institutional context.
Doris Capistrano, Ford Foundation, 55 Lodi Estate, New Delhi, India.
Fax: +91 11 426 7147.

The potential of non-wood forest product resources in sub-Saharan Africa: towards a better assessment of forest resources providing NWFP.
W. Killmann, G. Preto, L. Russo, P. Vantomme, M.L. Wilkie & J. Wong, FAO Forestry Department, Rome, Italy.
Fax: +39 0657055618;
e-mail: wulf.killmann@fao.org

For more information, please contact: Amy Poteete, Workshop in Political Theory and Policy Analysis, International Forestry Resources and Institutions (IFRI) Research Program, Indiana University, 513 North Park, Bloomington, IN 47408-3895, USA. Fax: 812 855 3150; e-mail: IFRI@indiana.edu *or* apoteete@indiana.edu; www.indiana.edu/~ifri/

KERALA FOREST RESEARCH INSTITUTE

The Kerala Forest Research Institute (KFRI) was established by the Government of Kerala (India) in 1975 as an autonomous institute. It functions under the umbrella of the Kerala Science, Technology and Environment Department. KFRI's mandate is to carry out research and development activities in areas relevant to forestry.

The goals of the institute are fulfilled by conducting well-planned research either on carefully selected thrust areas of tropical forestry or on problems identified by the user agencies, which include the Kerala Forest Department, forestry organizations in the corporate sector, private industries, as well as several other forest-based organizations in India and in other countries.

Areas of research activities include:

- plantation forestry;
- management of natural forests;
- wildlife biology and management;
- wood science and timber utilization; and
- socio-economic research.

Among KFRI's many achievements is a participatory management action plan suggested for biodiversity conservation and sustainable management of NWFPs in Kerala. The institute has a vast store of expertise and conducts various activities on bamboo and rattan.

KFRI has published 187 research reports, 850 scientific papers, 23 books, 18 information bulletins and five handbooks, as well as a *Manual on non-wood forest products of Kerala.*

For more information, please contact: Kerala Forest Research Institute, Peechi 680 653, Kerala, India. Fax: +91 487 282249; e-mail: admin@kfri.org; www.kfri.org/index.htm

KEY ROLE FOR MYCORRHIZAL FUNGI IN SUSTAINABLE FOREST MANAGEMENT

Almost all tropical rain forest trees have mycorrhizal relationships. Without them, it would be impossible for the trees to survive. Knowledge of these tree-fungi associations, as well as their diversity and dynamics, is therefore a prerequisite for sustainable forest management.

This starting point guided a study carried out in southern Cameroon by soil microbiologist Neree Awana Onguene. With funding from the Netherlands Organization for Scientific Research (NWO), Onguene conducted research on mycorrhizal associations in the framework of the Tropenbos Cameroon Programme. The results of his study are now being published as Tropenbos Cameroon Series No. 3.

Onguene found an impressive diversity of mycorrhizal associations and fungi. He identified more than 125 species of ectomycorrhizal fungi ("mushrooms"). Some of these are edible and a potential source of protein for forest-dwelling people. As disturbance caused by logging and shifting cultivation may easily jeopardize these species, the forest communities where they occur need to be carefully managed. "They even deserve a special conservation status", he comments.

The study makes it clear that shifting cultivation severely affects one of the two main mycorrhiza types, that is the ectomycorrhizal fungi. This implies that land-use change strongly jeopardizes ectomycorrhizal host trees. This leads the researcher to suggest that the local population should save these trees when opening up agricultural fields, as they do with fruit-trees or other socially important tree species.

Present-day forestry practices considerably reduce the quantity of active and effective mycorrhizal associations, the so-called inoculum potential. This negative impact could persist for more than a decade, and seriously hampers the establishment and growth of tree seedlings. This indicates that sustainable management and maintenance of the ectomycorrhizal component of Cameroon's rain forests need special attention.

The staggering rate of deforestation in the tropics ultimately argues for plantation forestry and artificial regeneration. Ideally, it should pay off to replant native tree species and to maintain the original level of biodiversity. The results of this study suggest that addition of inoculum from a grass field or derived under mother trees may positively affect the regeneration of timber trees and thus compensate for the negative impact of selective logging. But it was also made clear that different sources of mycorrhizal inocula elicit different host responses. Thus, the selection of the most appropriate inocula will become a must for successful attempts to reforestation of degraded lands. (*Source:* N.A. Onguene. 2000. *Diversity and dynamics of mycorrhizal associations in tropical rain forests with different disturbance regimes in South Cameroon.* Tropenbos Cameroon Series No. 3. The Tropenbos Foundation, Wageningen, the Netherlands.)

For more information, please contact: Mr Jelle Maas, Programme Officer, The Tropenbos Foundation, Post Box 232,

Wageningen 6700 AE, the Netherlands.
Fax: +31 317 423024;
e-mail: j.b.maas@tropenbos.agro.nl;
www.tropenbos.nl

KLEINHANS FELLOWSHIP IN NON-WOOD FOREST PRODUCTS

The Kleinhans Fellowship provides an opportunity to carry out research into the development of new markets for non-timber forest products or the expansion of existing markets. A successful application will outline the need for research, its potential applications and the likely impact on local communities and wildlife. At the end of the project, a thoroughly documented paper suitable for publication is required. Fellows are expected to summarize and disseminate the results in the local language to communities in and around the study area.

The Kleinhans Fellowship research area is restricted to Latin America. Projects that can eventually be replicated in other parts of the world are strongly encouraged.

For more information, please contact: Ms Sabrena Rodriguez, Rainforest Alliance, 65 Bleecker Street, New York, NY 10012, USA.
E-mail: canopy@ra.org or SRodriguez@ra.org;
www.rainforest-alliance.org;
www.rainforest-alliance.org/programs/research/kleinhans.html

MEDICINAL AND AROMATIC PLANTS PROGRAMME IN ASIA

The Medicinal and Aromatic Plants Programme in Asia (MAPPA) was launched in 1998, initially to focus its activities in South Asia, with existing projects funded by the International Development Research Centre (IDRC) with cofunding support from the Ford Foundation, New Delhi.

Malaysian Timber Bulletin

The general objective of MAPPA is to enhance the sustainable and equitable use of medicinal and aromatic plant resources in South Asia through the promotion of strategic research, networking and collaboration among key relevant organizations in the region.

MAPPA's specific objectives include the following:

- support strategic research on community-based initiatives for genetic conservation and sustainable management of medicinal and aromatic plants;
- promote innovative resource utilization and management strategies involving local people, especially rural poor and tribal peoples, in order to obtain more equitable benefits from medicinal and aromatic plants and derived products; and
- support strategic research on improving access to, and use of, medicinal and aromatic plants as a means of safe and effective primary health care.

Through strategic research, collaboration and networking, MAPPA plans to develop strategies, methods and options for sustainable conservation and use of medicinal and aromatic plant resources. The research work expects to build on previous research and networking activities in the region, funded both by IDRC and other organizations.

Research will be supported through small-to-medium grants, commissioned reviews and internships. MAPPA will fund a series of applied and short-term projects (two to three years), aimed at addressing key research questions related to three themes: sustainable use and conservation; sustainable and equitable commercialization to protect local peoples' rights; and improving local peoples' informed options to safe and effective health care. Research conducted by consultants and internships may complement project studies. (*Source: MAPPA News*, 2(1), June 2000.)

For more information, please contact: Madhav Karki, Regional Programme Coordinator, The Medicinal and Aromatic Plants Programme in Asia, IDRC/SARO, 208 Jor Bah, New Delhi 110003, India.
Fax: +91 11 462 2707;
e-mail: mappa@idrc.org.in;
www.idrc.ca/saro

MEKONGINFO

MekongInfo is an interactive Web-based system for sharing information about natural resource management, with a focus on forestry, in Cambodia, Thailand, Lao People's Democratic Republic and Viet Nam.

MekongInfo contains an on-line library of documents, project literature and case studies related to forestry, a database of organizations, projects, individuals, news and announcements about forthcoming events, and a forum for on-line discussions, etc. In addition, MekongInfo offers sector actors a range of free services, including a Web hosting service, e-mail updates and CD-ROMs.

Information on recent publications is also available; for example, the *Non-timber forest products subsector analysis Vietnam*, by J. de Beer, Ha Chu Chu and Tran Quoc Tuy for IUCN Viet Nam and the NTFP-RC.

For more information, please contact: Ms Marlynne Hopper, Sustainable

NEWS AND NOTES

Management of Resources in the Lower Mekong Basin Project, Tung Shing Square, 2 Ngo Quyen Street, Hanoi, Viet Nam.
Tel./Fax: +84 4 934 6002;
e-mail: hopperm@mekonginfo.org;
www.mekonginfo.org

MINILIVESTOCK – ALTERNATIVE FOOD SOURCES

Minilivestock are small vertebrates and invertebrates that are exploited by local human communities as a source of food. They involve a wide range of species that are locally grown on a small scale (rats, frogs) or collected from the wild (caterpillars, termites, Atta ants, spiders, earthworms, etc.). Most of the minilivestock are consumed by inhabitants of tropical forests and savannahs, and provide an important supplement of vitamins, fat, protein and minerals. The limited data available on the nutrient composition of minilivestock suggest that these species might be valuable sources of high-quality protein, as well as fat, vitamins and minerals. Minilivestock might thus constitute an important source of nutrients in the diet.

In some villages during the rainy season up to 60 percent of animal protein is derived from terrestrial invertebrates, and between 12 and 26 percent from insects in some villages in the Amazon, such as Tukanuans.

More research is needed on local current knowledge, strategies, ways of procurement, and nutritional values of such organisms. The majority of species on the planet, especially in the tropics, are invertebrates. Handling and properly developing this resource could promote good management of the existing biodiversity.

For more information, please contact: Mr Maurizio G. Paoletti; Dipartimento di Biologia Università di Padova, via U. Bassi, 58/b, 35121-Padova, Italy.
Fax +39 049 8276300/8072213;
e-mail: paoletti@civ.bio.unipd.it;
www.bio.unipd.it/agroecology/

NATURAL RESOURCES AND ETHICAL TRADE PROGRAMME

Under the framework of the project "Ethical trade and forest dependent people" [*see also* Non-Wood News *No. 7, p. 19*] funded by the Forest Research Programme of the United Kingdom Department for International Development (DFID), a number of studies have been carried out on the comparison between conventional and ethical trade in forest products.

The project objectives are to identify the potential of ethical trade to improve forest-dependent people's livelihoods and to assess the impact of global trading regulations and markets on the viability and potential of ethical trade.

- *Study of the social impact of ethical and conventional Brazil nut trading of forest-dependent people in Peru.* 2000. By V. Nelson, M. Galvez & M. Blowfield, Natural Resources Institute, University of Greenwich, Chatham Maritime, UK. 51 pp.
- *Study of the social impact of ethical and conventional cocoa trading on forest-dependent people in Ecuador.* 2000. By V. Nelson, M. Galvez & M. Blowfield, Natural Resources and Ethical Trade Programme, Natural Resources Institute, University of Greenwich, Chatham Maritime, UK. 29 pp.
- *Economic viability of Brazil nut trading in Peru.* 2000. By C. Collinson, D. Burnett & V. Agreda, Natural Resources and Ethical Trade Programme, Natural Resources Institute, University of Greenwich, Chatham Maritime, UK. 62 pp.
- *Economic viability of ethical cocoa trading in Ecuador.* 2000. By C. Collison & M. Leon, Natural Resources and Ethical Trade Programme, Natural Resources Institute, University of Greenwich, Chatham Maritime, UK. 36 pp.

Ethical trade, as used by the Natural Resources and Ethical Trade (NRET) Programme, is an umbrella term referring to different approaches to trade that have social and/or environmental objectives as well as commercial ones. Fair trade initiatives are referred to in the above-mentioned studies as an example of ethical trade. Other examples include ethical sourcing, commercial organic agriculture and trade in certified forest products.

For more information, please contact: Natural Resources and Ethical Trade Programme, Natural Resources Institute, University of Greenwich, Chatham Maritime, Kent ME4 4TB, UK.
nret@gre.ac.uk;
www.nri.org/NRET/nret.htm

NEEM TREE – PATENT REVOKED

The European Patent Office revoked a controversial patent that had been granted to the United States of America and the multinational corporation W.R. Grace for a fungicide derived from seeds of the neem tree. The Legal Opposition to the patent had been lodged five years ago by the Research Foundation for Science, Technology and Natural Resource Policy directed by the Indian scientist Vandana Shiva, International Federation of Organic Agriculture Movements (IFOAM) and Magda Alvoet,

former Green Member of the European Parliament and current Environment Minister of Belgium. (*Source:* IFOAM press release, Munich, 10 May 2000.)

For more information, please contact: International Federation of Organic Agriculture Movements (IFOAM) Head Office, c/o Ökozentrum Imsbach, D-66636 Tholey-Theley, Germany.
Fax: +49 6853 919899;
e-mail: HeadOffice@ifoam.org;
www.ifoam.org

NETWORK FOR NATURAL GUMS AND RESINS IN AFRICA (NGARA)

Natural gums and resins are among dryland resources in sub-Saharan Africa that contribute to improved livelihoods of local communities in terms of food security, income generation and foreign exchange earnings. These resources also contribute to the amelioration of the environment. The increasing health consciousness among consumers internationally also favours their increased use.

The development of these resources and commodities is key to sustainable management and development of the drylands which, owing to the harsh environmental conditions, have fewer options. However, irregularity of supply of these commodities accompanied by widely fluctuating prices and variable product quality has resulted in unfavourable long-term effects on the demand of these commodities. A coordinated strategy is therefore needed among producing countries and partners to take advantage of available opportunities and to address the constraints.

Various initiatives have been undertaken since the mid-1990s on how the plant gums and resins sector could be developed to enhance food security, rural development and poverty alleviation in sub-Saharan Africa. One such initiative was the organization of a workshop for producing countries and partners held in October 1997 in Nairobi, Kenya during which issues on the conservation, management and utilization of plant gums, resins and essential oils were discussed. A key recommendation of that workshop was the creation of a regional network to enable countries to develop their own system of sustainable production, marketing and improvement of their products to international standards. A follow-up workshop was held in May 2000 in Nairobi, Kenya, where the Network for Natural Gums and Resins in Africa (NGARA) was established.

NGARA's mission is to assist in formulating a coordinated strategy for African producing countries and partners in the sustainable development of their natural gum and resin resources for improving rural livelihoods and environmental conservation. Its goal is to position African producer countries and partners as major global players in the production, processing and marketing of gums and resins.

The network's major objectives are:

- To promote exchange of information on production, marketing, processing and quality control among producer countries as well as with partners.
- To facilitate access to technological development and training.
- To support relevant research in the key areas of the sector.
- To promote the links between the primary producer, processor and end user.

Activities include: creation of relevant databases, information dissemination and promotional activities; training and capacity building; and research and technology development.

REGIONAL FOCAL POINTS

West and Central Africa
Ministère de l'Environnement et de l'Eau, DFPE, BP 447, N'djamena, Chad.
Fax: +235 52 522656;
e-mail: cnaruser@sdntcd.undp.org

Eastern Africa
The Gum Arabic Company, PO Box 857, Khartoum, the Sudan.
Fax: +249 11 471336;
e-mail: osmanme@hotmail.com

Southern Africa
SADC-FSTCU, PO Box 30048, Lilongwe 3, Malawi.
Fax: +265 784 268 *or* +265 771 812;
e-mail: sadcfstcu@malawi.net *or* sadcfstcu@sdnp.org.mw

NGARA was initially established with a membership of ten countries from sub-Saharan Africa which produce plant gums and resins (those who participated in the Nairobi workshop of May 2000). However, membership is by application from countries in sub-Saharan Africa which produce the commodities and organizations involved in the development of the resources and/or commodities.

The network has a steering committee comprising: representatives from three focal points (West and Central Africa, Eastern Africa and Southern Africa), experts on marketing and quality control and international observers (represented by FAO and the Association for the International Development of Natural Gums [AIDGUM]).

NEWS AND NOTES

Each member country is represented by a national coordinator. The day-to-day activities are handled by a regional secretariat based at the Kenya Forestry Research Institute (KEFRI), Nairobi, Kenya. (*Contributed by:* Sheila Mbiru, Kenya Forestry Research Institute.)

For more information, please contact: The Secretariat, NGARA, Kenya Forestry Research Institute, PO Box 20412, Nairobi, Kenya.
Fax: +254 154 32844;
e-mail: kefri@africaonline.co.ke or Kefri@arcc.or.ke
[*Please see under Recent Events for more information on the May 2000 workshop.*]

NGOs CONDEMN BIOPIRACY BY SWISS UNIVERSITY

Non-governmental organizations in Zimbabwe and Switzerland condemn the way by which the University of Lausanne gained access to genetic resources in Zimbabwe and the way the benefit sharing has been negotiated. They also reject the patent on antimicrobial diterpenes which Professor Hostettmann of Lausanne University took out on these resources and which is based on traditional knowledge. This case is another example of how current bioprospecting in southern countries contradicts the rules defined by the Convention on Biological Diversity (CBD).

In July 1999, a United States patent on antimicrobial diterpenes was granted to Kurt Hostettmann, professor at the University of Lausanne. The patented invention relies on traditional knowledge from Zimbabwe and on the root of the tree *Swartzia madagascariensis* which can be found throughout tropical Africa. Two years previously, in April 1997, an addendum to a material transfer and confidentiality agreement was signed between the American pharmaceutical company Phytera and the University of Lausanne, under which Phytera received an option for an exclusive worldwide

Malaysian Timber Bulletin

Croton argyratus

licence and in return agreed to pay royalties of 1.5 percent on the net sales of any product marketed under this licence. Professor Hostettmann, on the other hand, is obliged to give 50 percent of any royalties received to the National Herbarium and the Botanical Garden of Zimbabwe and to the Department of Pharmacy at the University of Zimbabwe.

Swiss and Zimbabwean NGOs demand that in the case at hand an access and benefit-sharing agreement be negotiated that fulfils the objectives of the Convention on Biodiversity and involves all the main stakeholders in Zimbabwe. The NGOs also demand that the contract between the University of Lausanne and Phytera be cancelled and the patent withdrawn. (*Source:* Announcement by the Community Technology and Development Association (CTDA), Zimbabwe, Zimbabwe National Traditional Healers Association (ZINATHA) Berne Declaration, Switzerland, 22 September 2000, reported in the listserve "bioplan@undp.org".)

NUCIS NEWSLETTER

This information bulletin of the Research Network on Nuts (FAO-CIHEAM) is a vehicle of communication among network member on various aspects. A short version of the newsletter (editorial, contents and back page) is available on the Web site of the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) (www.iamz.ciheam.org/ingles/nucis6.htm).

The contents of the newsletter can be browsed, copied and printed.

General information on the Research Network on Nuts activities can be found at: www.iamz.ciheam.org/ingles/nuts.htm; and also on the FAO Web site at: www.fao.org/regional/europe/escorena/nut_crops.html

ORGANIZATIONS DECLARE SUPPORT FOR THE CONSERVATION OF NATURAL MEDICINAL RESOURCES

More than 80 members of the commercial, conservation, government, health care and insurance sectors gathered at EXPO 2000 in Hannover, Germany on 13 October 2000 to participate in the symposium on Medicinal Utilisation of Wild Species. Convened by Trade Records and Analysis of Flora and Fauna in Commerce (TRAFFIC) Europe-Germany and the World Wide Fund for Nature (WWF) Germany, the symposium combined presentations and discussion on the use, trade and conservation issues affecting medicinal plant populations, and the people dependent on them for health care and livelihoods.

A key theme throughout the day was the need to address conservation concerns in a multidisciplinary and collaborative manner. More than 20 participants demonstrated their support for such collaboration by signing a Joint Declaration for the Health of People and Nature. Initial signatories included representatives of the phytopharmaceutical industry in Germany, practitioners' associations, the International Council for Medicinal and Aromatic Plants, WWF, World Conservation Union (IUCN) and TRAFFIC. WWF Germany will serve as the depository for the Joint Declaration and, with TRAFFIC, will work to

encourage and monitor its transformation from words into actions.

Topics covered during the seminar included a review of global, European and German medicinal plant use and trade and the related threats to medicinal plant species, and the need for more effective trade monitoring and conservation action. The importance of securing critical habitats for medicinal plants and other wild species was also stressed. Such an approach is being pursued under WWF's Global 2000 campaign.

The importance of fully respecting benefit sharing and intellectual property rights associated with the use of medicinal plants was also stressed. Dr Uschi Eid, Parliamentary Secretary of the German Ministry of Economic Cooperation and Development (BMZ), drew the attention to this issue and the work supported by BMZ with regard to medicinal plants (see *TRAFFIC Dispatches*, No. 12).

Although a wealth of information was provided, in his summary of the day's presentations, Steven Broad, Executive Director of TRAFFIC International, commented that the symposium raised nearly as many questions as it answered. "There are no simple means to address the interwoven issues of biodiversity conservation, benefit sharing, property rights and demands from local users, the health and commercial sectors. It is essential that different sectors follow up the results of this symposium and work together to address what will continue to be an urgent and complex set of conservation and development priorities." (*Contributed by:* Teresa Mulliken, Research and Network Development Manager, TRAFFIC International and Susanne Honnef, Medicine and Plants Officer, TRAFFIC Europe-Germany.)

For more information, please contact: TRAFFIC Europe-Germany, c/o Umweltstiftung WWF Germany, Rebstöcker Str. 55, D-60326 Frankfurt, Germany.
Fax: +49 69 617221;
e-mail: honnef@wwf.de

PACIFIC PEOPLES' PARTNERSHIP

Pacific Peoples' Partnership (PPP) (formerly the South Pacific Peoples' Foundation) was founded in 1975 and has developed into Canada's principal organization working with Pacific Island peoples. PPP is devoted to international education and advocacy on issues of concern for the South Pacific region such as:

- sovereignty and decolonization;
- environmental issues;
- community development;
- indigenous science/indigenous knowledge; and
- sustainable development.

This small non-governmental organization, based in Victoria, British Columbia, Canada, was originally set up to facilitate connections between Pacific Islanders and Canadians. Over time, their work has developed an international audience. Now PPP has members in several countries.

While education and advocacy remain the top priority for PPP, it also supports grassroots projects in the Islands. Projects have included:

- WAINIMATE women's association for natural medicine therapy in Fiji;
- primary health care and literacy training in Papua New Guinea;
- support to people with disabilities in the Solomon Islands and Vanuatu;
- environmental awareness in several countries; and
- support to women's organizations in several countries.

Pacific Islanders and indigenous people everywhere have always relied upon traditional medicine for their health and medical needs. Many of the island communities do not have doctors or modern medicine available. Indigenous people have specific knowledge about the use of plants for healing purposes. Their knowledge is a combination of scientific principles as well as faith interjection, which has been passed down through the generations.

Much of the knowledge of indigenous people is retained in the minds of the practitioners who pass this knowledge on through oral traditions. Some indigenous communities are looking at ways of preserving the knowledge and promoting its use while maintaining control over it.

For more information, please contact: Pacific Peoples' Partnership, 1921 Fernwood Road, Victoria, BC, Canada V8T 2Y6.
Fax: +1 250 388 5258;
e-mail: sppf@sppf.org;
www.sppf.org/frames.html

PHYTOMEDICA – NEW E-MAIL LIST

Phytomedica is a worldwide discussion e-mailing list on medicinal plants, traditional medicine and pharmacopoeia, ethnomedicine and phytomedicines. This interactive electronic discussion forum is supported by the Environment Liaison Centre International (ELCI) and the Global Initiative For Traditional Systems of Health (GIFTS of Health).

The purpose of this list is to provide a forum for discussion, collaboration and information exchange on people, issues, policies and practices relating to medicinal and aromatic plants, ethnomedicine, phytomedicines, phytotherapy and complementary medicine, natural medicines, traditional medicine and healing.

Subscribers may post announcements of new publications and Web sites, as well

NEWS AND NOTES

as forthcoming events, publications, jobs opportunities, student internships, etc., which pertain to the forum.

This forum was launched in Nairobi, Kenya on the occasion of the Conference of Parties (COP-5) to the Convention on Biological Diversity (CBD) held at the United Nations Environment Programme (UNEP) headquarters in May 2000 and of the International Conference on Medicinal Plants and Traditional Medicine and Local Communities: Challenges and Opportunities for the New Millennium, which was held in parallel with COP-5/CBD in Nairobi.

To subscribe, send a message to: Phytomedica-subscribe@yahoogroups.com

For more information, please contact: Mr Ernest Rukangira, Environment Liaison Centre International, PO Box 72461, Nairobi, Kenya.
Fax: +2542 562175;
e-mail: erukangira@iconnect.co.ke; *or* GIFTS of Health, Green College, University of Oxford,
Oxford OX2 6HG, UK.
Fax: +44 01865 274796.

PLANT CONSERVATION ALLIANCE MEDICINAL PLANT WORKING GROUP (PCA-MPWG)

The primary focus of the Medicinal Plant Working Group is to facilitate action on behalf of medicinal plants native to the United States that are of particular conservation concern, in order to balance biological and commercial needs and, in the long term, minimize regulatory intervention.

To this end, the objectives of the group include:

- generating and sharing information regarding species of medicinal and economic importance and conservation concern;
- promoting appropriate conservation measures for native medicinal plants;
- promoting sustainable production of native medicinal plants;
- increasing participation in native medicinal plant conservation;
- encouraging active participation by tribes and other holders of traditional ecological knowledge pertaining to native medicinal plants; and
- generating financial support for native medicinal plant projects.

The PCA Medicinal Plant Working Group is facilitated by the United States Fish and Wildlife Service and is open to all who are interested in medicinal plant conservation.

For more information, please contact: Ms Julie Lyke, United States Fish and Wildlife Service, Division of Scientific Authority, 4401 N. Fairfax Drive, Arlington, VA 22203, 703/358-1708 USA.
E-mail: julie_lyke@fws.gov;
www.nps.gov/plants/medicinal

Polygala paniculata

Malaysian Timber Bulletin

RESEARCH PARTNERSHIPS ON BAMBOO AND RATTAN

The mission of the International Network for Bamboo and Rattan (INBAR) is to improve the well-being of producers and users of bamboo and rattan within the context of a sustainable bamboo and rattan base by consolidating, coordinating and supporting strategic and adaptive research and development.

INBAR is open to a wide range of partnership possibilities to strengthen its links with field-based non-governmental organizations to assist with technology transfer and will consider all proposals seriously. It is very interested, for example, in being an active partner in INCO proposals with European institutions and in making its network of collaborators available for such an exercise. INBAR is particularly willing to receive staff on sabbaticals. (*Source: ETFRN News*, No. 30, Spring/Summer 2000.)

For more information, please contact: International Network for Bamboo and Rattan (INBAR), Branch Box 155, PO Box 9799, Beijing 100101, China.
Fax: +86 10 64956983;
www.inbar.org.cn
[*See also under Special Features for more information on INBAR and rattan.*]

SIERRA MADRE ALLIANCE

The Sierra Madre Alliance mailing list provides information, updates and action alerts on conservation, human rights, indigenous rights and community development in Mexico's Sierra Madre.

The Sierra Madre Alliance was founded in 1992 to strengthen and support regional organizations and communities in the Sierra Madre in their efforts towards the protection of old-growth forests, environmental restoration and sustainable community development.

For more information, please contact: Randall Gingrich, Sierra Madre Alliance, 1650 Sioux Drive, CH44-119 El Paso, TX 79925, USA.
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SOUTHEAST ASIAN NETWORK FOR AGROFORESTRY EDUCATION (SEANAFE)

The Southeast Asian Network for Agroforestry Education is a network of universities and technical colleges that aims at strengthening agroforestry training and education.

NEWS AND NOTES

SEANAFE was established in 1999 by 32 founding members in Indonesia, the Lao People's Democratic Republic, the Philippines, Thailand and Viet Nam. Its mission is to help improve agroforestry education, training, research and extension, and to contribute to socio-economic development, empowerment of farming communities and sustainable natural resource and environmental management in the region.

SEANAFE's main activities are:

- agroforestry curriculum development;
- training of agroforestry teachers;
- meetings, workshops and studies on agroforestry education;
- students' thesis research in agroforestry;
- teaching materials support; and
- exchange of teaching staff.

SEANAFE works closely with the International Center for Research in Agroforestry (ICRAF), which provides technical assistance and financial resources through a grant from the Swedish International Development Cooperation Agency (Sida).

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www.icraf.cgiar.org/sea/seanafe/About.htm

SPECIES 2000

Species 2000 has the objective of enumerating all known species of plants, animals, fungi and microbes on earth as the baseline dataset for studies of global biodiversity. It will also provide a simple access point enabling users to link to other data systems for all groups of organisms, using direct species-links. Users worldwide will be able to verify the scientific name, status and classification of any known species via the Species Locator, which provides access to species checklist data drawn from an array of participating databases. (*Source:* www.species2000.org)

TAIGA RESCUE NETWORK (TRN)

The Taiga Rescue Network is trying to reach out to all actors involved with NTFPs across the boreal world (Alaska, Canada, Russian Federation, Scandinavia).

At the Fifth International Conference of the Taiga Rescue Network (Moscow, September 2000), many participants expressed the need for a forum linking various stakeholders in the NTFP sector in the boreal region. NTFPs were also identified as an emerging topic of relevance to TRN in all regions.

As a result, the trn-ntfp e-mail list was formed and is being run by TRN.

The list aims to:

- promote networking and information exchange among boreal NTFP people;
- play the initial role of an international association for the development and promotion of NTFPs; and
- create an international forum for the exchange of ideas and expertise regarding all aspects of NTFP promotion, industry and conservation.

This list is moderated by Luc Duchesne (Natural Resources Canada, Canadian Forest Service). Representatives of all sectors (NTFP businesses, non-governmental organizations, academia, governments, intergovernmental agencies) are welcome to subscribe to the list.

To subscribe send an e-mail to: trn-ntfp-request@sll.fi, and in the body of the message write: subscribe trn-ntfp, your e-mail address@domain.org (your name and organization).

For more information, please contact:
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[*Please see under Recent Events for more information on the conference.*]

TRADITIONAL MEDICINE

Medicinal plants have traditionally been gathered from forest areas and fallow fields, or cultivated by women near their settlements. Most family heads, especially the grandparents, are renowned for their knowledge of traditional medicines and are consulted daily for the treatment of common ailments in the community. Traditional healers exercise a powerful influence in many rural communities and are the repository of traditional medical knowledge. They normally undergo long periods of apprenticeship. They are supposed to possess medico-magic powers and therefore use plants in conjunction with ritual and mystical practices in their healing systems.

The diversity of medicinal plants exceeds any current inventory or catalogue. They do, however, fall into two main groups – those prescribed in response to a specific injury or illness, or those taken simply as a prophylactic.

The global pharmaceutical industry, worth US$43 billion annually, relies heavily on forest-derived medicinal plants. On average, the active ingredients in 25 percent of all prescription drugs come directly from medicinal plants, although not all of these grow in forest habitats.

NEWS AND NOTES

EXAMPLES OF GLOBAL USE OF PLANT MEDICINE

Among the best-known medicinal substances are anti-malarial drug quinine or the oral contraceptive etheny/oestradiol, both derived from rain-forest plants.

In Mozambique, the five-petalled rosy periwinkle (Madagascar periwinkle), *Catharanthus roseus*, has been used in traditional medicine for the treatment of coughs, as tranquillizers, heart tonics and treatment for fever and high blood pressure.

The African prunus (*Prunus africana*) is an effective medicine for prostrate treatment, and *Ancistrocladus korupensis* contains elements that have shown promising indications against the human immunodeficiency viruses.

Two alkaloids derived from periwinkle – vincristine and vincalenkoblastine – are currently being used in treating Hodgkin's disease, cancer and leukaemia. Approximately 530 tonnes of rosy periwinkle are needed to extract 1 kg of vincristine, which sells for about US$200 000. The income from the manufacture of these two substances exceeds US$180 million annually.

In several African countries, traditional healers have registered a Psychic and Traditional Healers' Association to promote traditional health practices and to gain recognition from governments. By 1978, both Ghana and Cameroon had each more than 3 400 registered traditional healers. In countries such as Guinea and Burkina Faso, street pharmacies have mushroomed considerably over the past five years. In Senegal, Kenya, Ghana and Zimbabwe, some "non-traditional" clinicians are referring patients – especially those with psychotic problems – to traditional healers. (*Source: Improving the contribution of forests to human health*, by Professor Kwabena Tufuor, FAO Consultant; prepared for the Sixth OAU Conference of African Ministers of Health, held in Cairo, Egypt, October 1999.)

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

ZAMIA FURFURACEA

Zamia furfuracea, also known as wild corn and ball palm, is a wild Mexican plant endemic to central Veracruz. It lives on the coastal dunes, generally close to beaches, growing in sandy, nutrient-poor soil, unsuitable for agriculture. The ball palm, which may grow to one metre tall, stabilizes the dunes. The zamia belongs to the order of Cycadales and, like the great majority of cycads, is highly valued as exotic ornamental plants in the United States, Japan, Australia and most of Europe.

Zamia furfuracea is in danger of extinction because*:*

- its numbers have become substantially reduced in their natural state;
- its habitat is being reduced owing to the expansion of agriculture and the raising of livestock; and
- it is overexploited through illegal trade.

Zamia furfacea

The illegal exploitation became particularly intense in the 1980s with volumes of up to 40 tonnes of plants per week, and about four tonnes of seeds per year. This illegal exploitation continues to be a serious threat for the survival of this species in its natural environment. If the illegal extraction of adult plants and seeds continues, in less than ten years zamias may disappear as a natural resource and as an important component of the vegetation that lives on the dunes. (*Source: Species*, No. 33, Spring 2000.)

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Be flexible so you don't break when a harsh wind blows.

Anon

PRODUCTS AND MARKETS

AGARWOOD

Agarwood use and trade and CITES implementation for Aquilaria malaccensis

The Trade Records and Analysis of Flora and Fauna in Commerce (TRAFFIC) Network recently launched the report *Heart of the matter: agarwood use and trade and CITES implementation for* Aquilaria malaccensis, to coincide with the XXI IUFRO World Congress, Kuala Lumpur, Malaysia. Agarwood is just one of the many names for the resinous, fragrant and highly valuable heartwood produced by *Aquilaria malaccensis* and other species of the Indomalesian tree genus *Aquilaria*. Agarwood has been used for medicinal purposes for thousands of years in, for example, Ayurvedic, Tibetan and traditional East Asian medicine. Use of agarwood for the production of perfume and incense (often used in association with certain religious practices) has an equally long history. Agarwood chips can sell for several hundred to several thousand United States dollars per kilogram. Indonesia and Malaysia supply the largest quantities of agarwood in international trade, with other countries such as Viet Nam also exporting significant amounts.

Unfortunately, with demand for agarwood for these and other uses remaining strong today, there is concern that wild populations of *Aquilaria malaccensis* and other *Aquilaria* species are being over-harvested. Eight species are currently considered to be threatened according to World Conservation Union (IUCN) Red List Categories, with exploitation specifically highlighted as a threat for six of these species. Conservation concerns prompted the listing of *A. malaccensis* in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1995.

This report analyses the implementation of the CITES listing and reviews available information on the wider trade in agarwood. Available data on international trade volumes (approximately 700 tonnes reported in 1997) are provided, harvest and trade controls in key range countries documented, and actions proposed to address issues such as overexploitation and illegal trade. A need for better information on the biology and status of those *Aquilaria* spp. in trade and the flow of benefits resulting from exploitation of these species is highlighted, as are more effective harvest and trade controls. The report calls for the convening of a stakeholders' workshop to facilitate cooperation in further examining these issues and identifying actions necessary to secure the future of this important biological, economic and cultural resource. TRAFFIC will continue to work towards the conservation and sustainable management of this genus and would welcome hearing from others to discuss potential collaboration.

The report and executive summary are available in both PDF and printed formats. The pdf versions can be downloaded from www.traffic.org/news/agarwood. (*Contributed by:* Angela Barden, TRAFFIC.)

For more information, or to order a printed copy, please contact your nearest TRAFFIC office, or: TRAFFIC International, 219c Huntingdon Road, Cambridge CB3 0DL, UK. E-mail: traffic@trafficint.org *or* angela.barden@trafficint.org; www.traffic.org

BAEL

Nepal is very rich in plant diversity. It occupies only 0.09 percent of the total land area of the world but possesses nearly 2.5 percent of the total species of flowering plants.

Nepal is equally rich in the bael tree (*Aegle marmelos*). The tree has naturally spread to all the South Asian Association for Regional Cooperation (SAARC) countries, including Nepal, Bhutan, India, Maldives, Sri Lanka and Pakistan. Its economic value has not yet been explored in these countries. However, its religious, cultural and medicinal values in Nepal have been recognized in a traditional manner on the basis of its indigenous knowledge and technology (IKT).

The tree is deciduous, with trifoliate aromatic leaves, and grows to a height of 6-8 m. The size of the mature bael fruit varies from 550 g to more than 3 kg.

Various chemical constituents, namely alkaloids, coumarines, steroids, etc., have been isolated and identified from different parts of the bael tree. Essential oils have been identified in the leaves, twigs and fruits.

The ripe fruit is considered to be a tonic, a restorative, an astringent, a laxative, and good for the heart and brain. The unripe fruit is regarded as an astringent, digestive and is usually prescribed for diarrhoea and dysentery.

The bael fruit is extremely nutritious and has a very high riboflavin content. Reports from Brazil indicate that *A. marmelos* is as rich in ascorbic acid as the sweet orange.

A most important aspect is that bael can be used as an opportunity for resource-poor farmers in those areas where there is a natural bael forest. This is due to the fact that different parts of the bael tree (except the timber) can be brought into value added processing to generate employment and income at the farm and village levels. One important example of this is the production of bael jam, jelly, marmalade and squash, without much investment.

A joint effort of the Green Energy Mission (Nepal) and the Intermediate Technology Development Group (ITDG), Nepal, was undertaken in this field (bael jam/jelly manufacture/marketing, etc.) by providing training to locally based organizations and groups.

In Nepal, the bael tree and its IKT and natural products are the properties of the Nepalese people. The Green Energy Mission (Nepal) is committed to ensuring that no developed countries or multinational companies prohibit or restrict Nepalese people in utilizing the tree's IKT and value added processing, as well as its future research and development. (*Source: Green Energy Newsletter*, 6[1].)

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HONEY

Honey hunters in the Sundarbans

One of the most fascinating areas of the world where honey hunting maintains its historical traditions and importance is the Sundarbans of Bangladesh and India. The Sundarbans, the largest contiguous mangrove forest in the world, occupies an area of about 10 000 km^2, 60 percent of which is in Bangladesh and 40 percent in India. Numerous international programmes have attempted to preserve the biological richness of the Sundarbans, and recently it has been acknowledged by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Heritage Site.

In Bangladesh, the Sundarbans has been managed and protected by the Forest Department for nearly 125 years and has the status of a reserved forest with controlled and very limited human access.

The Sundarbans is home to the giant honey bee *Apis dorsata*. There is an annual migration of thousands of colonies of this honey bee into the Sundarbans, beginning in December and continuing until January and February.

Because of the nature of the mangrove forest, the tree species do not grow to great heights. *Apis dorsata* normally builds exposed nests high in the forest canopy but here must construct its large, single-comb nests relatively close to the ground, and therefore accessible to the honey hunters.

It is estimated that in Bangladesh 2 000 honey hunters utilize the Sundarbans during a controlled two-month hunting season in April and May. The main period of honey production takes place during April and June. Nectar is obtained from three major tree species: *Aegiceras corniculatum*, *Ceriops decandra* and *Sonneratia apetala*. In Bangladesh, the Sundarbans honey harvest is estimated to be between 130 and 185 tonnes per year. The wax harvest is estimated to be between 42 and 45 tonnes.

The honey hunters must obtain permits from the Forestry Department before entering the Sundarbans. In addition, the Forestry Department allocates honey and wax quotas per hunter, currently set at 78 kg of honey and 20 kg of wax, for which the Forestry Department charges approximately US$4 for the honey allotment and US$3 for the wax allotment.

The honey harvested, estimated to be 50 percent of all the honey produced in Bangladesh, is sold locally for US$2-3/kg. The wax sells for about US$3/kg. Packed honey retails for approximately US$7/kg. (*Source: Beekeeping and Development*, No. 56, September/October 2000.)

JUBAEA CHILENSIS (COQUITO DE PALMA, PALMA CHILENA)

La palma chilena, de la familia Palmae, es una especie endémica de la zona mediterránea de Chile. Es una de las palmeras más australes del mundo, cuyo ambiente se ubica entre el río Limarí y el río Maule. Hoy se encuentra en escasos puntos de su área de distribución, destacándose los palmares de Ocoa y Cocalán.

Se la utiliza para la extracción de savia (para hacer miel de palma), recolección de frutos, y confección de escobas artesanales y cestería con sus hojas. El raquis de la hoja se utiliza para cercas, y las fibras de los folíolos se usan para relleno en mueblería. A pesar de la variedad de usos, sólo la producción de miel se hace en forma industrial, y en menor escala se comercializan los frutos en el mercado nacional.

La extracción de savia se inicia a fines de octubre y termina a fines de abril del año siguiente. La palma viene desarraigada parcialmente para voltearla y se eliminan las hojas del ápice por donde exuda la savia. El 20 por ciento de los árboles exudan toda la savia en el primer año, el resto lo hace en la temporada siguiente.

Dos veces al día se recoge la savia de los recipientes puestos para este fin en cada palma. También en ese momento se limpia la superficie del ápice para evitar la cristalización de la savia que, una vez obtenida, se somete a un proceso de concentración por calentamiento en recipientes de cobre. Este concentrado de savia se envía a la fabrica donde se le agregan una serie de aditivos como jugo de coco, sacarosa y glucosa, para de esta forma ser enlatada y comercializada.

Su fruto, el coquito, es una semilla relativamente pequeña en comparación con los cocos de otras especies. Tiene aproximadamente de 3 a 4 cm de diámetro, es muy aceitoso y de excelente sabor. Se lo emplea comiéndolo solo, en repostería o agregándolo al proceso de producción de miel de la misma palma. (*Fuente: Productos Forestales No Madereros en Chile*, Serie Forestal N° 10, RLC/FAO. Extracto.)
[*Para más información, consulte* Non-Wood News *N° 5*.]

KARITE

Shea nuts are primarily grown in West and Central Africa in the semi-arid Sahel, referred to by traders as the “Shea Belt”. *Vitellaria paradoxa* subsp. *paradoxa* and *Vitellaria paradoxa* subsp. *nilotica* are the two main varieties. *Vitellaria p. paradoxa* is exported in the largest volume and grows throughout the West African region. *Vitellaria p. nilotica* is produced primarily in northern Uganda and southern Sudan. Shea nut products, the solid fat (butter or stearin) and the liquid oil (olein), are ideal for use as raw materials in cooking oil,

margarine, cosmetics, soap, detergents and candles, but they have found their primary market niche as a substitute for cocoa butter in the chocolate and confectionery industry.

Shea nut trees grow widely and naturally in West Africa. They only begin to bear fruit after about 20 years and do not reach maturity for 45 years. They may continue to produce nuts for up to 200 years after reaching maturity.

The nuts, which are embedded in a soft fruit, fall to the ground during the harvesting period (typically June to August). They are then buried in pits, which causes the pulp to ferment and disintegrate and produces enough heat to prevent germination. The nuts are dried for a few days and are later shelled and winnowed, usually by hand. The kernels are dried further to reduce moisture content from about 40 percent to about 7 percent.

A process called fractionation separates the oil (olein) and butter (stearin). This can be done locally and allows for the extraction of the liquid oil by a process involving the heating and kneading of the crushed kernels and straining the resultant oily mass.

Manufacturers in the chocolate and other food industries prefer to buy the shea nuts as opposed to the butter so that they can have as much control as possible over the processing and quality of the final product. Nuts are also preferred because they can be stored for up to five years in the right conditions, while the butter is more expensive to store and deteriorates more rapidly.

Shea butter is produced on a commercial scale in Europe using hydraulic presses on the nuts and then placing them in hot air ovens. The product is then bleached with a hexane solvent. The butter must then be stored and transported in cool conditions and in airtight containers to avoid becoming rancid.

Shea nut supply far outstrips demand. More than 600 000 tonnes of the dominant variety, *Vitellaria paradoxa*, are produced in West Africa (see Table 1 below). Most is used as cooking oil or as butter for the skin and hair. The other variety, *Vitellaria nilotica*, has a superior quality and is preferred by the cosmetics firms. Unfortunately this variety is primarily grown and processed in northern Uganda and southern Sudan, both currently states of civil unrest, and so it is generally unavailable on the market. Several other countries, including Israel and Germany, are attempting to replicate this variety.

FAO's export statistics of major supplying countries are provided in Tables 2 and 3 below, although they are not considered to be completely accurate and are primarily estimates. Exports during the last two years of available statistics hovered around 50 000 tonnes with an export value of around US$10 million. Exports in 1996 and 1997 are more than double the five-year low recorded in 1993, but lower than the high recorded in 1994. (*Source:* www.raise.org/natural/)

TABLE 1. SHEA NUT PRODUCTION, 1994-98 (TONNES)

	1994	1995	1996	1997	1998
Benin	15 500	15 000	15 000	15 000	15 000
Burkina Faso	70 100	75 700	70 000	70 000	70 000
Côte d'Ivoire	19 785	20 000	20 000	20 000	20 000
Ghana	57 000	56 000	55 000	55 000	55 000
Mali	85 000	85 000	85 000	85 000	85 000
Nigeria	353 000	384 000	345 000	355 000	355 000
Togo	7 000	8 520	2 504	6 500	6 500
TOTAL	**607 385**	**644 220**	**592 504**	**606 500**	**606 500**

Source: FAOSTAT.

TABLE 2. WORLDWIDE SHEA NUT EXPORTS BY VOLUME, 1993-97 (TONNES)

HS Code 120792	1993	1994	1995	1996	1997
Ghana	1 793	13 988	6 000	19 654	19 654
Benin	7 870	15 266	9 504	9 504	9 504
Côte d'Ivoire	4 792	12 163	11 195	5 422	5 422
Burkina Faso	5 000	5 000	7 633	7 633	7 633
Togo	1 112	6 562	4 606	8 330	5 284
Nigeria	-	5 000	-	-	-
Mali	500	500	500	500	500
United Kingdom	-	215	182	28	-
Other	28	10	34	21	31
TOTAL	**21 095**	**58 704**	**39 654**	**51 092**	**48 028**

Source: FAOSTAT.

TABLE 3. WORLDWIDE SHEA NUT EXPORTS BY VALUE, 1993-97 (US$'000)

HS Code 120792	1993	1994	1995	1996	1997
Ghana	340	2 590	1 500	5,846	5 846
Benin	1 071	2 223	1 400	1 400	1 400
Côte d'Ivoire	1 319	1 601	1 973	793	793
Togo	137	764	788	1,274	972
Burkina Faso	500	500	847	847	847
Nigeria	-	1 500	-	-	-
Mali	150	150	150	150	150
United Kingdom	-	45	37	9	-
Other	6	9	38	10	33
TOTAL	**3 523**	**9 382**	**6 733**	**10 329**	**10 041**

Source: FAOSTAT.

PRODUCTS AND MARKETS

MARULA – A FOOD FOR ALL SEASONS

Marula (Sclerocarya birrea) is a keystone tree species of Africa's semi-arid woodlands. Its edible vitamin-rich fruit and storable nutlike seed kernels, rich in proteins and lipids, have made it a traditional African "wild" food for all seasons (probably throughout the course of human evolution). This, coupled with its medicinal value and its potential for economic development and domestication, has prompted a United Kingdom Department for International Development-funded project at the University of Wales-Bangor, in collaboration with the International Center for Research in Agroforestry (ICRAF) and the University of Swaziland, to produce a monograph on Sclerocarya birrea, synthesizing all published data on the species (biological, ecological, economic, etc.); a distribution map; and extension materials. (*Source: ETFRN News*, No. 31, Autumn-Winter 2000.)

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PERIWINKLE (*CATHARANTHUS ROSEUS*)

The red or Madagascar periwinkle *Catharanthus roseus* (L.) G. Don – syn. *Lochnera rosea* (L.) Reichb. f. or *Vinca rosea* (L.), representative of the family Apocynaceae, originates in the tropical forests of Madagascar and is now found pan-tropically. It is currently cultivated in China, India, Madagascar, Israel, the United States and in all countries of central and southern Europe.

Its main use is in the commercialization of the alkaloids vincristine and vincaleukoblastine, which are used in the chemotherapeutical treatment of Hodgkin's disease and leukaemia and which cannot be produced in the laboratory without supplies of the plant itself. The concentration of both vinblastine and vincristine in the plant material (leaves, roots) is very low, 0.0005 percent on a dry weight basis. Therefore, huge quantities have to be harvested, in order obtain a substantial amount of alkaloids.

The total amount of *Catharanthus roseus* material in trade is not known; however, figures from Madagascar indicate an annual export of about 1 000 tonnes.

The price paid for vincristine is reported to reach US$200 000/kg. Some indicative figures regarding the overall trade are:

- Products derived from the periwinkle had a wholesale value of US$35 million in 1977, which is estimated to correspond to a retail value of US$140 million.
- In another estimate, the worldwide trade in vincristine is worth about US$50 million per year.

In Hungary, the yield of plant parts is 3.5-4.5 tonnes/ha of fresh herb, or 1.0-1.5 tonnes/ha of dried herb. Under irrigated conditions, 1.5 tonnes/ha of roots, 1.5 tonnes/ha of stems and 3 tonnes/ha of leaves can be obtained. (*Source:* Extracted from various sources by FAO's NWFP Programme.)

For more information, please:
consult the EcoPort Plant Record (www.ecoport.org): either click on "Get full record" or, in the ID page, go to category "Crop" and "Get full category";
contact Denzil Phillips (www.denzil.com; e-mail: denzil@denzil.com *or* info@denzil.com) for information on export and markets

CATHARANTHUS ROSEUS

A wealth of folk remedies are prepared from the plant, which is regarded as having astringent, diaphoretic, emmenagogic, abortifacient, bechic, cardiotonic, hypotensive, febrifugic and tranquillizing properties.

The primary active chemical constituents, which are most concentrated in root bark, are the alkaloids ajmaline, serpentine and reserpine, but at least 12 others have been positively identified, including leurosine and vincaleukoblastine. Vinceine, tetrahydroalstonine and lochnerine, which are also present in the root bark, are important for pharmaceutical purposes. (*Source: Medicine trees of the tropics*, by Robin Levingston and Rogelio Zamora, in *Unasylva*, No. 140 – The importance of medicinal plants. An international journal of forestry and forest industries, Vol. 35. 1983. FAO: www.fao.org/docrep/q1460e/q1460e02.htm) ●

Catharanthus roseus

COUNTRY COMPASS

ALBANIA

The Albania Private Forestry Development Program (APFDP) is funded by the United States Agency for International Development and implemented by Chemonics International Inc. Based in Tirana, with its field activities extended over 15 districts, the project was initiated in 1995 and will be completed by April 2001.

APFDP is designed to increase Albanian rural household incomes, alleviate and ultimately reverse forest environmental degradation by encouraging and supporting the development of sustainable private forestry management on privately owned lands and on community, village and state-owned forests and pastures.

APFDP has now set up its own site where readers will find the on-line directory of Albanian enterprises dealing with medicinal herbs and spices, as well as a catalogue of willow products and furniture.

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www.apfdp.org; *or*
www.chemonics.com

ALGERIA

NWFPs in the forest region of Yakouren

The forest region of Yakouren is distinguished potentially by many NWFPs, such as cork, game, herb products, mushrooms and honey.

Cork is the most important NWFP in the region. Since 1990, the annual average production has been 225.6 tonnes. The area harvested reached 2 550 ha (the total area of the Yakouren forest is 5 705 ha). A large part of this production is destined for export and the rest for local transformation. There are seven factories at the national level manufacturing products derived from cork, such as: bottle stoppers, engine joinery, parquet (flooring), decoration, roll-cork and shoe soles. The INRF-AZAZGA forest research station integrates various field activities - silviculture, site classification, cork quality – aimed at targeting the sustainable development of cork oak and maintaining a high production level of best-quality cork.

Acorns constitute an appreciable volume of cattle feed; unfortunately, the harvesting of these fruits has a negative influence on forest regeneration.

More than 54 mushroom species have been identified and their ecological distribution known. Most of the edible mushrooms that are harvested on a large scale grow on *Quercus faginea* in humid areas with a northern exposure.

One aspect that has emerged recently is the importance given to aromatic plants, such as *Laurus nobilis, Myrthus communis, Thymus vulgaris* and *Lavandula stoechas, w*hich are widely used in cooking or in the traditional treatment of diseases. Development of these NWFPs must be preceded by studies focusing on: inventory of the most useful species, ecological adaptation on large areas, economic profitability, and development techniques (regeneration, harvest, etc.) in accordance with sustainable forest management.

In addition, the roots of *Erica arborea* are used for briar pipe and ash pan manufacturing.

Lavandula spica – Lavanda officinalis

Other NWFPs that play an important role in the socio-economic life of the population are honey and beeswax. The quantities harvested around shrubs dominated by *Arbutus unedo* and *Lavandula stoechas* easily reach 15 litres per beehive, especially when the climate is favourable.

For more information, please contact:
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BOSNIA AND HERZEGOVINA

Citizens' association for medicinal and aromatic plants in the Federation of Bosnia and Herzegovina

The Association of Citizens for Medicinal and Aromatic Plants was established in June 2000. The citizens of Bosnia and Herzegovina have a long tradition of collecting and processing different kinds of wild medicinal and aromatic plants; different kinds of tea, tinctures and essential oil have been made. In addition, there are very good climatic conditions for these plants in Bosnia and Herzegovina.

The objectives of the association are to:

- protect wild medicinal and aromatic plants and other NWFPs from destruction;
- educate collectors and producers of medicinal and aromatic plants;
- establish connections between collectors and producers of medicinal and aromatic plants and companies which process these plants;
- establish connections with similar associations; and
- represent the interests of association members at the public and policy levels.

Association members are all those who have an interest in medicinal and aromatic plants or other NWFPs: collectors of wild growing plants, producers who cultivate different kinds of these plants, processing companies, etc.

Medicinal herbs in Republika Srpska

With regard to the collection and production of medicinal herbs in Republika Srpska, the conclusion was reached that the interests of the individuals engaged in any activity related to medicinal herbs could only be realized in an organized way. For that purpose, Republika Srpska Association for Medicinal Herbs was established in December 1999. The non-political, non-governmental and non-profit association is divided into two sections – one of medicinal herb collectors and the other of medicinal herb producers/growers.

The association's main tasks are:

- the development and promotion of the registration, preservation and collection of medicinal herbs;
- the development and promotion of production, processing and trading of medicinal herbs;
- to offer professional assistance to members in: purchasing raw materials and equipment, controlling the quality of medicinal herbs, trading with medicinal herbs, etc.; and
- to encourage the development of the production of medicinal herbs in Republika Srpska.

One of the first projects is the education of collectors and producers of medicinal herbs, aimed at creating self-sustained and controlled harvests in a way that will generate income, without at the same time destabilizing the ecological balance of the environment.

Among members, the most frequently grown herb in the plantations is *Matricaria chamomilla*, which is produced in ecologically clean conditions, without any chemicals or fertilizers. This production method is of great importance since *M. chamomilla* is used for tea in both folk and official medicine.

Since Republika Srpska has considerable coniferous forest resources, test distillation and production of coniferous essential oils was started, primarily from *Abies alba* and *Juniperus communis*. Analysis and examination at the "Kurt Kitzing" Institute for Chemical Analysis and Quality Control in Germany

Matricaria Camomilla

determine the consistency and quality of these oils. According to the institute, they are high-quality coniferous oils, owing to their pleasant smell and high concentration of typical components. On the basis of these results, and keeping in mind the quality raw material from which they are processed, there appears to be a real possibility of starting production of ether oils for the world market. The results are also encouraging for the further production of oils from other wild-growing coniferous trees, as well as from other aromatic herbs.

At present, it is important for the producers and the association to find a suitable market for these products and a better organization and networking of the producers, as well as increasing production of ether oils, in order to justify market research in this regard.

The greatest problem is lack of funds, since members are not able to increase and finance production by themselves. (*Contributed by:* Mrs Nedjada Kosovic, Biljana Gligoric, Ezrema Delalic and Mrs Ljiljana Dunjic.)

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BRAZIL

Non-timber forest products in the Amazon and markets

In the 1990s, there was intense debate on development alternatives in the Amazon region. On the one hand, neoclassical economists postulated that non-timber extraction is a primitive and transitory economic activity. Owing to its supply rigidity and increasing shortage faced with growing demand, it will give way to species domestication and cultivation on a large scale or will be substituted for like-products. On the other hand, the economic importance of this kind of forest extraction should be recognized since it involves approximately 16 percent of the rural inhabitants of the Brazilian Amazon. However, since this activity has already been considered as low-impact and non-exclusive, alternative economists, sociologists and anthropologists are now favouring a new form of governmental intervention, through fiscal and credit subsidies which privilege this economic sector, thus contributing to the conservation of forest resources.

A recent study to analyse this issue has as its objective a third approach, that by being ecologically important, NTFPs are also economically viable.

By examining time series data of national production statistics for several NTFPs in the Amazon region, it was observed that even after introducing a competing substitute product, the production of the NTFP did not decline to zero. This implies that substitute products do not respond to the expectations of all the demand segments of markets for NTFPs. In fact, NTFPs have specific qualities that differentiate them within the market context, and particularly in the "green" and "organic" markets. These are two distinct niches where consumers are willing to pay more for the specific qualities of a NTFP, independent of whether substitute products (cultivated, synthesized or industrially processed) exist.

COUNTRY COMPASS

The "green" markets are the consumers who will pay more for products which contribute to conserve ecology; and the "organic" markets are the consumers – firms and individuals – who demand products from native sources which have a broad genetic variability and are free from toxins.

In conclusion, although the rigidity of NTFP supply implies the substitutability for some demand segments, other segments are still willing to buy them because the products respond to market expectations concerning quality, quantity, supply normality and price.

Moreover, if the production of a NTFP can fall initially with the onset of competition from a substitute, this product can again be replaced in the market, proportionate to the time needed to find niches still able to consume it.

This theoretical model can help in the implementation of programmes and projects designed to foster economy and environmental management based on the trade in NTFPs, thus contributing to the revival of an economic sector that responds to the income and well-being expectations of extractive populations and international efforts to conserve biodiversity. (*Contributed by:* Mr Vag-Lan Borges, Brazil.)

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Açaí (*Euterpe oleracea*)

People in Los Angeles, United States, can already ask in Portuguese for açaí (*Euterpe oleracea*), which is a mixture of açaí and guaraná or other energy products. Early in 2000, a Brazilian company, Muaná Alimentos, sent 100 kg of pulp to the North American market; an additional 400 kg were sent later, and in October 2000, 5.5 tonnes of sweetened pulp and 1 tonne of pure pulp were sent to the gymnasia and snack bars of Los Angeles.

Shipped in Belém, the batches were processed, frozen sweetened and packed in 3-kg plastic buckets stamped "Açaí". In September that year, two North American representatives had visited the Brazilian plant, mainly interested in the mixture of açaí with guaraná that, according to them, had more chance of finding a place in the North American market as "tropical vitamin" species. The company has also made contact with importers in Europe and Asia, possible purchasers of the fruit. If the experience gives the expected results and if the product is accepted in the North American and European markets, the national exports of açaí can explode over the next few years, benefiting producers, transporters, traders, local industries and populations that depend on the resources generated by açaí stands.

With its offices in São Paulo, and its plant in the agro-industrial company Ita (which has been processing palm hearts [palmito] of açaí in the region since 1980), Muaná Alimentos has as a minority partner with 49 percent, "Fundo Terra Capital", an international organization that directs money from the World Bank, the Swiss Government and other investors to ecologically sound projects. In 2000, the company invoiced US$4 million with the production of 540 tonnes of palmito of açaí (a volume corresponding to1.8 million 300-g glass jars) and 250 tonnes of pulp.

Brazil is the leading producing, consuming and exporting country of palmito conserves in the world. According to the National Association of the Manufacturers of Palmito (ANFAP), the country accounts for 85 percent worldwide (the remainder comes from plantations and natural stands in Costa Rica, Paraguay, Bolivia, Ecuador and Peru). Ninety percent of the national production (which was calculated last year at 28 000 tonnes) comes from the Amazon, mainly the state of Pará; the remaining 10 percent was from Santa Catarina and Paraná. The company's goal, however, is to invert the production ratio: 1 800 tonnes of açaí pulp and 1 200 tonnes of palmito in conserve by 2003, thus tripling the invoicing.

Muaná Alimentos possesses 5 000 ha of açaí stands (it also harvests palmito and açaí in 3 000 ha of leasehold lands, also buying from third parties), in addition to the 400 ha of permanent conservation used as reference in the conservation of biodiversity. The objective is to reach 35 000 ha in five years, of which 28 000 ha will be managed.

With an eye to the external market and to the growing domestic demand for health foods, the company is investing in sustainable management techniques and is directing its contracts with suppliers towards techniques that guarantee the maintenance of the biological diversity of the forest and their transfer to the local communities.

Thanks to the sustainable management techniques, Muaná Alimentos should receive the endorsement of the Forest Stewardship Council (FSC), the main certifying agency for forest products, represented in Brazil by the Instituto de Manejo e Certificação Florestal e Agrícola (Imaflora). Besides ecological sustainability, the company is developing social programmes for the local communities, such as the project "Açaí Marajoara", carried out in partnership with the state government and the municipalities of Curralinho, Sebastião da Boa Vista, Ponta de Pedras, Cachoeira do Arari and Muaná Alimentos.

The project, which started in May 2000, aims to guarantee the economic sustainability of the communities through professional training, training of development agents and other actions.

"Nowadays, it is not enough only to invest in the product," says Mr Schnyder, the commercial director of Muaná, recalling that technical knowledge on forest management is still at the beginning. "The challenge of the future is to promote the fruits of the Amazon in a rational way, preserving them for future generations." (*Source: Revista Globo Rural*, November 2000.)

CAMEROUN

Les agroforêts cacao: espace intégrant développement de la cacaoculture, gestion et conservation des ressources forestières au sud Cameroun

Au Cameroun, les cacaoyères sont créées à l'ombre de la forêt. Trois structures ont jusqu'ici intervenu, sans grandes interférences, dans le développement et l'aménagement de l'espace forestier au sud Cameroun (zone de forêt humide du Bassin du Congo). La gestion de la cacaoculture s'est faite par le canal de la Société de développement de cacao (SODECAO). Les plans d'aménagement des forêts assurés par l'Office nationale de développement des forêts (ONADEF) ou les structures que cet office a remplacées, se sont traduits par l'exécution de nombreux programmes de reforestation. Plusieurs aires protégées ont été érigées par la Direction des forêts du Ministère de l'environnement et des forêts (MINEF) pour conserver les ressources forestières. Depuis la crise cacaoyère et la libéralisation de la filière cacao, les paysans, sans l'appui des services de vulgarisation, essayent de diversifier de plus en plus les plantes dans leurs cacaoyères (surtout dans les zones à forte pression foncière). Ils y gèrent les produits forestiers non ligneux (PFNL), les fruitiers exotiques, les plantes médicinales, les bois d'œuvre et les cultures vivrières. Ces écosystèmes deviennent des espaces où se conjuguent développement de la cacaoculture, gestion et conservation des ressources forestières.

Les agroforêts cacao restent l'une des principales sources monétaires en zone rurale dans les provinces du centre et sud du Cameroun. Parmi les cacaoculteurs, 81 pour cent n'ont pas d'autres activités que l'agriculture. Plus de 85 pour cent n'ont pas de contact avec les vulgarisateurs. Les terres coutumières exploitées pour la cacaoculture relèvent du domaine national. Dans cette zone 97 pour cent des cacaoculteurs sont autochtones. La transmission des agroforêts est patrilinéaire. Plus de 50 pour cent des cacaoyères actuelles ont été héritées.

Les relevés botaniques et le regroupement des espèces suivant leur utilité permettent de ressortir trois types de cacaoyères en zone de forêt humide du Cameroun. L'un des types se caractérise par une densité en cacaoyers 70 pour cent plus forte que les autres. Les deux autres ont soit une forte densité en Musacées et en palmiers, soit une forte densité en bois d'œuvre de haute valeur économique et en PFNL. La densité moyenne des plantes (cacaoyers et autres espèces) de chaque type de cacaoyère varie entre 400 et 680 m par hectare. Ces différences de densité offrent ainsi plusieurs types d'intervention dans le contrôle des pestes (capside et pourriture brune) du cacaoyer, de gestion et de conservation des ressources forestières dans les agroforêts cacao. Les actions de diversification à l'intérieur des cacaoyères initiées par les paysans nécessitent d'être relayées par les structures de recherche, de développement et les organisations non gouvernementales. (*Source: Les agroforêts cacao: espace intégrant développement de la cacaoculture, gestion et conservation des ressources forestières au Sud-Cameroun*, par Denis J. Sonwa, Stephan Weise, Mathurin Tchatat, A. Bernard Nkongmeneck, A. Akinwumi Adesina, Ouseynou Ndoye et James Gockowski. Communication presentée lors du second colloque panafricain sur l'utilisation durable des ressources naturelles en Afrique, organisé par l'Alliance mondiale pour la nature (UICN) à Ouagadougou, Burkina Faso, 24 au 27 juillet 2000, sous le thème «Développement et utilisation durable des ressources naturelles en Afrique: conflit ou parfaite complémentarité».)

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Christian Seignobos

Le Réseau Africain d'Ethnobotanique

COUNTRY COMPASS

***Ricinodendron heudelotii* (Djansang): étude ethonobotanique et importance pour les habitants des forêts du sud Cameroun**

La domestication d'arbres fruitiers sauvages indigènes pour leur intégration dans les systèmes d'utilisation des terres existants vise à améliorer les moyens de subsistance des communautés rurales tout en conservant la biodiversité. L'amélioration pourrait concerner les systèmes de production, des opportunités génératrices de revenus ou le bienêtre nutritionnel. Une étude ethnobotanique et une collecte de germoplasme de *Ricinodendron heudelotii* (un arbre fruitier indigène) ont été effectuées dans six provinces de la forêt humide du Cameroun. Des échantillons de fruits ont été collectés à des intervalles de 40 à 50 km le long du réseau routier principal du sud Cameroun dans des jardins de case, des champs de cultures vivrières ou de rente, des jachères et des zones de forêt primaire. À chaque endroit, les échantillons ont été collectés sur des arbres choisis par les fermiers. Des questionnaires ouverts ont été utilisés pour interroger les fermiers et comprendre l'importance de cet arbre dans leur communauté.

Cent fruits en moyenne ont été récoltés par provenance ou accession pour la collecte de germoplasme et la description morphologique. Un total de 47 accessions ont été enregistrées et les performances pour le poids des semences calculées par accession. La morphologies des fruits a montré des formes de hile variées, ce qui indique une variabilité entre provenances, que l'on observe aussi pour le nombre de graines par fruit. Le poids des graines varie de manière significative entre provenances, avec une différence de 110 g entre les extrèmes. Quatre utilisations majeures sont dérivées de l'espèce, selon le groupe ethnique, allant, par ordre de priorité, de la consommation alimentaire à des usages médicaux, socio-culturels jusqu'à l'amélioration de la fertilité des sols. (*Source:* Ricinodendron heudelotii *(Djansang): étude ethonobotanique et importance pour les habitants des forêts du sud Cameroun*, par J.M. Fondoun, Tiki Manga et J. Kengue. *Bulletin de Ressources Phytogénétiques*, N^{o} 118.)

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Local participation essential for sustainable forest management

Local stakeholders, such as the Bantu and Bagyeli ("Pygmies") in Cameroon, should be involved in making decisions about tropical rain forest use and management. The immense economic value of timber has turned the forests on which these populations depend for their livelihood into politically contested spaces. Only a sound planning of forest land use and effective collaboration between government agencies, logging operators and local groups may prevent a conflict between logging and local forest use.

This was the starting point for six years of social science research in the Tropenbos-Cameroon Programme, the integrated results of which have now been published in the Tropenbos-Cameroon Series. The Tropenbos-Cameroon Programme is a joint research effort of Cameroonian institutions, the universities of Wageningen and Leiden, and the Tropenbos Foundation in Wageningen, the Netherlands. Its activities focus on developing methods and strategies for natural forest management for the sustainable production of timber, non-timber forest products and ecological services. The well-being of local populations is of great importance to the programme. The latest volume in the Tropenbos-Cameroon Series, therefore, assesses the footholds and pitfalls for their involvement in collaborative management regimes.

The research was carried out in the southwestern part of Cameroon. In this sparsely populated area, the Bantu population lives along roads, cultivating food and cash crops. Most Bagyeli live in the forest at some distance from these roads. Their livelihood depends primarily on hunting, fishing, the gathering of forest products and, to a lesser extent, some farming. The forest offers both population groups an important source of food, shelter, medicine, household equipment and cash income. Until recently, logging companies also operated in the area. Those concerned in industrial logging dominate any decision-making on forestry management. As economically and politically marginal groups with an unequal share in legal power, local populations have little say.

This study provides a better understanding of the local importance and peoples' perspectives of the forest, customary and formal tenure arrangements, and potential structures for negotiation and conflict resolution. It formulates concrete recommendations on how to organize the participation of local populations in comanagement regimes. The study reveals a highly diverse sociopolitical landscape. This implies that the various groups will be differently affected by future management arrangements that place restrictions on local forest use. The authors point to the need specifically to involve minority groups with little negotiating power, such as the Bagyeli and Bantu women, in decision-making on sustainable forest management. Regional platforms for negotiating agreement on rights and duties in forest management between the appropriate government agencies, logging companies and local populations can create a proper setting for this. (*Source:* J. van den Berg and K. Biesbrouck. 2000. *The social dimension of rainforest management in Cameroon: issues for co-management*. The Tropenbos Foundation, Wageningen. Tropenbos-Cameroon Series No. 4. ISSN 1566-6484. ISBN 90-5113-043-0.)

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[*Please see under Special Features for more information on Cameroon.*]

CANADA

Economic potential of NTFPs on the Queen Charlotte Islands, Canada

Seeing the forest beneath the trees: the social and economic potential of non-timber forest products and services in the Queen Charlotte Islands/Haida Gwaii – a report by Sinclair Tedder of the British Columbia Ministry of Forests, Darcy A. Mitchell of Royal Roads University and Mitchell Consulting Associates, and Ramsay Farran of Mitchell Consulting Associates. Funding for this project came from the South Moresby Forest Replacement Account, and the British Columbia Ministry of Forests.

This report examines the current and potential use of commercial non-timber forest products (NTFP) on the Queen Charlotte Islands/Haida Gwaii, British Columbia, Canada. While a thriving industry currently exists for the harvest and export of chanterelle mushrooms, many other products have commercial potential, but the prior resolution of many economic and social issues may be necessary.

Based on numerous interviews and open houses, the report examines many of the issues facing local residents regarding the use of NTFPs for commercial purposes. The issues include potential impacts on Haida and non-Haida subsistence and cultural uses, local control of resources, the potential abuse of the land base by outside interests, and economic and investment constraints. The report concludes that with proper understanding of the use, and abuse, of the non-timber resource and its environment, opportunities do exist for locals and non-locals to expand the current use of NTFPs. Also included in the report are a picker's diary, industry contacts and a bibliography.

A pdf version of the report can be viewed on the province of British Columbia, Canada, Ministry of Forests' Web site.

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Non-timber forest product industry in Canada: scope and research needs

With a current yearly output of $241 million per year, NTFPs contribute significantly to the welfare of rural and First Nations communities in Canada. Maple sap products, wild mushrooms and wild fruits are the most important NTFP for consumption in Canada. Because of the increased access to international markets by entrepreneurs, along with a growing international demand for NTFPs, it may be possible to double or triple Canada's NFTP harvest.

Further development of this industry should be associated with adequate training of harvesters in terms of NTFP biology in order to maximize profits while achieving biological sustainability. Research should also emphasize the domestication of specific NTFPs to meet the growing demand, increase revenues and promote biodiversity conservation. (*Source: The Forestry Chronicle*, 56(5): 743.)

CHINA

Forestry and Society Newsletter

The purpose of the biannual *Forestry and Society Newsletter* (FSN) is to report on the development of community forestry in China. In addition, FSN aims to promote the exchange of information, new technology and research methods in China and countries around the world.

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Non-wood forest products in Xin Xian county

Located in the rugged Dabieshan Mountains in southern Henan Province, Xin Xian county is one of China's poorest counties, with an annual per caput income of Y 765 (US$93). A significant proportion of farmer income in this county is derived from several non-wood forest products (NWFP).

Xin Xian county is one of China's leading producers of chestnuts, *Castanea mollissima*, a sweet and nutritious nut. China is the world's leading producer of chestnuts and a high percentage of production is exported to Japan and other countries. In Xin Xian county, some 13 000 ha are dedicated to chestnut production, yielding an annual crop of about 10 000 tonnes. Chestnut trees are usually grown on steep mountain slopes and often look more like a forest than an orchard. Some chestnut trees, however, are grown on terraced slopes in an agroforestry system. Approximately 80 percent of the orchards are privately owned and the remainder are managed as communes by townships. Owners of private orchards usually have from 50 to 100 trees and rely entirely on chestnuts for their income. The trees begin to bear nuts about three years after they are grafted and continue to produce profitable quantities of nuts for about 40 years.

Insects and diseases, both in the orchards and later in storage, are important factors affecting production. Current estimates indicate that roughly 20-30 percent of the crop is destroyed annually, and in localized areas damage may be as high as 50 percent. This equates to an annual loss of Y 42 million (approximately US$4.9 million). The most

important insect pests in Xin Xian county's chestnut orchards are weevils and nut boring caterpillars. The chestnut gall wasp attacks buds and forms an irregular gall that kills branches. In some parts of China and also the Korean peninsula and Japan, where this insect has been accidentally introduced, it can affect chestnut production. In Xin Xian county, however, it does not appear to be a major pest. The weevils and nut boring caterpillars are often brought into storage facilities where they continue to feed on the chestnuts. Fungi cause a fly-speck disease when the chestnuts are stored using traditional methods, which consist of mixing the chestnuts with a mixture of moist river sand and mulch. At present, chestnut farmers rely heavily on chemical insecticides to control chestnut insects. The development of an integrated pest management (IPM) system for chestnuts and the construction of a controlled atmosphere storage facility is currently being facilitated through FAO TCP/8925(t) – Integrated Pest Management and Storage of Chestnuts in Xin Xian County.

Gingko, *Gingko biloba*, is another important NWFP in Xin Xian county. Estimates of total area planted to gingko are not available because most plantings consist of small numbers of trees planted among other crops. Gingko produces a fruit that has long been a source of traditional Chinese medicines. Recently, gingko products have been in great demand in Europe and North America. The leaves of the gingko tree are made into a herbal tea that reportedly reduces high blood pressure and cholesterol. Gingko tea is produced in Xin Xian county by Henan Lingrui Pharmaceutical Limited at a modern facility where a number of herbal medicines are manufactured. The tea has a bitter but pleasant taste.

Xin Xian county's chestnut plantations are interspersed with forests of masson pine, *Pinus massoniana*. These forests are the source of another of China's important NWFPs – resin. China is a leading producer of pine resin and masson pine is the county's principal resin producing tree. Many of Xin Xian county's pine forests show evidence of either current or past resin tapping operations. (*Contributed by:* William M. Ciesla.)

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COLOMBIA

Llamado para un uso sostenible de plantas medicinales en Colombia

El comercio de más del 70 por ciento de las plantas medicinales y aromáticas comercializadas en Bogotá no está regulado y las especies no están oficialmente registradas por el Instituto Nacional de Vigilancia de Medicamentos y Alimentos (INVIMA). En Colombia, de acuerdo al INVIMA, está permitido el comercio para aproximadamente 100 especies de plantas medicinales, de las cuales solamente 11 son nativas. Según un estudio llevado a cabo por TRAFFIC, el programa de monitoreo de comercio de vida silvestre de la Unión Mundial para la Naturaleza (UICN) y del Fondo Mundial para la Naturaleza (WWF), sólo en Bogotá al menos 200 especies de plantas medicinales se comercializan regularmente en grandes volúmenes en los mercados locales.

Los resultados de este estudio están incluidos en las memorias del taller sobre *Uso y comercio sostenible de plantas medicinales en Colombia,* realizado del 18 al 19 de septiembre de 2000. El taller, que fue auspiciado por el Ministerio del Medio Ambiente de Colombia y el Ministerio de Cooperación Económica y Desarrollo de Alemania (BMZ) e involucró alrededor de 50 representantes del sector público y privado del país, fue una ocasión que permitió compilar la información disponible y actualizada sobre la legislación, controles del comercio, investigación y desarrollo de la industria de plantas medicinales en Colombia.

El documento del taller revela el consumo creciente de plantas de origen colombiano, tanto a nivel nacional como internacional, en un ambiente donde los niveles oficiales de regulación del comercio son claramente incipientes. A partir de varias presentaciones y discusiones en el taller, quedó claro que la demanda de materia prima de plantas medicinales por parte de centros de medicina natural, hospitales y laboratorios se ha incrementado en los últimos años aproximadamente en un 50 por ciento. También hay preocupación sobre la inadecuada identificación de las plantas comerciadas, con riesgos potenciales para la salud, como envenenamiento y alergias.

Representantes presentes en el taller promovieron acciones multisectoriales e interinstitucionales para un eficiente uso del recurso, así como mayores discusiones y diálogos abiertos sobre los sistemas de comercio existentes. Las recomendaciones realizadas por el taller se concentraron en aspectos de medio ambiente, salud, investigación, comercio y conservación de plantas medicinales. Entre los más urgentes, está la inmediata revisión de la lista básica de plantas del INVIMA y la inclusión de más especies utilizadas regularmente, como el romero (*Senecio pulchellus*), el confrey (*Symphytum peregrinum*), la cola de caballo (*Equisetum giganteum*) y la zarzaparrilla (*Smilax medica* y *S. officinalis*), entre otras.

Tanto los participantes como los organizadores resaltaron la necesidad de mejores controles contra el uso indiscriminado de plantas medicinales. Un mayor diálogo entre autoridades que regulan las actividades de extracción y comercio, y una mejor cooperación entre

sectores involucrados e interesados, se señalaron como pasos fundamentales. «Estas son acciones esenciales para promover el desarrollo adecuado de esta industria y la reunión de hoy es un paso significativo para mejorar el sistema de regulación actual que afecta al comercio», dijo Ximena Buitrón de TRAFFIC América del Sur, una de las organizadoras del taller. (*Fuente:* TRAFFIC, Comunicado de prensa, 2 de febrero de 2001.)

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COSTA RICA

El conocimiento de los recursos bióticos comestibles presentes en los bosques húmedos tropicales puede ser una alternativa para la protección de los mismos y una fuente adicional de energía alimentaria, especialmente para las poblaciones humanas más empobrecidas de la región, así como materia prima para la agroindustria nacional y regional.

En la Reserva indígena Tayní, Provincia de Limón, se realizó un estudio que consistió en exploraciones etnobotánicas sobre el uso y conocimiento de la flora silvestre con valor alimenticio. Se obtuvo un total de 40 plantas comestibles. Las familias botánicas más representativas por el numero de especie comestible son: la Arecaceae con siete palmas, la Mimosaceae con cuatro especies arbóreas, y la Sapotaceae con tres especies arbóreas que produces frutos comestibles. De todas las plantas comestibles identificadas, sólo una pequeña parte se consume con relativa frecuencia (los palmitos, zapotes y caimitos), el resto hace parte exclusivamente del conocimiento tradicional indígena.

El estudio recomendó iniciar un proceso de investigación multidisciplinario, paralelo al etnobotánico, tendiente a la selección, domesticación y comercialización de la especies consideradas más promisorias (*Diospyros dygina, Brosimum alicastrum, Licania* sp., *Pouteria sapota, Pouteria caimito, Euterpe precatoria, Chamaedorea tepejilote, Iriartea deltoidea* y *Passiflora vitifolia*). (*Fuente:* J.P. Madriz Masís, Explotación etnobotánica en los bosques húmedos tropicales de la Reserva Indígena Tayní, Costa Rica. *Revista Forestal Centroamericana.* Octubre-Diciembre 1999, págs. 22-26.)

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FINLAND

Berry bonanza

Wild berries thrive well in the light forests and peatlands of the boreal forest zone, and through the centuries they have been among the benefits forests generously provide for the welfare of all people.

In Finland, picking berries and mushrooms is part of traditional common rights, usually referred to as “everyman’s rights”, to utilize the forests. Although these rights are not written in law, berries, mushrooms and some other products have been purposefully excluded from the property rights of the forest owner. The argument for this is social. During tough times these products have had particular and sometimes indispensable value, especially for the poor.

A recent study at the University of Joensuu indicated that the tradition of picking wild berries continues to be strong. In 1997, 60 percent of Finnish households picked 56.5 million kg of wild berries while in 1998 a total of 49.7 million kg were picked.

What makes these results surprising is that the quantity of berries picked in 1997 was probably higher than in any previous year. Until now, the highest officially documented figure was 47 million kg recorded for the wartime year of 1943. According to the officially documented figures, which were mainly drawn from household surveys, the quantities collected dropped significantly during the 1950s and 1960s. Presumably, berry picking has been increasing since the 1970s, perhaps largely due to the increasing number of freezers suited for household use, but reliable annual estimates of household use have been lacking. Since 1977, commercial picking statistics have been available and these form the backbone of the official figures.

The berry harvests, averaging 25.8 kg per household in 1997 and 22.6 kg in 1998, were mainly intended for home use. However, in 1997, the amount sold was 15.4 million kg, or 27 percent, which was harvested by 5 percent of the households. In 1998, the quantity of berries picked for sale was slightly lower, 12.8 million kg. The estimates of the study were systematically higher than those provided by the annual statistics, 40 percent higher in 1997 and 52 percent higher in 1998.

On the first harvest trip of the season, you should eat all that you pick that day to ensure good future yields.

Finnish folk proverb

Species No. 31-32 - 1999

COUNTRY COMPASS

The wild berry markets are diverse and a well-informed picker can choose other marketing channels than those included in the statistics. Better prices can be reached through direct sales to tourism enterprises, restaurants and even individual customers, which all remain outside the official statistics.

The price paid to berry pickers has decreased rapidly, since import prices from the Commonwealth of Independent States and the Baltic States have been extremely competitive, leading to increased imports. The profitability of commercial picking seems to be seriously threatened in Finland and the need to seek for alternative marketing channels has become increasingly important. A recent Scandinavian merger produced the biggest primary processing unit of wild berries in Europe, signalling a trend towards larger units, in the search for increased profitability. (*Source: Taiga News*, No. 31, Spring 2000.)

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Certified NTFPs – organic berries

In Finland, vast tracts of public forest land are now being harvested for wild organic berries. In 1998, more than 4 million ha of land in Lapland, Kainuu and North Karelia were joined in an organic NTFP harvesting area. This land is operated primarily for timber production, but members of the public have open access rights and berry harvesting has long been a traditional pastime. NTFPs harvested from these lands meet organic criteria and are marketed as such. This is made possible because of the negligible use of chemicals by many of the country's managing forest companies. Harvesters are provided with information and training about the rules of organic NTFP harvesting. They then sign an agreement to follow harvesting instructions and are given a picker's card, which is essentially a contract with a registered organic buyer. There are no regulations about harvest levels but also few reported cases of overharvesting.

This example of certifying a common access harvesting system is relatively unique and may not be easily replicated or desirable for the NTFPs. (*Source: Forest, Trees and People Newsletter*, No. 43, November 2000.)

GABON

Voir le tableau ci-dessous.

Pour plus de détails, veuillez contacter: Jean Philippe Jorez, Association pour le développement de l'information environnementale, BP 4080, Libreville, Gabon.
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Principaux PFNL utilisés et vendus au Gabon

Noms scientifiques	Noms communs	Familles	Partie utilisée	Utilisations
Aframomum sp.	Adzôm ou maniguette	Zingibéracées	Fruits et feuilles	Alimentaire et médicinale
Afrostyrax lepidophillus	Arbre à ail	Styracacées	Graines et écorces	Condimentaire
Antrocaryon klaineanum	Ondzabili	Anacardiacées	Fruits - Écorces	Alimentaire - Médicinale
Coula edulis	Noisette	Olacacées	Fruits - Écorces.	Alimentaire - Médicinale
Dacryodes buetneri	Ozigo	Burseracées	Fruits - Écorces	Alimentaire - Médicinale
Dacryodes edulis	Safou	Burseracées	Fruits	Alimentaire
Garcinia klaineana	Bois amer	Guttiféracées	Écorces	Médicinale et distillant
Gnetum africanum	Kumbu	Gnétacées	Feuilles	Alimentaire
Guibourtia tessmannii	Kevazingo	Cesalpiniacées	Écorces	Médicinale
Irvingia gabonensis	Odika	Irvingiacées	Fruits et amandes Écorces	Alimentaire et médicinale Médicinale
Megaphrynium macrostachyum	Feuilles de marantacées	Maranthacées	Feuilles	Emballage du manioc et autres denrées alimentaires
Monodora myristica	Muscadier ou nding	Annonacées	Graines	Condimentaire et médicinale
Panda oleosa	Muvoga	Pandacées	Graines	Alimentaire
Pseudospondias longifolia	Offos	Anacardiacées	Fruits - Écorces	Alimentaire - Médicinale
Pteridium aquilinum	Pousses de fougères	Ptéridophytes	Frondes	Alimentaire et médicinale
Raphia sp.	Raphia ou bambou	Arecacées	Feuilles, fruits, sève...	Usages multiples
Ricinodendron heudelotii	Essessang	Euphorbiacées	Graines - Écorces	Condimentaire - Médicinale
Tetrapleura tetraptera	Kwagsa	Mimosacées	Gousses - Écorces	Alimentaire - Médicinale
Trichoscypha acuminata	Raison du Gabon	Anacardiacées	Fruits	Alimentaire

(*Source: Synthèse bibliographique sur les produits forestiers non ligneux en Afrique centrale*, par Serge Morel Manembet. Association pour le développement de l'information environnementale [ADIE]. Rapport de stage.)

COUNTRY COMPASS

GHANA

Ghana to develop medicinal plant garden at Aburi Botanic Gardens

Using a £79 000 (approximately US$115 000) grant from the United Kingdom National Lottery and Charities Board and with technical assistance from Botanic Gardens Conservation International (BCGI), the Aburi Botanic Gardens will develop a 50-hectare site as a model medicinal plant garden. When finished, the garden will be used to encourage villages in the neighbourhood to grow and sell more medicinal plants. It should also help educate adults and children in the region to appreciate their medicinal plant heritage and to learn to identify the key species of medicinal plants that grow in Ghana.

The garden will work closely with the nearby Mampong Centre for Research into Traditional Medicine, which carries out research into the uses, potency and commercial value of medicinal plants and herbs. (*Source: Plantwise Newsletter*, Issue 7, April 2000.)

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GUYANA

Crab oil – a promising NTFP for Guyana

Crabwood (*Carapa guianensis*) or andiroba, as it is known internationally, is one of the most common hardwood species found within the Iwokrama Forest. Crabwood seeds fall mainly from May to July during the mid-year rainy season. These seeds are collected and processed to make crab oil.

To extract oil from the crabwood seeds, the seeds are boiled and left to decompose for a period of one to two weeks. The seeds are then cut, and the core of the seed extracted and placed on zinc sheets and exposed to the sun. As the sun heats the zinc and seed pulp, the crab oil trickles out into containers. Some crab oil producers use a matapee (a long woven, sieve-like device most commonly used to process raw cassava) to squeeze the oil from the pulp where it is processed in jars. One litre of oil is yielded from approximately 3.6 kg of fresh seeds.

Mixed with honey, or taken in concentrated form, crab oil is said to be used to ease coughing and to soothe asthma. Brittle hair can also be cured with regular treatment of this oil. When rubbed on the skin, crab oil is thought to soothe bruises, swollen and sore muscles, arthritic joints and minor skin irritations and also acts as an insect repellent.

Owing to the reputation of crab oil, the Iwokrama project is working in partnership with various regional councils and local villages to explore the commercial potential of this oil from Guyana's forests. A research team consisting of Janette Forte, Principal Social Scientist, Dr David Hammond, Principal Forest Ecologist, and Twydale Martinborough, Research Assistant in Forest Science, has initiated a DFID-UK and ITTO-funded assessment of the ecological, social and economic aspects of crab oil production in Guyana. This research is under way in Region 4 (Georgetown), Region 8 (including Chenapau, Kurukabaru and Paramakatoi), Region 9 (including NRDDB-affiliated communities, Lethem) and Region 10 (Linden-Ituni district, including the villages of Ebini, Kimbia, Sand Hills, Hittia DeVelde and Maria Henrietta), and may be extended to other regions of Guyana where this proves to be feasible.

To ensure that the potential for crab oil is carried out in a sustainable and efficient manner, researchers are also looking at other important uses of bark and leaves. (*Source: Iwokrama Bulletin*, 4(1).)

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Plantes comestibles de Guyane

Ce fascicule sur les *Plantes comestibles de Guyane* présente les espèces ayant un intérêt alimentaire les plus couramment rencontrées à l'état naturel sur le Plateau des Guyanes et plus précisément en Guyane française.

Listées alphabétiquement, ces plantes sont brièvement décrites par leur morphologie, leur habitat et, lorsque les fruits sont consommés, leur période de fructification est donnée à titre indicatif.

L'index général reprend les noms scientifiques de même que les dénominations vernaculaires dans les différentes langues parlées en Guyane, ces différentes langues étant par grandes ethnies et par familles linguistiques (Créole, Noir marron, Amérindien).

Illustré par de nombreux dessins et photos couleurs, cet ouvrage devrait intéresser toutes les personnes amenées à se déplacer au sein de la Guyane ainsi que toutes les personnes désireuses de mieux appréhender cet environnement guyanais si riche.

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Unique indigenous knowledge recorded in the Tropenbos-Guyana Programme

Palm heart, medicinal plants and other non-timber forest products (NTFP) are of great importance to indigenous peoples in Guyana's North-West District. These people have an immense knowledge of their surrounding forest, which is now being threatened by logging, mining and forest fires. Tinde van Andel of the Utrecht branch of the National Herbarium of the Netherlands made an inventory of 587

Manicaria saccifera

Non-timber products of the North-West District of Guyana

useful plants and describes their uses, harvest and processing methods and abundance in various forest types.

Van Andel's study is part of the Tropenbos-Guyana Programme, which is a joint research effort of Guyanese Government institutions, the universities of Guyana and Utrecht and the Tropenbos Foundation in Wageningen, the Netherlands. The programme aims at developing guidelines for the conservation and sustainable exploitation of the forests of Guyana for timber and other forest products and services. Its results contribute to the formulation of criteria and indicators for sustainable forest management, which serve as a basis for the future certification of forest operations.

Van Andel conducted her study in Guyana's remote North-West District. In this sparsely populated area, indigenous peoples rely on the forest for their livelihoods. NTFPs offer a great source of food, shelter, household equipment and medicine. No fewer than 294 medicinal plant species are used in more than 800 applications. Some NTFPs, such as animals, palm heart and aerial roots used in "rattan" furniture, are being traded in national and international markets, thus providing cash income.

Several of the forest types studied are being threatened by timber harvesting, mining, forest fires and slash-and-burn agriculture. Since indigenous tribes in Guyana are also under great pressure from western society, traditional knowledge of herbal medicine and other useful plants may rapidly be lost. Van Andel documented this knowledge in a field guide, which contains short botanical descriptions and uses of 471 useful plant species. More detailed descriptions and botanical drawings are given for the 85 NTFPs of major importance. The field guide is appended as Part II of Van Andel's book, and is a unique document for all practitioners and indigenous people with an interest in sustainable forest use, particularly for those working in the Guyana Shield. (*Source:* T.R. van Andel. 2000. *Non-timber forest products of the North-West District of Guyana.* Part I and Part II. A field guide. Tropenbos-Guyana Series 8a/b. Tropenbos-Guyana Programme, Georgetown, Guyana. ISBN 90-393-2536-7.)

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INDIA

Environmental Information System

The Environmental Information System (ENVIS) was established in 1982 by the Ministry of Environments and Forests, Government of India, to collect, collate, store and disseminate information among its users on a wide range of environmental subjects through its 25 centres located in different regions of the country, working in diverse specialized fields.

The ENVIS centre on forestry was set up in 1996 at the Indian Council of Forestry Research and Education (ICFRE) at Dehra Dun. Its main objectives include the acquisition, storage and dissemination of the latest information on forestry and related issues to support research, development and innovation. One of the networking methods used is ICFRE's *ENVIS Newsletter*, the inaugural edition of which (1998) covered many aspects of NWFPs.

For more information, please contact: Mr Mudit Kumar Singh, Coordinator, ENVIS project, Directorate of Extension – NFLIC Building, Indian Council of Forest Research and Education, PO New Forest, Dehra Dun, Uttar Pradesh 248006, India. E-mail: mudit@icfre.up.nic.in

Forest bounty – organized trade helps Bastar tribals earn riches from the jungle

The tribal peoples of Bastar district of Madhya Pradesh are beneficiaries of a cooperative movement, the Madhya Pradesh Government scheme that gives villages a monopoly on minor forest products, which generated Rs 40 crore in 1999.

The tribals previously only received 20 percent of the value of their produce from the entrepreneurs at the local market (haats).

Bastar, with its rich forests, presents a bounty for its inhabitants: tora (used in soap making), harra (used in tanning), sal seeds (from which oil is extracted) and the seeds of karkatiya, nirmali and peng, all used in pharmaceuticals. There are at least 31 similar products that the tribals gather from the jungle and sell at the weekly haats. Tamarind, mahua, mango kernels, silk cocoons, lac, chironji, wax and gum continue to be the mainstay of the tribal economy. Lac, used in the production of sealing wax and in bangle making and electrical goods, sells for

Tamarindus indica

COUNTRY COMPASS

Fundación Espavé

Rs 50 000/tonne. Chironji, a dry fruit, fetches Rs 60 000/tonne, while wax and gum fetch Rs 40 000/tonne.

The government had already started market intervention in the collection of tendu leaves (for making bidis), harra and sal seeds. But it had ignored the trade in other commodities. A Bastar collector, Pravir Krishn, seeing the exploitation of the tribals by the entrepreneurs felt that the volume of trade in minor forest products in the Bastar region (worth Rs 500 crore) could be turned to the tribals' advantage – this was the start of the forest wealth movement. The government gave village committees absolute control over minor forest produce and replaced traders with self-help groups. The government fixes the price of the produce and advances the money to the self-help groups, which act as commission agents. The new arrangement has slashed the excessive profit margins of the traders. Regularization of the agricultural produce market also increased the government's tax revenues by Rs 2 crore in 1999. The traders are angry at what they consider is a violation of "free trade" but the tribals are not complaining. A women's self-help group in Aasna village earned Rs 25 000 in just 15 days in 1999 – which is more than they had earned in a long while. Regardless of what the traders feel, Bastar's tribals at last seem to be on the road to self-reliance. (*Source:* India *Today*, 11 September 2000.)

[*Editor's note: a crore is a traditional unit of quantity in India, equal to 10 million; US$1 = Rs 43.61 (30/9/99).*]

DEFINITION OF NWFP – AN INDIAN PERSPECTIVE

The Government of India, through a Constitutional Amendment (1996), has conferred ownership rights of Minor Forest Produce (MFP) – another term for NWFP – on Panchayats and Gram Sabhas (village-level institutions). Since conferring ownership of MFPs is a highly complex issue in terms of its legal, social and administrative implications, the government appointed a committee to investigate the entire gamut of MFPs.

After examining all the socioreligious and legal implications, the Government of Madhya Pradesh has defined MFP as follows: *Minor Forest Produce means non-timber forest produce which can be harvested on a non-destructive basis but this shall not include minerals and wild animals or their derivatives. Timber and Forest Produce will have the same meaning as given in the Indian Forest Act, 1927.*

Section 2 of the Indian Forest Act defines "Forest Produce" as:

- ***the following, whether found in, or brought from, a forest or not, i.e. timber, charcoal, caoutchouc, catechu, wood, oil, resin, natural varnish, bark, mahua flowers, mahua seeds, kuth and myrobalans; and***
- ***the following, when found in, or brought from, a forest, i.e.:***
  - ***trees and leaves, flowers and fruits and all other parts or produce not hereinbefore mentioned of trees,***
  - ***plants not being trees (including grass, creepers, reeds and moss) and all parts or produce of such plants;***
  - ***wild animals and skin, tusks, horns, bones, silk cocoons, honey and wax and all other parts or produce of animals; and***
  - ***peat, surface soil, rock and animals (including limestone, laterite, mineral oils and oil products of mines and quarries).***

The Act also defines "timber" as: *Timber includes trees when they have fallen or have been felled, and all wood whether cut up or fashioned or hollowed out for any purpose or not.*

The Act also defines a tree as: *Tree includes palms, bamboos, stumps, brush wood and canes.*

Thus, in the Indian Forest Act and other Acts related to forestry, there is no mention of the term "Minor Forest Produce". One thing, however, is clear from the Indian Forest Act, that timber includes bamboo and canes and therefore, at present, legally bamboo and canes cannot come under the category of MFPs. (*Contributed by:* Dr R.C. Sharma, P.C.C.F & Managing Director, MPMFP Federation, Bhopal, India.)

IRELAND

The protection and enrichment of forest biodiversity in Ireland's forests received a major boost with the announcement of a £Ir 1 million research and development project cofunded by the Council for Forest Research and Development (COFORD – www.coford.ie) and the Environmental Protection Agency (EPA).

As a result of a public call for research proposals on forest biodiversity in May 2000, a successful research consortium, comprising University College Cork, Trinity College Dublin and Coillte (the Irish Forestry Board), following international peer review, have just signed a contract with COFORD and the EPA for an in-depth five-year study. Interim results will be used to inform and revise policy and practice where appropriate.

The project will examine the impact of afforestation and forest operations on the biodiversity of flora and fauna on a range

of site types. It will also quantify the changes in biodiversity that occur throughout the forest cycle and, most important, it will outline best practice for the enrichment of biodiversity in the forests of Ireland. (*Source:* Forest Information Update [FIU], 19 February 2001.)

México

La Red mexicana de Plantas medicinales, aromáticas, condimenticias y cosméticas, está conformada por seis grupos de productores ecológicos de los estados de Tlaxcala (Cuaxomulco, Teacalco, Aztatla y Tepeyanco) y Puebla (Zapotitlán de Salinas y Yeolixtlahuaca), así como por técnicos, asesores y consultores con formación en ciencias biológicas, agronómicas y sociales.

La Red promueve la conservación ecológica, el manejo sostenible, la certificación botánica, el cultivo orgánico, el procesamiento, el control de calidad y el comercio justo de más de 150 especies de plantas nativas y extranjeras con alta demanda local, nacional e internacional. Estos recursos herbolarios tienen gran importancia en la medicina tradicional, fitoterapia, acupuntura, homeopatía, aromaterapia, cosmetología, microdosificación, medicina alopática, industria alimenticia y mercado orgánico.

La asociación civil Ecología y Desarrollo de Tlaxcala y Puebla, que coordina y administra el proyecto Mercados Verdes Herbolarios apoyado por el Fondo de América del Norte para la Cooperación Ambiental de 1999, proporciona capacitación técnica y promueve las relaciones comerciales con distribuidores y comercializadores del país y del extranjero.

El Jardín Botánico Universitario (JBU) de la Universidad Autónoma de Tlaxcala, proporciona asesoría permanente en cada etapa de la producción y certifica la autenticidad botánica de las especies así como la calidad de los productos herbolarios. Asimismo abastece de semillas, plántulas de vivero y de la información científica necesaria. El personal del JBU elabora las fichas monográficas básicas que contienen información botánica, ecológica, etnobotánica, fitoquímica, farmacológica y toxicológica para cada especie.

En 1996 la Red organizó el Primer Congreso Nacional de Plantas Medicinales de México donde participaron 250 médicos tradicionales, investigadores, estudiantes y promotores de salud. En el año 2001 se realizará la segunda edición incorporando a participantes de Iberoamérica.

Hace tres años fue establecido, por primera vez en México, un programa regional con 30 especies de plantas medicinales donde se tratan aspectos tales como: recolección, secado, manejo sustentable de poblaciones silvestres, cultivo orgánico, procesamiento artesanal y comercio justo.

Las especies se seleccionaron en base a criterios tales como: mayor demanda en el mercado nacional e internacional, amenazas de las poblaciones silvestres, alto valor cultural y comercial, alto potencial de uso en la medicina tradicional y occidental, etc. Ejemplos de estas especies son: *Valeriana edulis* ssp. *procera* (Valeriana), *Agastache mexicana* (Toronjil morado), *Jatropha dioica* (Sangre de drago), *Amphypteringium adstringens* (Cuachalalate), *Heterotheca inuloides* (Arnica), *Tagetes erecta* (Cempasuchil), *Castela tortuosa* (Chaparro amargoso), *Turnera diffusa* var. *aphrodisiaca* (Damiana de California), *Artemisia ludoviciana* ssp. *mexicana* (Estafiate), *Calea zacatechichi* (Hierba de la Puebla), *Achillea millefolium* (Milenrama), *Tagetes lucida* (Pericón), *Lippia graveolens* (Orégano mexicano), *Ruta chalepensis* (Ruda), *Aloysia triphylla* (Hierba Luisa, Te cedrón), *Salvia divinorum* (Hierba de la Pastora), etc.

Valeriana officinalis

Para más información, dirigirse a:
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Boletín de plantas medicinales y aromáticas

A partir de noviembre de 2000 ha empezado a circular por vía electrónica el *Boletín de plantas medicinales y aromáticas* de la Red mexicana de Plantas medicinales, aromáticas, condimenticias y cosméticas orgánicas, que tendrá una periodicidad bimestral.

Quien esté interesado en recibir gratuitamente el boletín, puede enviar un mensaje con sus datos completos a: suscripcionboletin@LatinMail.com [*Para mayor información, véase en Web Sites.*]

Nepal

NTFPs in Nepal

Developing benefits from community forestry management is a major strategy of the community forestry programme in Nepal. For the last two years, a NTFP network, coordinated by Asia Network for Small-scale Agricultural Bioresources (ANSAB), a national non-governmental organization (NGO) working on NTFP development, has been bringing together project staff, government officials, NGOs and others working in the NTFP sector.

The network members are developing specific collaborative activities, including: developing marketing analysis and development (MA&D) training materials for the Nepalese context and developing local market information systems. In addition, SNV (the Netherlands development organization) through its partner NGOs has been holding MA&D training and implementing field activities. (*Source: Asia Pacific Community Forestry Newsletter*, 13(1), February/March 2000.)

For more information on the NTFP network, please contact:
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[*Please see under Publications of Interest for more information on ANSAB.]*

Working with local people to develop timber and NTFPs

The Nepal-UK Community Forestry Project is currently operating in seven districts in the middle hills of Nepal. It has been supporting the government's community forestry programme over the last seven years. A number of project staff, together with other local stakeholders, have been actively supporting local communities through village-level forest users' groups to explore and enhance their forest management practices.

A paper entitled *Learning to learn: working with local people to develop timber and NTFP. Experience from Nepal*, by S.P. Dahal, H. Gibbon, G. Kafle and R. Subedi, was presented at the Workshop on Learning from Resource Users – a Paradigm Shift in Tropical Forestry, which took place in Vienna, Austria, in April 2000. The paper examines two themes: the distribution and availability of local knowledge and the manner in which "insiders" and "outsiders" need to interact in order to promote enhanced development outcomes. Pilot experience with three main NTFPs is discussed: *Girardinia diversifolia, Edgeworthia gardneri* and *Swertia chirayita*. (*Source: ETFRN News*, No. 30, Spring/Summer 2000.)

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PACIFIC ISLANDS

Non-timber forest products for Pacific Islands

Pre-release version of *Non-timber forest products for Pacific Islands: an introduction for producers*, by Kim Wilkinson and Craig Elevitch. March 2000.

From the abstract:

Non-timber forest products (NTFP) represent an important aspect of sustainable economic growth, conservation and forest management. This handbook provides an introduction to NTFPs and the basics of planning an NTFP enterprise. A resource section with books, periodicals, and Web links is included for further information. A species table of more than 70 traditional Pacific Island NTFPs and their uses is provided.

The publisher is:
Permanent Agriculture Resources. PO Box 428, HI 96725 USA.
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PAPUA NEW GUINEA

The Papua New Guinea Eco-Forestry Forum

The Papua New Guinea Eco-Forestry Forum produces *Iko-Forestri Nius*, the eco-forestry newsletter for Papua New Guinea. A recent special edition of the newsletter (September 2000) covers many aspects of non-timber forest products.

The Papua New Guinea Eco-Forestry Forum is now accessible on the Internet. This is a new initiative and constructive comments and suggestions on the future development of the site are welcome. The current plan is that the site will be updated monthly.

For more information, please contact: Mr Timothy King, Coordinator, Papua New Guinea Eco-Forestry Forum, PO Box 590, Kimbe, West New Britain Province, Papua New Guinea.
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PERÚ

El manual técnico «Manual de Ordenamiento Castañero» fue producido por el proyecto Conservando Castañales que, llevado a cabo en el Perú, aplica una fuerte componente participativa con los usuarios del bosque en la ejecución del ordenamiento (inventario y mapeo) de áreas de aprovechamiento de la castaña (*Bertholletia excelsa*).

El aprovechamiento de los frutos de la castaña es una importante actividad económica en el departamento de Madre de Dios, que cuenta con una superficie de más de un millón de hectáreas de bosque bajo este uso, y con un potencial de aprovechamiento futuro de hasta 2,5 millones de hectáreas. Los castañales son áreas de aprovechamiento tradicionales, que en muchos casos han sido aprovechados a lo largo de varias décadas. Sin embargo,

sólo en los últimos años se vienen ejecutando el ordenamiento de dichas áreas para que entren a ser parte del catastro nacional de uso forestal.

El manual, que está dirigido a técnicos forestales, detalla la metodología para la ejecución del ordenamiento, que se articula en tres sectores:

- *trabajo en el campo:* organización del personal, uso de materiales y equipos, técnicas de levantamiento de árboles y caminos de extracción, organización de libreta de campo;
- *trabajo en gabinete:* uso de sistemas SIG para la elaboración de mapas, organización de datos y elaboración de expedientes;
- *proceso participativo:* proceso de resolución de conflictos.

Se espera que esta experiencia positiva pueda servir como modelo metodológico para futuros trabajos de ordenamiento de áreas castañeras, así como de otros recursos no madereros y madereros de los bosques amazónicos.

Manual de ordenamiento castañero

Para más información, dirigirse a: Vanessa Sequeira, Proyecto Conservando Castañales, Asociación para la Conservación de la Cuenca Amazónica (ACCA), Jr. Cuzco, 499, Puerto Maldonado, Perú.
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(Se pueden solicitar copias gratuitas de la publicación.)

PHILIPPINES

Recognition of ancestral domain claims on Palawan Island: is there a future?

Development on Palawan island (the Philippines' last frontier) is being fostered in a way that repeats the historical injustices suffered by the indigenous people of the archipelago, in the name of progress and the conservation of biodiversity. There is a divergence of interests between the desires and needs of the native communities and the government and environmental objectives of conserving natural habitats. A review of recently enacted environmental laws in the Philippines indicates that the zoning of protected areas based on biodiversity criteria is curtailing local subsistence practices while increasing the efficacy of government power and control over them. In addition, the new law for the recognition of ancestral domain claims needs to be improved in order to reflect indigenous notions and priorities.

Recognition of ancestral domain claims on Palawan Island, the Philippines: is there a future? by Dario Novellino, is published in *Land Reform* 2000/1, the bulletin of FAO's Rural Development Division.

Recent publications on the same issue include: D. Novellino. 2000. *Forest conservation in Palawan.* Philippine Studies, Vol. 48, third quarter 2000.

For more information, please contact: Dario Novellino, Department of Anthropology, University of Kent, Canterbury, UK.
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Indigenous peoples and protected areas in South and Southeast Asia

Another paper by the same author analyses present options for forest management and conservation by both governmental and non-governmental organizations, and their impact on the Batak communities of Palawan Island (the Philippines). It is argued that such options share the common assumption that "ecological sustainability" and the protection of biodiversity can be attained through restricted/controlled use and by introducing stable forms of agriculture to indigenous upland communities. On the other hand, the paper suggests that even an innovative law such as the Indigenous Peoples Rights Act (IPRA) of 1997 needs to be improved, in order to reflect indigenous notions and practices. While the IPRA law is being "killed" by the lack of political will, the Department of Environment and Natural Resources (DENR) is resorting to some acronym juggling and socially acceptable soundings (e.g. Communal Forest Management Agreements) to retain state control over ancestral domains. Batak perceptions of the environment, their forest management practices and the people's involvement in the trade of non-timber forest products is discussed. (D. Novellino. 1999. The ominous switch: from indigenous forest management to conservation-the case of the batak on Palawan Island, Philippines. *In* M. Colchester and C. Erni, eds. *From principles to practices: indigenous peoples and protected areas in south and southeast Asia.* IWGIA document No. 97, p. 250-295. Copenhagen, Denmark, IWGIA & FPP.)

To order a copy of the volume, contact: International Work Group for Indigenous Affairs (IWGIA); e-mail: iwgia@iwgia.org; *or* Forest Peoples Programme (FPP); e-mail: ffppwrm@gn.apc.org

For more information, please contact: Dario Novellino, Department of Anthropology, University of Kent, Canterbury, UK.
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Wetlands and indigenous rights in Palawan

A preliminary investigation of the mangrove and coastal ecosystems and of the threats posed to them by the new road took place in Palawan (the Philippines) from 16 July to

COUNTRY COMPASS

10 August 1999. The initiative was planned and coordinated by Bangsa Palawan-Philippines – Indigenous Alliance for Equity and Wellbeing together with the United Kingdom-based Forest Peoples Programme. The report has several related objectives. At the most basic level, it aims to provide an orientation on the current status and utilization of mangrove and coral reefs in the southern municipality of Rizal in Palawan, and to identify the root causes of environmental destruction. Special attention is also given to local ways of coping with the progressive decline of the resource base, and to the priorities of indigenous peoples. It is hoped that the understanding of such priorities will lead to a dialogue between different actors (conservationists, developers, migrants and indigenous communities).

Wetlands and indigenous rights in Palawan. A preliminary account of the status of mangroves, coral reefs, road construction and indigenous rights in Rizal municipality, southern Palawan Island (Philippines), by Dario Novellino. A report of Bangsa Palawan-Philippines (BPP) and Forest Peoples Programme (FPP), May 2000.

For an electronic copy of the report, please contact:
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PORTUGAL

Portugal is at the centre of a row threatening to break up the timeless marriage between wine and the one product in which the country leads the world – cork.

Portuguese producers of the unique bark of the cork oak, which is flexible yet impervious to water and air, are worried that many supermarket chains in wine-importing countries are moving towards plastic seals. At stake, they say, is not only a billion-dollar industry but also the mainstay of many farmers in Portugal.

For as long as the word "cork" has been synonymous with sealing wine bottles, it has also been associated with the nasty woody taste of ruined wine (so-called "corked" wine). Scientists have identified 2-4-6 trichloroanisole, or TCA, a powerful fungus, one glassful of which could spoil a country's whole wine harvest, as being responsible for tainting wine.

"If plastic takes off, the cork industry is finished because cork stoppers are the main part of the industry" said Richard Mayson, an author of books on Portuguese wines.

An end to the cork industry would be a severe blow to Portugal, which plants 33 percent of the world's cork oaks, and has a 75 percent share of the world market in cork products.

Growers say a drop of just 10-15 percent in cork prices would take the profit out of a crop that would be almost impossible to revive.

It takes a cork oak 40 years to produce quality bark, which thereafter can be stripped only every nine years.

However, since the advent of plastic stoppers, the cork industry has made a determined effort to raise standards. The cork industry adopted a Europe-wide informal code of practice in 1996, based on new research that showed how to stamp out TCA. "Corking" can be prevented by eliminating the lower-level bark that harbours TCA on cork trees, by refraining from laying freshly cut bark on the ground and by boiling it.

The road to survival for the cork industry depends, say producers, on improving quality. (*Source:* Extracted from an article in *China Daily*, 28 August 2000.)

RUSSIAN FEDERATION

From collectivism to cooperation

NTFP use in the Russian Far East has a long history. The region's indigenous peoples have used non-timber forest products for centuries. Under the former USSR, state-harvesting organizations collected dozens of NTFP species in the Far East republics. Up to 1 200 tonnes of birch juice were produced annually in Khabarovskii Krai alone. Japan imported as much as 2 000 tonnes of salted fiddlehead ferns from the region. Rigid price controls, large consumer demand and an almost complete lack of competition instigated the government plan for the harvesting, processing and sale of NTFPs.

Since the collapse of the USSR, the breakup of the centrally planned system and the transition to a market economy, problems in the pharmaceutical industry, as well as outdated processing and packaging techniques, have all combined to undermine severely the NTFP industry in the Russian Far East. Many rural collecting stations shut down because they were ill prepared to operate in a market economy. Increasing unemployment is a significant factor contributing to the social and environmental problems. Providing new employment opportunities for rural people is a key part of the region's conservation and environmental protection strategies for Khabarovskii Krai. One solution is to create both temporary and permanent jobs through better use of NTFP resources.

The Russian Far East Association for the Use of NTFPs was formed in 1996 to look for ways to coordinate the activities of the region's NTFP producers and suppliers. Association membership has increased from seven members, representing two regions, in 1996, to 32

members, representing four regions, in March 2000. Association members have successfully introduced new technologies and scientifically based formulas for processing NTFPs, have expanded their market share for processed products both within the Russian Federation and abroad, and have found ways to improve the integratation of local people into the growing NTFP industry.

Association members focus mainly on harvesting and processing food items: honey, nature drinks, berry juice and syrups, medicinal teas, partially processed salted fiddlehead ferns and mushrooms. Ready-to-use NTFP products, such as berry jams, confectionery, flash frozen berries and shelled Korean pine nuts are now beginning to find their way on to regional markets. Future market niches are locally produced NTFP-based medicinal products, biologically active supplements and skin care products.

As a growing sector of the new market economy in the Russian Federation, the NTFP industry can be an important voice in forest conservation efforts. However, despite ongoing efforts to inventory NTFPs, information is still lacking on NTFP resources, and monitoring and resource assessment activities need to be improved to manage NTFPs more effectively.

A key element in the future success of the NTFP industry in the Russian Far East is a programme to equip firms with new equipment and introduce improved processing techniques. Training is needed for personnel running equipment and operating new facilities. A combination of these factors will help stabilize production and make available products that can effectively compete on today's market.

Improved equipment and personnel training require investments. Renewed investments into the region's NTFP industry will begin when investors feel the economic and political atmosphere is more secure. One issue faced by the NTFP industry is inadequate government support at the local, regional and federal level. Official terminology continues to refer to these products as "secondary forest products" despite their importance in any sustainable forest and forest industry management programme. Legal regulation of NTFPs is equally important in establishing a sound investment atmosphere, but the industry currently lacks federal and regional legislation. (*Source: Taiga News*, No. 31, Spring 2000.)

NTFP INDUSTRY REQUIREMENTS (from a 1999 survey by the Russian Far East Association for the Use of NTFPs)

1. **Inventory NTFP resources and set scientifically based harvest limits with control and monitoring structures.**
2. **Improve harvest methods and local primary processing.**
3. **Expand secondary processing and finished product technologies and improve packaging.**
4. **Reach international-level agreement on standardization and certification of raw and processed NTFP products.**
5. **Promote NTFP sales through a network of commercial outlets.**
6. **Investigate new markets for NTFPs.**
7. **Improve the skills of everyone working in the NTFP industry.**
8. **Carry out and coordinate market research for NTFP firms.**

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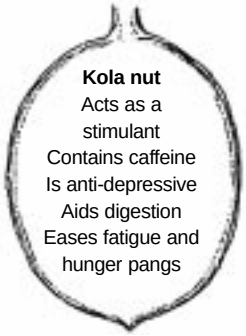
SENEGAL

Senegal has been hit by a growing scarcity of the bitter-tasting kola nut. The nuts, which contain caffeine, are mainly imported from other West African countries such as Nigeria, Guinea and Côte d'Ivoire. However, in September 2000, it became virtually impossible to find any in the markets. Imports have plummeted, as a result of bad harvests in the producer countries.



According to kola nut wholesalers, a 50-kg sack of kola nuts now costs about CFAF 90 000 (US$120), compared with the pre-scarcity price of CFAF 25 000.

Apart from its economic consequences, the scarcity of kola nuts has also resulted in serious social problems. The nut is used in virtually every aspect of social life in Senegal.

Apart from acting as a sexual stimulant, the nut also contains physical stimulants and many men chew it all day long to maintain their strength. The nut is also an indispensable requirement in marriage ceremonies. In fact, in most regions of Senegal, the bridegroom must offer at least 10 kg of kola nuts to the family of his would-be wife for the marriage to be sanctioned by them.

In addition, kola nuts are essential for mystical rituals performed by religious healers and soothsayers known as marabout. It is not surprising that many people believe the scarcity of the nuts is threatening these rituals and they are fervently hoping for a quick end to the crisis. (*Source:* BBC News, 18 September 2000: http://news.bbc.co.uk/hi/english/world/africa/newsid_930000/930661.stm)

COUNTRY COMPASS

SOUTH AFRICA

A book on plants in South Africa has recently been published:
People's plants. A guide to useful plants of southern Africa. 2000. By Gericke N. van Wyk ben Eric., Pretoria, Briza Publications (i7131). 351 pp.

This book is divided into three main parts:

1. Food and Drinks covers cereals, seeds and nuts, fruits and berries, vegetables, roots, bulbs and tubers, and beverages.
2. Health and Beauty has chapters on general medicines, tonic plants, mind and mood plants, women's health, wounds, burns and skin conditions, dental care, perfumes and repellents, and soaps and cosmetics.
3. Skills and Crafts deals with hunting and fishing, dyes and tans, utility timbers, fire making and fuelwood, basketry, weaving and ropes, and thatching, mats and brooms.

Species and their uses are described; there are many excellent photographs and a comprehensive index. (*Source:* EcoPort gatekeeper abstract.)

For more information, please contact:
BRIZA Publications, PO Box 56569,
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UNITED REPUBLIC OF TANZANIA

Gender and non-wood forest products

In the United Republic of Tanzania, it is the women who are experts on the collection, processing and preservation of non-wood forest products for the household foods. Peasant women know the nutritional needs of their families as well as the nutritive content of the wild foods they collect from the bush since they are responsible for sustaining the livelihood of the family.

However, the roles of women and men with regard to the collection of medicinal plants do not seem to be specialized. Traditional healers, men and women, frequently carry out the collection themselves in the forests partly to maintain secrecy of knowledge of relevant species.

It has further been established that NWFPs with a direct contribution to household food security are often collected by women while those related to income generation are collected by men. For example, women and children purposely hunt for mushrooms and consequently the best mushroom specialists in the village are women.

Commercialization of forest products also has a gender dimension. While most of the beekeepers in Tanzania are men, the majority of basket and mat makers are women. Moreover, it has been observed that most of the wood carvers and hunters are men.

However, the local knowledge of both men and women concerning NWFPs and wild foods, in particular, for household food security is declining, as a result of formal schooling, intermarriages and emigration.

Gender-based local knowledge is a central issue in the selection, collection and preparation of wild foods. Women are often very knowledgeable about direct food consumption activities while men are more knowledgeable and responsible concerning income-generating NWFPs. This gender-based local knowledge needs to be studied in detail and documented so that it is not lost in the wake of modernization.

Governments, non-governmental organizations and women should be the target for programmes in household food security.

PROJECT GENDER, BIODIVERSITY AND LOCAL KNOWLEDGE SYSTEMS (LINKS) TO STRENGTHEN AGRICULTURAL AND RURAL DEVELOPMENT (GCP/RAF/338/NOR)

The project's objectives are:

- **To increase understanding among rural people, development workers and policy-makers about the value of men's and women's distinct knowledge and skill related to the management of agrobiodiversity for food security.**
- **To strengthen the capacity of key partner organizations participating in the project to use gender analysis, participatory research and communications for development methods to work with rural communities to document and share information about local knowledge systems with communities, NGOs, research institutes and policy-makers.**
- **To overcome the policy, legislative, socio-economic and cultural barriers to the local management, conservation and sustainable use of agrobiodiversity.**

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The Links project has already started various activities to improve household food security. (*Source: Potentials of non-wood forest products in household food security in Tanzania: the role of gender-based local knowledge*, by G.C. Kajembe, M.I. Mwenduwa, J.S. Mgoo and H. Ramadhani. July 2000.)

For more information, please contact the authors:
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UNITED STATES OF AMERICA

Non-timber forest products (temperate)

A recent edition of *The Overstory* (No. 71) focused on non-timber crops of forests in the continental United States. Although the focus is primarily temperate, NTFP producers will be interested in the management techniques described for a wide variety of commercial crops. Forest farmed products include mushrooms, botanicals of medicinal or culinary value, fruits and nuts, craft materials, maple and other syrups, and baled pine straw. Raising honey bees (apiculture) is also an option. (*Source: The Overstory*, No. 71.)

Managing the "other" forest products

With is headquarters in Portland, Oregon, the Pacific Northwest Research Station is one of seven United States Department of Agriculture (USDA) Forest Service Research sites. This station's research is organized into seven programmes conducted at ten locations: nine laboratories in Alaska, Washington and Oregon, and a Wood Utilization Center in Sitka, Alaska. Forestry research sites were established to evaluate and disseminate information and technology to improve management and use of natural resources.

The Pacific Northwest Research Station has indicated that an emerging area of concern is special forest products, such as florals, medicinals, pharmaceuticals, greenery and edible harvests. There is an economic as well as a lifestyle component to these products. Commercial, recreational and subsistence harvesting of such products as chanterelle mushrooms, brings working people to the forest, sometimes in cultural conflict with each other, or with forest regulations.

On the Olympic Peninsula in Washington, chanterelle harvest has become a dynamic example of adaptive ecosystem management, as agencies and citizens grapple with regulations, realities and cultural differences among groups of pickers. Station research has revealed more common ground among and between chanterelle pickers and landowners than was previously recognized. Recognition and understanding of a common interest in sustaining the resource is helping alleviate tensions.

Knowledge of communities' and citizens' concerns has helped resource managers, country commissioners, legislators and educators develop partnerships for tackling problems facing both agencies and communities. For example, data are now available to describe the impacts on displaced timber workers: loss of occupational identity, distrust of corporate and agency managers and lower wages. The data, however, also reveal support on the part of timber workers for better conservation of timber resources, and a demonstrated capacity to cope with changes. (*Source: Closer to the truth*, a retrospective of the Pacific Northwest Research Station, 1925-2000.)

For more information, please contact: Pacific Northwest Research Station, PO Box 3890, Portland, OR 97208, USA. www.fs.fed.us/pnw

Wild Harvest Sector

"Wild Harvest Sector: entrepreneurships in the sustainable production of forest-grown medicinal plants and other non-timber forest products" is a partnership among Total Action Against Poverty, Roanoke, Virginia; Virginia Polytechnic Institute and State University Department of Wood Science and Forest Products, Blacksburg, Virginia; and Craig County Rural Partnership, New Castle, Virginia. The programme is also collaborating with Virginia Cooperative Extension, and West Virginia Cooperative Extension. The programme's first year is funded through the Appalachian Regional Commission.

Wild Harvest Sector will provide training to residents in southwestern Virginia as well as technical assistance in finding and developing propagation sites for forest-grown medicinal plants and other non-timber forest products.

The primary focus is to help ten participants become first-time producers of NTFPs. An Internet-based instruction programme, as well as a small paper guide on NTFP production entitled Guide to Special Forest Products, will be prepared. Emphasis will also be on helping those who do not own forested land to obtain access to forested growing sites for NTFPs on land owned by their neighbours.

Workshops planned for 2001 cover:

- "virtually wild" ginseng growing;
- producing forest-grown plants for overseas and domestic Asian markets;
- propagating native forest plants for market;
- writing a business plan for a forest products enterprise; and
- marketing and producing shitake mushrooms.

Wild Harvest Sector is dedicated to the preservation of all plant species grown for the market. Therefore, the programme will encourage participants to "grow their own" rather than deplete existing plant communities. NTFPs can generate significant economic activity at the local community level in the Appalachian region of North America without destroying or degrading the area's abundant mature hardwood forest ecosystems, therefore playing an important role in the development of sustainable local economies in the Appalachias.

For more information, please contact: Ms Ann Rogers, Total Action Against Poverty (TAP), PO Box 2868, Roanoke, VA 24001, USA.
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VIET NAM

Viet Nam to increase cinnamon crops to meet export demands

Viet Nam is to expand its cinnamon-growing areas from 16 000 to 50 000 ha in an effort to earn US$15 million from cinnamon-bark exports by the year 2005, according to the Ministry of Agriculture and Rural Development. Between 3 000 and 5 000 ha of the planned cinnamon areas will be exploited each year to ensure raw material for both export and essential oil production. Viet Nam also intends to build two more cinnamon oil-processing plants – each with an annual capacity of between 50 and 100 tonnes in northern Yen Bai province and central Quang Nam province.

Cinnamon is a forest product that has become Viet Nam's top export and each year the country exports 3 000 tonnes of cinnamon bark. The ministry reports that cinnamon trees are largely grown in Yen Bai, Thanh Hoa, Quang Nam and Quang Ngai provinces because they have a higher economic value than other plants grown on hilly land and help prevent soil erosion. Growers can earn between US$2 000 and $3 000 from 700 to 1 000 kg of cinnamon bark per hectare. Cinnamon trees are usually planted with other food crops for higher profits, the ministry stressed.

Viet Nam's cinnamon has long been known for its quality and flavour because it is rich in essential oil. The bark has a cinamic acid content of about 75 percent, while its leaf has a content of more than 50 percent. Both bark and leaf are used to produce essential oil for the food and pharmaceutical industries. About 0.8 percent of cinnamon's essential oil is contained in its leaf and 2.2 percent in its bark.

Cinnamomum zeylanicum

Viet Nam's cinnamon products were previously exported to Eastern Europe and the Nera East and are now being sold in Japan, the Republic of Korea, Taiwan Province of China, China, Hong Kong Special Administrative Region and some Western countries at US$2 000 per tonne.

Previously, cinnamon trees were grown in regions where soil conditions were not particularly suitable and growers did not have adequate experience and technology. Both cinnamon areas and output fell as a result.

The Ministry of Agriculture and Rural Development is now formulating policies and measures to encourage both enterprises and farmers to grow the trees. Incentives include forest-land allocation, soft long-term loans and the provision of expertise. (*Source:* AsiaPulse via COMTEX, Hanoi, 29 January 2001.)

ZIMBABWE

Southern African forests – the poor people's safety net

Without access to their communal forests, many of Zimbabwe's poor might have perished a long time ago. Two surveys conducted in a typical rural county (the Shindi ward) in the mid-1990s found that on average each family derived over 35 percent of their income from forest products. In a country where one rural person out of every two consumes less than US$150 worth of products a year, forest-related income can literally mean the difference between life and death. Most people think that southern Africa's rural households make their living as farmers. But, in reality, many depend as much on their surrounding forests as they do on their crops.

Empirical regularities in the poverty-environment relationship of African rural households, by William Cavendish, demonstrates that forest products provide an essential component of rural African livelihoods.

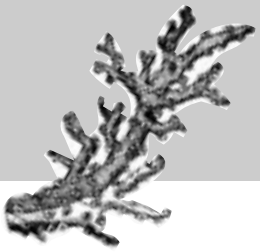
Cavendish's study found that Zimbabwe's rural families use hundreds of wild plants and animals for food, medicine, fuelwood, building materials, furniture, baskets, livestock fodder, and other uses. Termite mounds and leaf litter provide a major source of fertilizer. Livestock fodder, wild foods and fuelwood contribute most to household incomes. However, around three quarters of all income comes from a wide range of other natural products. None of these gifts of nature will make the families rich. But they definitely help them survive.

The poorest households depend the most on forest products. Even so, in absolute terms the richer households consume more forest products. Men do most of the hunting and wood-related activities. Women sell wild vegetables, fruits and wine. They also collect fuelwood and thatching grass and make pottery out of local materials. Both groups sell mats and medicinal plants and pan for gold. Young children rely heavily on wild foods such as mice, small birds, insects and fruits.

What will happen if these natural resources disappear? Where will these families turn to if someone privatizes their woodlands? (*Source:* POLEX list serve, 1 September 2000.)

To obtain a free electronic version of the paper and/or send comments about this message, you can write to William Cavendish at: william_cavendish@new.labour.org.uk ●

E C O N O O K



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 which are currently offered in nine countries. All programmes are operated by partner organizations that have shown a strong commitment to conservation and education. The organization is committed to the fair return of the benefits from the courses to the local partners to assist in 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, geology and much more. Past participants have come from across the United States, Canada, Latin America, Europe, Australia and the Far East.

Customized programmes are available upon request.

For more information, please contact: Mike Nolan, Director, Rainforest and Reef, 9 Prospect NE Suite No. 8, Grand Rapids, Michigan 49503, USA. Tel./Fax: +1 616 776 5928; e-mail: rainforest@mail.org *or* mnolan01@sprynet.com; www.rainforestandreef.org

HUNTING FOR TONIGHT'S DINNER

In more than 61 countries worldwide, rural families obtain at least 20 percent of their animal protein from wild game and fish. In West Africa, fully one quarter of the population's protein comes from bushmeat. Each year, local people in Sarawak, Malaysia eat US$75 million worth of such meat. In the Amazon Basin as a whole, consumption exceeds US$175 million. The total catch from hunting in the Congo Basin is more than

Malaysian Timber Bulletin

one million tonnes of wild meat annually. People also catch live animals to sell, and hunt them to protect their crops from pests, as part of cultural rituals, and for other reasons.

Hunting of wildlife in tropical forests: implications for biodiversity and forest peoples, by Elizabeth Bennett and John Robinson from the Wildlife Conservation Society, provides ample evidence that much of this hunting is unsustainable. Moderately or heavily hunted forests have a much lower mammal density. Vulnerable species often disappear entirely from these areas. This means fewer cute and cuddly animals, less protein and income for rural families, and greater hunger. Furthermore, changes in animal populations can alter other components of the ecosystem by affecting seed survival and dispersal, as well as the predator to prey ratios.

Hunters go after a wide range of mammals, birds, and reptiles, although typically a major proportion of bushmeat comes from large hoofed animals and monkeys. Animals that travel in packs, move slowly, make loud noises, or do not reproduce frequently are especially vulnerable. Old-growth tropical rain forests generally produce less bushmeat per hectare than savannahs, grasslands and secondary forest, so hunting there often takes a much heavier toll.

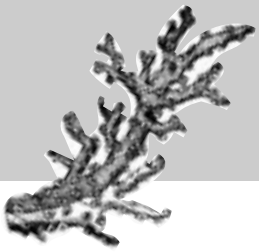
The hunting problem has worsened as populations in forested areas have increased and become more sedentary. Migrants who lack traditional norms for regulating hunting have moved in. Widespread encroachment of logging crews into the forest has proved to be especially problematic. Better access to the forest and improved hunting technologies, such as the introduction of firearms, wire snares, flashlights, dogs, motorbikes and outboard motors, have helped deplete game species. In many African and Asian countries, people actually consume more wild meat as their incomes rise, since they prefer it to other foods. In contrast, when given the option, Latin Americans generally prefer to purchase beef or chicken.

The authors recognize that few attempts to regulate hunting have proved effective in the tropics. They suggest greater efforts to promote community wildlife management, increased monitoring of logging companies and continued support for protected areas.

Hunting of wildlife in tropical forests: implications for biodiversity and forest peoples by E.L. Bennett and J.G. Robinson (2000) is published as Biodiversity Series-Impact Studies No. 76 by the World Bank, Washington, DC.

The paper can be downloaded in pdf format (www.worldbank.org/biodiversity). An electronic Word file with the document in English, French or Spanish is available from Sharon Esumei (sesumei@worldbank.org).

Comments can be sent to: Elizabeth Bennett (e-mail: lizwcs@pd.jaring.my). (*Source:* POLEX mailing list, 2 February 2001.)



PRO-POOR TOURISM

A recent paper, *Pro-poor tourism: putting poverty at the heart of the tourism agenda*, by Caroline Ashley, Charlotte Boyd and Harold Goodwin, examines how tourism affects the livelihoods of the poor and how positive impacts can be enhanced. In doing so, it assesses the relevance of tourism to the poverty agenda, and the factors that encourage or constrain economic participation of the poor in the industry. In conclusion, it outlines strategies for promoting pro-poor tourism (PPT).

Policy conclusions

- Tourism development has not, to date, incorporated poverty elimination objectives. It remains driven by economic, environmental and/or cultural perspectives at the national and international levels.
- Given the massive impact that tourism has on many of the world's poor, how and how far PPT can be promoted needs to become a central issue.
- The poverty impacts of tourism include a wide range of impacts on the livelihoods of the poor – not just jobs or incomes – with differential costs and benefits.
- Participation of the poor in tourism, and the benefits they gain, depends on a range of critical factors, including the type of tourism, planning regulations, land tenure, market context, and access to capital

THE MILLENNIUM TREE LINE

Both time and space are measured from the prime meridian of the world, also known as the Greenwich meridian, 0 longitude. The Millennium Tree Line, which is supported by the University of Greenwich, is a project aiming to create a line of trees following the Greenwich meridian line.

The world entered the third millennium at midnight on the Greenwich meridian on 31 December 2000. To mark this historic event a line of trees is being established along the meridian in the United Kingdom. It is hoped that the line will be continued through France, Spain and Africa until it reaches the Atlantic in the Gulf of Guinea.

The many trees already growing on the line will be carefully recorded and, wherever possible, conserved for the remainder of their natural lives.

Different tree species will be used for planting, although generally those native to the area through which the line passes will be preferred. An important aspect of the project will be to allow the trees to age naturally, or to extend their lives by pollarding, so that many will be venerable giants at the arrival of the fourth millennium and beyond.

Once the line is established, it is expected that successive generations will keep it going and that any trees that die, or are blown down, will be replaced. As the trees mature the line will be visible from the air and even from space.

As well as being of interest in its own right, the Millennium Tree Line will have considerable conservation value as a living laboratory of the life cycle of trees. It is hoped that environmental centres can be established at suitable points along the line and it is planned to designate areas of woodland on either side of the line as reserves where the cycle of nature is allowed to run its full course.

At the heart of the project will be a computer database designed by the University of Greenwich. This will record existing trees and the new ones that are planted so that full details of the Millennium Tree Line, and individuals and organizations associated with it, are available to people in the future.

Organizations and institutions are being offered the opportunity to sponsor tree sites on the Greenwich meridian. The money raised will enable the project to develop and any surplus will go to the charitable causes nominated in the constitution of the Millennium Tree Line.

A similar initiative is being undertaken in France where there are plans for "La Méridienne verte" (the Green Meridian): a line of trees 1 200 km long. Eight French regions, 20 departments and 336 communes will be involved. A hiking route will follow the line of the trees and help draw attention to the tourist attractions in the areas covered.

For more information, please contact:
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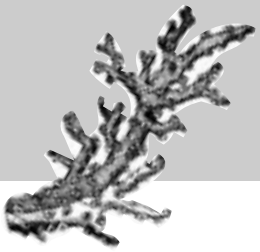
www.gre.ac.uk/directory/mtl/main.html



and training. Many of these can be influenced by changes in policy or external support.
- There is considerable unexploited scope for adapting tourism interventions to enhance livelihood benefits to the poor from tourism.
- PPT strategies must be commercially realistic. Although the private sector cannot be expected to prioritize poverty objectives, it must be included in the process of developing PPT.

(*Source:* ODI. *Natural Resource Perspectives*, No. 51, March 2000.)

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THINKSHRIMP! – SOCIAL AND ECOLOGICAL IMPACTS OF INDUSTRIAL SHRIMP AQUACULTURE ALONG TROPICAL COASTS

Local people in India and Ecuador are losing their land and their mangrove forests because they are cut down for huge artificial shrimp ponds – shrimp aquaculture. With these forests the main resource of income for the local population is disappearing: the amount of wild fish, shrimp, crab and shells, which depend on intact mangrove forests, has been decreasing over the past few years. Not only is the food security for the people living on these coasts in danger but also the drinking-water supply, as a result of the salinization of the groundwater, as well as of the fertile agricultural land. A further threat is the contamination of the sea, rivers, channels and land areas in the neighbourhood of shrimp farms, because of the input of chemicals, pesticides and antibiotics.

In order to provide the general public (as well as shrimp importers in Germany and Austria) with information on these problems, the German non-governmental organizations (NGOs) EarthLink, Food First information and action network (FIAN) and Community of action fair world (ASW) invited the activists Dr Jacob Raj, from the Indian NGO PREPARE, and Lider Góngora Farias, from the Ecuadorian NGO FUNDECOL, to the information tour "ThinkShrimp!" to ten German and Austrian towns from 11 to 26 September 2000.

For more information, please contact:
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www.thinkshrimp.de ●

VALUE OF NATIONAL FORESTS

National forests are far more valuable for their recreation, wildlife and water quality than for timber, minerals and cattle grazing, according to a recent report by the Sierra Club. The forests are worth an estimated US$234 billion and generate 2.9 million jobs from recreation, fish and wildlife, water quality and wild areas, according to an economic consulting firm that prepared the report for the Sierra Club, which opposes commercial logging in national forests. By comparison, the nation's 80 million hectares of federal forests generate US$23 billion and 407 000 jobs from timber, mining, grazing and other uses, said the firm, ECONorthwest. (*Source:* press release, Associated Press.)

Everybody needs beauty as well as bread, places to play in and pray in, where Nature may heal and cheer and give strength to body and soul alike.

John Muir, 1912

(Quoted in *Closer to the truth*, a retrospective of the Pacific Northwest Research Station, 1925-2000.)

FAO

FOREST PRODUCTS DIVISION

NWFP-Digest-L

In April 2000, the first issue of the NWFP-Digest-L was produced. The digest is compiled on a regular basis (bimonthly on average) by Tina Etherington and Laura Russo of the Non-Wood Forest Products programme. The digest was originally created and maintained by Mr Eric Jones of the Institute for Culture and Ecology (IFCAE). FAO intends to continue IFCAE's goal to link NWFP interests around the world, share information, foster discussion pertaining to NWFPs, promote regionally oriented e-mail lists and Web sites, and to complement existing NWFP awareness networks. Diverse views and materials relevant to NWFPs are encouraged.

1. To join the list, please send an e-mail to: mailserv@mailserv.fao.org, with the message: subscribe NWFP-Digest-L
2. To make a contribution once on the list, please send an e-mail to the following address: NWFP-Digest-L@mailserv.fao.org
3. To unsubscribe, please send an e-mail to: mailserv@mailserv.fao.org, with the message: unsubscribe NWFP-Digest-L
4. For technical help or questions, contact: NWFP-Digest-L@mailserv.fao.org

Web site

The home page of the NWFP Programme of FAO's Forestry Department has been improved and, in addition to English, French and Spanish, is now also available in Arabic – the first Arabic Web site in the Forestry Department. It is available only through Internet Explorer or Sindbad at the following address: www.fao.org/forestry/fop/fopw/nwfp/nwfp-a.stm

In addition, there is now a special search feature as well as links to:

- Country Profiles – FAO's Forestry Department Web site contains detailed information in its Country Profile pages on various aspects of NWFPs in specific countries: www.fao.org/forestry/ and then click on Country; and
- past issues of the NWFP -Digest-L (it is now also possible to subscribe on-line): www.fao.org/forestry/fop/fopw/nwfp/digest/digest-e.stm

Any suggestions for improving the home page will be appreciated.

Seminar on Harvesting of Non-Wood Forest Products

A joint FAO/ECE/ILO seminar on Harvesting of Non-Wood Forest Products took place in Izmir, Turkey, from 2 to 8 October 2000.

The seminar was organized under the auspices of the Joint FAO/ECE/ILO Committee on Forest Technology, Management and Training with the participation of the International Union of Forestry Research Organizations and in cooperation with the Turkish Government. Eighty-five participants from the following countries attended: Albania, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, the Czech Republic, Finland, Germany, Greece, India, Italy, Kazakhstan, Kyrgyzstan, Lebanon, Morocco, Nepal, the Netherlands, Nigeria, the Philippines, Poland, the Republic of Moldova, Romania, the Russian Federation, South Africa, Spain, Thailand, Tunisia, Turkey, Ukraine, the United Kingdom and Uzbekistan. Several international organizations including the World Bank were represented and Mr Paul Vantomme, Forestry Officer (NWFP) also attended.

The seminar offered the opportunity to exchange experience and share state-of-the-art knowledge on recent developments in forest harvesting, trade and marketing practices for NWFPs, as well as their potential importance for socio-economic development.

The seminar papers and plenary discussions addressed the following topics:

- Policies to promote sustainable forest operations and utilization of non-wood forest products.
- Inventory methods and mapping of non-wood forest products.
- Involvement of the private sector and non-governmental organizations in the harvesting, processing and marketing of non-wood forest products enhancing employment and income generation of local populations.
- Planning and management of sustainable forest harvesting operations for non-wood forest products. Establishment of standards for appropriate harvesting systems and techniques, reducing environmental impacts and wastes.
- Extension, training and education to improve forest harvesting practices, productivity and availability of non-wood forest products.
- Organizations and institutions dealing with the collection of statistical data and valuation of non-wood forest products, as well as their promotion for export markets.

The seminar was very successful. Thirty-five papers and five posters were presented in plenary and generated lively discussions among the participants. The proceedings of the seminar are being prepared by the Forest Products Division. The major conclusions were the need to provide more information, training and networking on the inventory, harvesting, management and valorization of NWFPs. In this respect, participants recommended follow-up seminars

focused on training in specific NWFP-related topics.

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FORESTRY POLICY AND PLANNING DIVISION

Community-based enterprise development and the Community Forestry Unit

The Community Forestry Unit (CFU) is shifting from the development and dissemination of materials to a strategy that focuses on achieving impact on people's livelihoods. The new strategy focuses on training, partnership building, the development of networks to discuss feedback on materials and follow-up to assess impact.

In the case of community-based enterprise eevelopment, this strategy was already reflected by the extensive field-testing of the market analysis and development (MA&D) methodology in Asia before publication of the MA&D manual in July 2000.

Workshop on community-based enterprise development

In October 2000, the CFU organized a Workshop on Community-based Tree and Forest Enterprise Development. This workshop was the first activity, following the publication of the MA&D manual, of a process to implement and validate the methodology in several countries in English-speaking Africa. It is anticipated that local, and perhaps new global, adaptations of the materials will result from this process.

Representatives from eight projects, mainly from Africa, were selected and invited to participate in the workshop, based on the following criteria:

- partners needed to have experience with small enterprise development, preferably related to community-based tree and forest product enterprises or services;
- partners needed to be able to provide the required time and costs for local implementation/validation of the MA&D approach;
- participants needed to have good field and facilitation skills;
- participants needed to have a knowledge of project planning; and
- participants needed to have a high proficiency in spoken and written English.

The main aim of the workshop was to familiarize the selected partners with the MA&D approach for community-based enterprise development. During the workshop the partners prepared a plan for the implementation of MA&D in their project sites. These implementation plans form the basis for CFU to monitor the progress of the projects with the development of community-based enterprises for forest products.

Participants also gave their feedback on the MA&D materials. The main aim of this was to test whether the materials were relevant for CFU's target audience not only in terms of content, but also in terms of readability, presentation and packaging.

On the basis of this workshop, CFU has decided to collaborate with the partners, depending on their interest, on the development of case studies. The case studies will focus on the validation of the following aspects:

- MA&D approach for community-based enterprise development;
- participatory aspects of the MA&D approach;
- MA&D for product/service development (e.g. eco-tourism); and
- MA&D for specific purposes (e.g. certification).

The validation process will take approximately one year. A second workshop is foreseen, in January 2002, to share lessons learned and experiences.

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www.fao.org/waicent/faoinfo/forestry/fon/fonp/cfu/cfu-e.stm

Community-based tree and forest product-based enterprises: market analysis and development.
A field manual by I. Le Cup and K. Nicholson. FAO and RECOFTC. 2000.

The MA&D approach assists people to achieve a sustainable livelihood system in which their household and community assets are increased and local forest management is improved. It enables local people to identify potential products and develop markets that will provide income and benefits without degrading the resource base.

This field manual has been designed to guide facilitators who will assist local people in conducting the MA&D process. It comprises six booklets:

A. User's guide to the field manual
B. Introduction: defining where you want to end up
C. Phase 1: assess the existing situation
D. Phase 2: identify products, markets, and means of marketing
E. Phase 3: plan enterprises for sustainable development
F. Case study: designing tree, forest and home garden product enterprises for sustainable development

INTERNATIONAL ACTION

FOOD AND NUTRITION DIVISION

The Food and Nutrition Division of the Economic and Social Department publishes a periodical, *Food, Nutrition and Agriculture* which covers a wide range of topics related to nutrition and food quality and safety. Articles include descriptions of FAO's activities in the field, adaptations of technical papers, reviews of publications, etc. The journal is sent to 6 000 subscribers in 175 countries and reaches professionals in government agencies, research institutions, non-governmental organizations and food companies.

Food, Nutrition and Agriculture is posted on the Internet at the time the printed version is distributed. It is available in pdf and html formats and is available at: www.fao.org/waicent/faoinfo/economic/esn/fna.htm

For more information, please contact: Janice Albert, Technical Editor, Food and Nutrition Division, Economic and Social Department, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy. E-mail: Janice.Albert@fao.org

FAO AND THE EUROPEAN COMMISSION (EC)

Data Collection and Analysis for Sustainable Forest Management in African, Caribbean and Pacific Countries – Linking National and International Efforts (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 (for further information on the programme, visit: www.fao.org/forestry/fon/fons/outlook/africa/acppro-e.stm).

With regard to NWFPs, the main expected outputs of the programme are twofold:

- National country profiles on statistical data related to NWFPs are compiled for each country; and
- Appropriate methodologies for the collection and validation of key information related to NWFPs are elaborated and tested.

NWFP country profiles

Country profiles on the socio-economic importance and the ecological impact of NWFP use has been compiled for all 55 African countries (including overseas territories such as Réunion). These country profiles will be made available on the FAO home page, where they will be updated regularly (www.fao.org/forestry/fo/country/nav_africa.jsp?lang_id=1).

In addition, a printed version of the country profiles has been published as a working paper in English and French (*NWFP in Africa: a regional and national overview – PFNL de l'Afrique: un aperçu régional et national*), which also includes a regional and subregional synthesis as well as some methodological background information.

The information presented is based mainly on data available at FAO headquarters in Rome and on national studies carried out in Angola, Botswana, Burundi, Cameroon, the Central African Republic, Chad, Comoros, Ethiopia, the Gambia, Guinea, Lesotho, Malawi, Mozambique, Namibia, the Niger, Nigeria, Rwanda, Swaziland and Zambia. The national studies are partly available on the Internet (www.fao.org/forestry/fon/fons/outlook/africa/acp/acp-wp.stm).

Additional information and comments from readers to improve data on NWFPs in African countries would be very much appreciated and can be sent to FAO's NWFP Programme. This information will be added to the Internet version and the authors will be duly acknowledged.

Data collection and validation methodologies

Pilot studies have been initiated in Cameroon, Madagascar and Suriname, in order to elaborate, improve and test appropriate methodologies for the collection, analysis and maintenance of statistical data on NWFPs. These methodologies should:

- provide reasonable estimates of the production, consumption and trade in NWFPs;
- be widely applicable and relevant to other countries in the subregion; and
- be cost-effective, adaptable and feasible with the limited human resources available.

It is hoped that these methodologies will support national efforts to improve the data availability related to NWFP. First results of the pilot studies are expected in May 2001.

In order to improve data on NWFPs, additional information and comments would be very much appreciated and duly acknowledged and included in the Internet version of the respective country brief.

Information and comments can be sent to: Non-Wood Forest Products Programme, 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/fopw/nwfp/nwfp-e.stm; *or*
EC-FAO Partnership Programme, Forest Policy and Planning Division, Forestry Department, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy. Fax: +39 0657055137; e-mail: johan.lejeune@fao.org; www.fao.org/forestry/fon/fons/outlook/africa/acppro-e.stm

INTERNATIONAL ACTION

Sustainable Forest Management Programme in African ACP Countries (GCP/RAF/354/EC) – NWFP component
During the first year of its activities, this project component has focused on methodologies and advice to obtain reliable resource information data (resource inventory data) which are needed for any sustainable management regime of NWFPs.

A regional workshop on the establishment of an African network of gums and resins (these groups comprise some of the most important NWFPs in Africa: gum arabic, olibanum, myrrh and opopanax resins) was organized by the project together with the Kenya Forest Research Institute (KEFRI) at the end of May 2000. National reports on the needs, constraints and opportunities for assessment of gums and resins in Africa were presented and a network of national and international institutions was created.

A conceptual framework for sound NWFP assessment in Africa was developed to cover different products, life forms and different need for assessment at various levels (national level, community level). This framework also includes the identification of the steps involved in the manual's development. A first step is the collation of designs for inclusion in the manual.

In addition to the review by J. Wong mentioned above, a review of francophone literature on NWFP inventory is being carried out.

For more information, please contact: Dr Jenny Wong, Ynys Uchaf, Mynydd Llandegai, Bangor, Gwynedd LL57 4BZ, Wales, UK. Tel./Fax: +44(0)1248 602124; e-mail: JLGWong@cs.com; *or* Ms Laura Russo of FAO's NWFP Programme at the address given on the first page.

In May 2000, a Workshop on Developing Needs-based Inventory Methods for NWFPs: Application and Development of Current Research to Identify Practical Solutions for Developing Countries was held at FAO headquarters in Rome. The workshop was organized by the European Tropical Forest Research Network (ETFRN) and sponsored by the Forest Research Programme of the Department for International Development (DFID), with support from the European Commission.

The background paper, *The biometrics of non-timber forest product resource assessment: a review of current methodology*, by J. Wong and the draft workshop report can be downloaded from the ETFRN Web site (www.etfrn.org/etfrn/workshop/ntfp/).

This meeting and the review on which it was based demonstrated that there is a large unmet demand for advice on inventory design for NWFPs.

FAO IN THE FIELD

The Field Programme of FAO in Forestry
The mandated roles of the Food and Agriculture Organization of the United Nations (FAO), since its foundation in 1945, are:

- to collect, analyse, interpret and disseminate information related to food and agriculture, where "agriculture" includes forestry, fisheries, animal husbandry, etc.;
- to provide advice and make recommendations on technical or policy matters related to the agricultural sector, on request, at national and international levels; and
- to provide a neutral forum for the negotiation of international agreements, codes of conduct, technical standards, and for technical and policy dialogue between member countries.

In forestry there are three normative programmes to fulfil the mandated roles, based on core funding from member countries' contributions (the Regular Programme): Forest Resources, Forest Products and Forestry Policy and Planning. The Field Programme provides technical assistance from extrabudgetary funding in the areas of the three normative programmes. FAO's aid to forestry is thus not only through its Field Programme, described in this article, but also through its normative work including the technical support that staff employed on the Regular Programme give to the Field Programme.

Many of the projects of the Field Programme are located in developing countries in support to their forestry sectors, but some projects are based in headquarters, such as the projects in support of the normative activities for the Global Forest Resources Assessments or the Forests, Trees and People Programme. The recently approved *Strategic Framework for FAO, 2000-2015* stresses the need to increase the synergy between normative and operational activities, and to enhance the dual function of the Field Programme; on the one hand, translating into operation and action the concepts and findings developed through normative activities and, on the other hand, enriching normative work through feedback from field experience.

The extrabudgetary sources include the United Nations Development Programme (UNDP), trust funds from donor countries under the FAO/Government Cooperative Programme, unilateral trust funds from the host country, and the World Food Programme (WFP). These are all broadly described as Trust Funds in FAO's Programme of Work and Budget. In addition, FAO's own Technical Cooperation Programme (TCP) provides funding for urgently needed, small-scale,

short-term catalytic projects designed to stimulate further activities and larger projects, while the Investment Centre Division prepares projects and programmes for funding by international and regional development banks.

The Programme of Work and Budget allocated US$15 million per year for Regular Programme activities in the 2000-2001 biennium, but estimated that Trust Funds would contribute a further US$31 million per year. An analysis of the Field Programme projects in 1998 showed that just over one third of the projects were interregional, followed by projects in Asia (22 percent), Africa (20 percent) and Latin America (15 percent). In terms of topic, most projects were concerned with forest resources and the environment (58 percent), institutions (35 percent) and forest products (7 percent).

The value of TCP projects active in mid-2000, which are in addition to the Trust Funds, were estimated at nearly US$3 million. These projects are active for short periods of a few months to over one year or occasionally more, but this total may be taken as the approximate annual value. TCP projects include support to national forest programme development in Africa, Latin America and countries with economies in transition and emergency activities in insect control in Eastern Europe.

FAO is giving increasing importance to developing partnerships in its execution of the Field Programme. Such partnerships have traditionally been with donor countries who fund projects or programmes which FAO executes and which are now increasingly also with national institutions. A new approach in support of both the Regular and the Field Programmes has been the Partnership Programme, described in the Box. Through partnership arrangements based on the concept of Technical Cooperation among Developing Countries (TCDC), "visiting experts" from national, regional and international centres of high repute work together with FAO staff in programme activities of the Organization for mutual benefit.

FAO AND FORESTRY: A PARTNERSHIP APPROACH

FAO has launched a number of approaches to broaden partnership with its Member Nations, to enhance the cost-effectiveness and relevance of FAO's interventions and to achieve the national and collective self-reliance of developing countries, through the pooling of their institutional and human capacities. These include a programme concerning the use of experts for technical cooperation among developing countries and countries in transition (TCDC/TCCT); a programme of FAO cooperation with academic and research institutions; and a programme for the use of retired experts.

Forestry is tapping the potential of each of these approaches. For example, the project on data collection and analysis for Africa, with funding support from the European Union, is drawing heavily on national experts through TCDC. Experts from Eritrea, the United Republic of Tanzania and the Sudan have been involved to date and more are planned as the project expands through the rest of Africa. Partnerships with academic institutions are also being widely used.

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www.fao.org/

Support for Community Forestry and Wildlife Management (GCP/MOZ/056/NET)

The largest FAO-implemented project in Mozambique is the Netherlands-funded GCP/MOZ/056/NET: Support for Community Forestry and Wildlife Management, which is scheduled to end in May 2002. The project has been promoting various activities to enhance the sustainable use of NWFPs in its pilot areas in the Maputo and Nampula provinces as a way to improve the standard of living of local communities through the multipurpose management of their forest resources. Studies on medicinal plants, wild edible mushrooms, beekeeping, native fruit preserves and marketing have already been developed, demonstrating the technical feasibility of NWFPs in enhancing community-based natural resources management in the country.

Since the start of the project in July 1997, the following NWFP-related activities have been undertaken:

- production and marketing technical feasibility studies (for honey, mushrooms, medicinal plants, grasses and fodder);
- training courses for extensionists (apiculture and honey processing at Goba; mushroom harvesting and commercialization in Nampula);
- studies appraising the socio-economic evaluation of NWFPs in the pilot areas of the project (Goba, Sanhôte and Nirviria); and
- several technical workshops on community-based forest management from field level to the National Directorate staff (and which covered NWFP issues).

The information gathered in this way on NWFP issues and products in the project pilot areas, and for Mozambique in general, has been published and disseminated by the project through a wide range of documentation material, from field guidelines to technical notes, videos and project working papers (and even including theatre as a way of reaching communities). A complete list of project publications and documentation

material is available from the project. Those directly related to NWFPs are: *Report on market alternatives for community-based products*, by O.S. Mubita, 1998; *Non-timber forest products: a source of alternative income generation for forest-based communities*, by A. Baldascini, 1999; and *Edible mushroom production and commercialization*, by A.J. Masuka, Working Paper No. 7, 2000.

Mr Paul Vantomme undertook a backstopping mission to the project in June 2000, during which he also participated in a Seminar on Community Forestry Development in Nampula and coconducted an intensive NWFP training course in Maputo (at the Forestry Research Centre in Marracuene).

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Projet de coopération technique «Appui à la relance de la production et de la commercialisation de la gomme arabique» (TCP/NER/0066)

En septembre 2000, le gouvernement du Niger a démarrer l'exécution d'un projet de coopération technique (PCT) financé par la FAO concernant la relance de la production et de la commercialisation de la gomme arabique au Niger.

Le projet contribuera à:

- une analyse et une classification des espèces de gommier selon leur potentialité et les contraintes de la production;
- une proposition de directives pour une gestion et une exploitation durable des gommiers;
- une évaluation et des propositions pour une amélioration du cadre institutionnel et juridique; et
- l'élaboration d'une stratégie sur la gestion, l'exploitation durable des gommiers et l'utilisation de la gomme.

Le Niger dispose de peuplements d'espèces à gomme couvrant une superficie estimée à plus de 200 000 ha concentrés pour l'essentiel dans l'extrême-est du pays. Pendant les années soixante et soixante-dix, la gomme arabique a considérablement contribué à l'économie nigérienne en tant que deuxième produit d'exportation après l'arachide. Pendant cette période, le Niger a été (avec le Soudan, le Sénégal, la Mauritanie et le Tchad) un des grands exportateurs de la gomme arabique. En 1979, le Niger a exporté 2 610 tonnes.

Dans les années quatre-vingt et quatre-vingt-dix, l'exportation et, par conséquent, l'importance de la gomme arabique pour l'économie nigérienne, a chuté. En 1995, seulement 200 tonnes de gomme arabique ont été exportées. Les raisons de la chute de la production et de l'exportation de la gomme arabique sont multiples: le mauvais état des gommiers; une application inappropriée de techniques d'exploitation des arbres; la désorganisation de la filière commerciale; et un soutien politique et institutionnel insuffisant.

Le gouvernement a, au cours de ces dernières années, entrepris plusieurs actions visant la promotion et le développement du secteur gommier. Il se propose de revoir la gestion et l'utilisation de la gomme arabique et d'élaborer une stratégie nationale pour la mise en valeur des ressources en gommiers. Cette stratégie devrait mener à: une gestion durable des ressources de gomme arabique; une application des technologies rationnelles de la collecte et du traitement des gommes; la création d'une filière commerciale de la gomme appropriée aux besoins des différentes parties concernées; une meilleure sensibilisation des parties concernées, notamment de la population rurale et la mise en place d'un programme de formation et de vulgarisation adéquat; une législation nationale adaptée en soutien à la gestion et à l'utilisation de la gomme arabique; et une meilleure collaboration entre les différentes organisations et institutions nationales impliquées dans la production de la gomme arabique.

Acacia arabica

Pour plus de détails, veuillez contacter: M. G.J. Bernard, Représentant de la FAO au Niger, BP 11246, Niamey, Niger.
Télécopie: +227 724709;
mél.: fao-ner@field.fao.org ou non-wood-news@fao.org

Proyecto GCP/RLA/133/EC – Información y análisis para el manejo forestal sostenible

Este proyecto, integrando esfuerzos nacionales e internacionales en 13 países tropicales de América Latina, persigue mejorar 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.

INTERNATIONAL ACTION

El Proyecto desarrollará un análisis estratégico del sector forestal, que identifique las condiciones emergentes del mercado, los desarrollos tecnológicos y las tendencias y perspectivas que podrían motivar revisiones de la política forestal de los países.

En apoyo a estas necesidades detectadas en América Latina, la Comunidad Europea, impulsor del desarrollo forestal en muchos países de la región, ha cofinanciado con la FAO este proyecto para el período 2000-2003, que será ejecutado por la FAO. El proyecto se desarrollará en 17 países de la región:

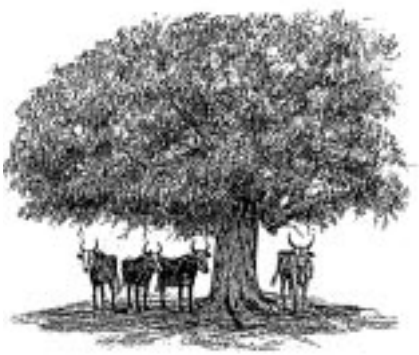
- Países centroamericanos: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua y Panamá;
- Países amazónicos: Bolivia, Brasil, Colombia, Ecuador, Perú y Venezuela;
- Países templados y subtropicales: Argentina, Chile, México, Paraguay y Uruguay.

El proyecto pretende analizar el estado actual de la información forestal en aspectos tales como: recursos forestales, manejo forestal, arboles fuera del bosque, cambio de uso de la tierra, productos forestales, productos forestales no madereros, madera para energía, aspectos socioeconómicos e institucionales.

El personal del proyecto trabajará en estrecho contacto con los coordinadores nacionales de los países, nombrados por sus respectivos gobiernos, y con el grupo de trabajo de la FAO. Se busca así el logro de los objetivos del proyecto a través de un gran esfuerzo conjunto. Entre otras, están previstas las siguientes actividades:

- talleres temáticos sobre información forestal en diferentes países;
- consultorías en los países para determinar el estado actual de la información forestal;
- informes subregionales sobre diferentes tópicos forestales.

Para más información, dirigirse a:
Jorge Morales, Coordinador Proyecto,
Oficina Regional de la FAO para América Latina y el Caribe,
Casilla 10095, Santiago, Chile.
Fax: +56 2 3372101/2/3;
correo electrónico:
Jorge.Morales@fao.org;
www.rlc.fao.org/proyecto/rla133ec/frames.htm;
***o* a:**
Olman Serrano, Subdirección de Utilización de Productos Madereros y No Madereros,
Departamento de Montes, FAO,
Víale delle Terme di Caracalla,
00100 Roma, Italia.
Fax: +39 0657055618;
correo electrónico:
olman.serrano@fao.org



Interregional Project for Participatory Upland Conservation and Development (GCP/INT/542/ITA)

A new Web page on the FAO/Italy Interregional Project for Participatory Upland Conservation and Development (GCP/INT/542/ITA) is now on line in five languages – Arabic, English, French, Spanish and Italian (www.fao.org/waicent/faoinfo/tcd/tco_water/Einter.htm).

This project Web page, apart from a brief description of the approach and methods followed, provides general information about the activities promoted at the grassroots and institutional levels, key results achieved and main lessons learned.

It contains a section on each of the five national project components (Bolivia, Burundi, Nepal, Pakistan and Tunisia) and, possibly more important, has a Reference Material section with more than 100 technical documents and training materials in different languages, most of which are directly downloadable.

It has been designed for FAO and non-FAO professional staff, but can also be of interest to academic institutions and technicians of different countries for information/training purposes. Suggestions for additional links both within and outside FAO are welcome and should be sent to Luca Fe' d'Ostiani (Luca.FedOstiani@fao.org).

Disabled in Thailand learn self-sufficiency growing and selling mushrooms

Twenty-eight disabled people – some deaf and mute, others who are blind or have lost limbs – have recently graduated from a successful FAO project in Thailand which helps them to become self-sufficient by growing mushrooms. They were the second group of graduates who had enrolled after the project was extended.

The 28 students, selected from more than 7 000 applicants, lived and worked at a school located in Ubon Ratchathani, about 400 km northeast of Bangkok. The trainees got up at 4 a.m. to gather and weigh the mushrooms in time for the daily market. A significant part of the course is devoted to showing the trainees how to start a mushroom farm once they return home.

Reports on the progress of last year's trainees show that mushroom growing is indeed a viable enterprise. Five farms are already active and provide their owners with about 5 000 baht per month, which is about 20 percent above the average salary in the area.

Plans are under way to expand the programme, funded jointly by FAO and the Thailand Department of Public Welfare, to other areas of Thailand and neighbouring countries, such as Cambodia and Lao People's Democratic Republic. The need is great. There are an estimated 1.1 million disabled people in Thailand alone, many of them living in extreme poverty. (*Source: FAO Contact*, May 2000.)

INTERNATIONAL ACTION

FAO Subregional Office for Southern and East Africa (SAFR)

FAO's Subregional office for Southern and East Africa, based in Harare, is carrying out a study on the status, management, community involvement and trade potentials of forest-based mushrooms in East and Southern African countries.

For more information, please contact: Mr Michel Laverdiere Forest Conservation Officer, FAO SAFR, PO Box 3730, Harare, Zimbabwe.
Fax: +263 4 700724;
e-mail: Michel.Laverdiere@fao.org

CABI BIOSCIENCE

CABI Bioscience is a multidisciplinary scientific research and training capability, dedicated to tackling some of the world's most challenging problems:

- raising agricultural productivity in sustainable systems;
- conserving and making better use of the world's biological resources; and
- protecting the environment from the damaging effects of human activity.

CABI Bioscience is internationally based and staffed by teams of biosystematists, biotechnologists, ecologists, parasitologists and crop protection and biological control specialists, working at and from its centres in Malaysia, Pakistan, Kenya, Trinidad, Switzerland and the United Kingdom.

Its activities are focused under three sectors:

- Biological Pest Management
- Environment
- Biodiversity and Biosystematics through nine interrelated multidisciplinary programmes.

CABI Bioscience, incorporating the former International Mycological Institute, is also a global centre of excellence on fungi. An ongoing three-year project, Miombo Edible Fungi, funded by the UK Department for International Development, is being managed by CABI Bioscience in association with the Forest Research Institute of Malawi (FRIM).

The project, which started in March 1999, is examining the biophysical, social and economic aspects of wild edible fungi collected from miombo woodlands. This type of native vegetation, found extensively in central and southern Africa, is under threat from increased demand for forest products and new land for agriculture and settlement. Edible fungi are probably the most valuable non-timber forest product harvested from the miombo, yet little is known about the quantities taken each year. There is concern that production of edible fungi is declining while opportunities for improving the financial returns to local people have still to be explored.

FUNGAL NAMES DATABASE

The database of names of fungi maintained by CABI Bioscience (but contributed to by many mycologists throughout the world) is now available for searching on the Internet (http://194.131.255.3/cabipages/). Information on family names will follow shortly.

Although this database started life as just a list of names it now contains, for a small but gradually increasing subset, real taxonomic information. For a smaller subset there are complete taxonomies for genera, families, orders or classes of fungi.

These are part of the CABI Bioscience contribution to Species 2000.

[*Please see under News and Notes for more information on Species 2000.*]

For more information, please contact: Dr Eric Boa, CABI Bioscience, Bakeham Lane, Egham, Surrey TW20 9TY, UK.
Fax: +44 1491 829100;
e-mail: e.boa@cabi.org;
www.cabi.org/bioscience/index.htm

CENTER FOR INTERNATIONAL FORESTRY RESEARCH (CIFOR)

Innovative methodology for improved assessment of development prospects for forest products

As part of CIFOR's effort to understand better the role and potential of non-timber forest products in development and conservation, the Forest Products and People Programme of CIFOR has initiated a collaborative project to make a comparative analysis of a large number of NTFP cases from the three main tropical regions.

About 50 cases of commercially valuable products that have already been studied (the idea is to take advantage of the large amount of work already done on NTFPs) have been selected and will be documented using a standardized set of characteristics which describe aspects of forest product development: factors related to production, processing and marketing conditions. These will then be analysed using multivariate techniques (exploratory analyses) to: create typologies of cases; identify conditions associated with particular kinds of development and conservation outcomes; and identify and test hypotheses about forest product development.

The goal of this exercise is to identify "conditions" and "types" of cases that are amenable to development interventions, as well as to flag "types" of cases that may not be good investments. The aim is to develop a tool that could be used to assess the development potential of many different forest products, regardless of type or location. This new analytical tool will assist in predicting the development prospects for forest

products and could eventually help guide governments, assistance agencies, non-governmental organizations and others in identifying appropriate projects and policies that promote sustainable development based on forest products. (*Extracted and edited from: CIFOR News*, No. 26, November 2000.)

For more information, please contact: Brian Belcher, Ousseynou Ndoye or Patricia Shanley, CIFOR, PO Box 6596, JKPWB, Jakarta 10065, Indonesia. Fax: +62 251 622 100; e-mail: cifor@cgiar.org; b.belcher@cgiar.org; o.ndoye@cgiar.org; *or* p.shanley@cgiar.org

Under the CIFOR programme, Local People, Devolution and Adaptive Co-management, a number of case studies were conducted in China, India and the Philippines to assess whether and how the well-known examples of devolution policies in these three countries expanded the scope for local decision-making about forest, supported forest-related livelihoods and improved forest quality.

Preliminary findings indicate that the devolution policies most often cited as successes in the literature on policy reform – joint forest management in India and community-based forest management in the Philippines – were often disappointing in their impacts on decision-making authority and livelihoods. Household-based management in China, in contrast, had somewhat more positive impacts, although here too significant problems were found. (*Source:* presentation by David Edmunds, CIFOR at FAO headquarters, Rome, October 2000.)

For more information, please contact: David Edmunds or Carol Colfer, CIFOR, PO Box 6596, JKPWB, Jakarta 10065, Indonesia. Fax: +62 251 622 100; e-mail: D.Edmunds@cgiar.org
[*Please see under News and Notes for more information on CIFOR.*]

GERMAN AGENCY FOR TECHNICAL COOPERATION – GTZ

GTZ has a number of activities dealing with NWFPs: two relevant programmes are the Tropical Ecology Support Programme (TÖB) and the German Appropriate Technology Exchange Programme (GATE).

TÖB is a supraregional service and research programme which contributes to the ecological sustainability of development cooperation. In the framework of this programme, various studies related to NWFPs have been carried out, such as wildlife management, NWFP assessment in Paraguay, bushmeat in West Africa and economic valuation of biological diversity.

GATE aims at improving "the technological competence of NGOs and other groups involved in self-help-oriented poverty alleviation and to develop information and knowledge management systems for NGOs and self-help groups". In the field of NWFPs, activities are related to selected products such as neem, brazil nuts (small-scale projects in Peru and Brazil) and snake serum (Peru).

The most relevant activities of GTZ related to NWFPs are carried out by sectoral projects, Implementing the Convention on Biodiversity (Biodiv Project) and the Livelihood Systems and Tropical Forest Areas Project (LISTRA/ABS).

The Biodiv Project is one of six sectoral projects (other projects are concerned with agrobiodiversity, desertification, climate change and the Montreal Protocol), which are carried out in support of the implementation of the international conventions. The Biodiv Project is intended "to help speed implementation of the international Convention on Biological Diversity (CBD) in the development cooperation areas in which Germany is involved, and to promote the further development of the Convention itself, its instruments and bodies. Moreover, the Biodiv Project supports developing countries in their efforts to implement the Convention at the national level. The project promotes both large individual projects and smaller-scale activities."

The project currently focuses on issues such as bioprospecting (on-going project in the Philippines), medicinal plants (Guinea), tree-ferns and palms (Mexico), Mongolian gazelles (Mongolia), alternative income generation through NWFPs (Malawi), ecotourism (Ecuador, Albania) and gender.

In addition to the projects mentioned above, the Federal Ministry for Economic Cooperation and Development (BMZ) is cofunding:

- the elaboration of a concept regarding the use of medicinal plants (e.g. *Andrographis paniculata*) as a national resource in Indonesia;
- the elaboration of monographs on medicinal plants from Nepal and Thailand in order to support the cultivation and marketing of medicinal plants; and
- a TRAFFIC project on international trade in medicinal plants.

Future activities of the Biodiv Project scheduled for the third phase of the project (2000-2003) will focus on four main issues: access and benefit sharing (ABS); traditional knowledge (Article 8j of the CBD); biosafety; and synergies between the various conventions and the

International Forum on Forests (IFF) process.

The LISTRA/ABS Project collects and evaluates experience and expertise gained from projects and research work in order to develop appropriate methodological approaches, concepts and strategies related to the management of protected areas and buffer zones.

The most relevant issues dealt with by LISTRA/ABS in the field of NWFPs are the topics "negotiation of user rights" and "economic valuation of natural resources".

Future activities for the next two years will include: funding mechanisms for nature conservation; relationship between national crisis and nature conservation; and benefit-sharing arrangements. (*Edited from:* travel report by S. Walter, FAO, November 2000.)

More information on GTZ work is found in: GTZ. 1998. *The potentials of the neem tree in Ghana.* Eschborn; GTZ. 2000. *Status report on global neem usage.* By P. Förster and G. Moser. Eschborn, Germany.

Further information on the various Biodiv projects is available on the Internet: (www.gtz.de/biodiv/english/a03_e.htm).

For more information, please contact: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, Implementing the Biodiversity Convention, OE 4404, PO Box 51 80, D-65726 Eschborn, Germany. Fax: +49 6196 79 6190.

INTERNATIONAL PLANT GENETIC RESOURCES INSTITUTE (IPGRI)

IPGRI has recently started a project on the conservation, management and sustainable use of forest genetic resources in Brazil and Argentina, which includes an important socio-economic component, complementing the more traditional genetic and ecological studies. Four study sites have been selected in the project, some of which are interesting from the socio-economic viewpoint (e.g. Mapuche communities in San Carlos de Bariloche, Argentina; campesinos in Pontal do Paranapanema, Brazil; rubber tappers and colonos in Acre, Brazil).

For more information, please contact: Weber Amaral, International Plant Genetic Resources Institute, Via delle Sette Chiese 142, 00145 Rome, Italy. Fax: +39 065750309; e-mail: L.Petri@cgiar.org; www.cgiar.org/ipgri

INTERNATIONAL TROPICAL TIMBER ORGANIZATION (ITTO)

Recent and ongoing ITTO projects in the field of NTFPs are:

Promotion of non timber forest products in the Terai region of Nepal
Implementing agency: Ministry of Forests and Soil Conservation
Non-timber forest products (NTFP) have an important role in the economy of the Terai region of Nepal. Many medicinal plants have export markets in India, Germany, Japan, France and Malaysia; however, certain NTFP species are facing extinction or degradation. At present, there is a lack of information on propagation, sustained yield, appropriate harvesting techniques, best harvesting season, storage and processing. This pre-project will assess the present status in the management of NTFPs in three of Nepal's Terai districts (Banke, Parsa and Morang) by determining the current use, identifying the potential and means for increasing production. These districts contain a large quantity of medicinal and aromatic plants that are harvested annually. The pre-project will include a quantitative resource assessment, determination of the annual quantity of NTFPs collected, methods of collection, drying and storage practices, and the examination of the socio-economic condition of local people involved in NTFP production. (*Source:* www.itto.or.jp/inside/report1999/annex1b.html)

Non-Timber Production and Sustainable Development in the Amazon (Brazil – PD 31/99 Rev. 3 (I))
Implementing agency: University of Brasilia
Funding countries: Japan, Switzerland
This 24-month project will continue research and extension work on the promotion of non-timber production in the Amazon initiated under ITTO project PD 143/91 Rev. 2(I) Non-Wood Tropical Forest Products: Processing, Collection and Trade. It will collect and make available comprehensive socio-economic and technological information on non-timber production in the Amazon. It will also add to a databank on Amazonian non-wood forest products in Portuguese.

Processing and Utilization of Almaciga (*Agathis philippinensis* Warb.) Resin as Source of Industrial Chemicals (Philippines – PD 36/99 Rev. 4(I))
Implementing agency: Forest Products Research and Development Institute (FPRDI)
Funding countries: Japan, Switzerland
The specific objectives of the project are to study the technical and economic aspects of refining crude almaciga resin on a pilot scale and to develop industrial

Cinchona calisaya

chemicals from refined resin. The project will involve the promotion and transfer of improved tapping techniques for almaciga resin and development work for increased and further processing of almaciga resin into higher value-added products in order to promote development opportunities and income in almaciga-producing forest communities

Sustainable Management and Utilization of Sympodial Bamboos in South China (China – PD 10/00 Rev. 2(F,I))
Implementing agency: Research Institute of Subtropical Forestry, Chinese Academy of Forestry
Funding countries: Japan, Australia, Republic of Korea
This 36-month project will develop and disseminate knowledge and technologies to promote the sustainable management and efficient utilization of sympodial bamboo. This type of bamboo is distributed widely in southern China. The project will establish a conservation garden of sympodial bamboo genetic diversity based on an analysis of the genetic resource, and identify two 1 000-ha experimental and demonstration areas for the implementation of high-yielding and sustainable management models.

Improvement of Sustainable Management and Utilization of Tropical Non-Timber Forest Products (NTFP) in Cambodia (Cambodia – PPD 1/00 Rev. 1(I))
Implementing agency: Department of Forestry and Wildlife
Funding countries: Japan, United States, France
This six-month pre-project will assess the current situation of production, utilization and trade of tropical NTFPs in Cambodia, with a view to formulating a project proposal for improving the sustainable management and utilization of NTFPs for consideration by the International Tropical Timber Council. (*Source:* www.itto.or.jp/inside/download/itto%20approved%20and%20funded%20projects.doc)

For more information, please contact: International Tropical Timber Organization (ITTO), International Organizations Center, 5th Floor, Pacifico-Yokohama 1-1-1, Minato-Mirai, Nishi-ku, Yokohama, 220-0012 Japan.
Fax: +81 45 223 1111;
e-mail: itto@itto.or.jp;
www.itto.or.jp/Index.html

Tropical Forest Update
Tropical Forest Update (TFU) is a free journal published every three months by ITTO, both in hard copy and on the ITTO Web site, to promote the conservation and sustainable development of tropical forests. TFU is also available in French and Spanish.

Tropical Forest on-line is an electronic version newsletter, containing articles published in the most recent edition of TFU.

To receive the printed version of the newsletter, send your full postal address to the TFU Editor, Alastair Sarre, International Tropical Timber Organization (ITTO), International Organizations Center, 5th Floor, Pacifico-Yokohama 1-1-1, Minato-Mirai, Nishi-ku, Yokohama, 220-0012 Japan. E-mail: tfu@itto.or.jp; www.itto.or.jp/newsletter/v10n3/index.html

SECRETARIAT OF THE PACIFIC COMMUNITY

Regional Forestry Programme
The Suva-based Regional Forestry Programme is made up of the former UNDP/FAO South Pacific Forest and Trees Support Programme (SPFTSP) and GTZ Pacific German Regional Forestry Project (PGRFP).

Forest resources play a critical role in the economy and sustainable livelihood of Pacific Island people. Proper management practices and sustainable harvesting of this resource are the key objective of the Regional Forestry Programme. Focus is on natural forest management and conservation, watershed management, agroforestry, and development and use of tree/plant resources.

In addition, the Regional Forestry Programme integrates the focus and activities of previously independent regional forestry initiatives, to ensure that there is collaboration and complementarity at a regional level.

For more information, please contact: Secretariat of the Pacific Community, BP D5, 98848 Noumea Cedex, New Caledonia.
Fax: +687 26 38 18;
e-mail: spc@spc.int;
www.spc.org.nc/ ●

Manual de ordenamiento castañero

RECENT EVENTS

INTERNATIONAL SYMPOSIUM ON SUSTAINABLE DEVELOPMENT IN SEMI-ARID REGIONS – WORLD SEMI-ARID 2000

JOÃO PESSOA, PARAIBA, BRAZIL
9-22 MARCH 2000

For more information, please contact:
Prof. Dorival C. Bruni, President, Brazilian Society for the Environment (BIOSFERA), PO Box 2432, Rio de Janeiro, RJ, CEP 20001-970, Brazil.
Fax: +55 21 2217626;
e-mail: biosfera@biosfera.com.br;
www.biosfera.com.br

9TH MEETING OF THE FORESTS, TREES AND PEOPLE PROGRAMME (FTTP)

NEPAL
21-25 MARCH 2000

NTFP issues is an important topic of collaboration in FTPP Asia. Issues covered include: domestication of NTFPs, unsustainable harvesting, *in situ* conservation of some species; NTFP policy/management plan development; income source – maintain livelihoods; and marketing. A report of the working group discussion is available.

For more information, please contact:
FTPP Facilitator for Southeast Asia, FTPP/RECOFTC, Regional Community Forestry Training Center, Kasetsart University, PO Box 1111, Bangkok 10903, Thailand.
Fax: +66 2 561 4880;
e-mail: ftcsss@nontri.ku.ac.th;
www.recoftc.org/; *or*
Mr Hiroyuki Tanaka,
Associate Professional Officer, Community Forestry Unit, Forestry Policy and Planning Division, Forestry Department, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy.
Fax: +39 0657055514;
www.fao.org/waicent/faoinfo/forestry/fon/fonp/cfu/cfu-e.stm;
www.fao.org/waicent/faoinfo/forestry/fon/fonp/cfu/ftpp/en/ftpp-e.stm

BIOLOGY, SILVICULTURE AND MANAGEMENT OF NON-TIMBER FOREST PRODUCTS

WAGENINGEN, THE NETHERLANDS
14 APRIL 2000

For more information, please contact:
Jelle Maas, Programme Unit, The Tropenbos Foundation, PO Box 232, 6700 AE, Wageningen, the Netherlands.
E-mail: j.b.maas@tropenbos.agro.nl;
www.tropenbos.nl

WORKSHOP ON DEVELOPING NEEDS-BASED INVENTORY METHODS FOR NON-TIMBER FOREST PRODUCTS: APPLICATION AND DEVELOPMENT OF CURRENT RESEARCH TO IDENTIFY PRACTICAL SOLUTIONS FOR DEVELOPING COUNTRIES

ROME, ITALY
4-5 MAY 2000

Organized by the European Tropical Forest Research Network (ETFRN) and the Forest Research Programme (FRP) of the United Kingdom Department for International Development, in collaboration with FAO.

For more information, please contact:
Evelyn Whyte, European Tropical Forest Research Network (ETFRN), 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
[*Please see Box on p. 67, under International Action, for more information on this workshop.*]

3RD EUROPEAN FORUM ON URBAN FORESTRY

BUDAPEST, HUNGARY
9-12 MAY 2000

The International Union of Forestry Research Organizations (IUFRO) established a special Working Group on Urban Forestry (S.6.14.00) some years ago. In addition, the European Forum on Urban Forestry (EFUF) was initiated in 1998. EFUF was established to create a platform for Europe's urban forest managers to meet and exchange experiences and information. A small number of scientists and other experts in the field are invited to take part in the discussions. To date, EFUF's main focus has been on the planning and management of urban and peri-urban woodlands.

The theme of this workshop was "Paying for urban forests".

Thirty urban foresters from the following countries participated: Austria, Belgium, Denmark, Finland, France, Hungary, Israel, Italy, the Netherlands, Norway, Slovakia, Slovenia and the United Kingdom.

During the first two EFUF meetings, a central issue had been financing urban forestry. Urban woodland managers need to cater for a wide range of needs, including the demands of forest recreation opportunities for millions of people. Forestry in and near urban areas is often more expensive than forestry elsewhere, which raises the question of how sufficient funding can be found. The themes of the workshop sessions were:

- Valuing and marketing of urban forest goods and services.
- Exploring different funding sources for urban forestry.
- Urban forest management in a changing society.

For more information, please contact:
Dr Cecil C. Konijnendijk, Coordinator, European Forum on Urban Forestry, Danish Forest and Landscape Research Institute, Hoersholm Kongevej 11,

DK-2970 Hoersholm, Denmark.
Fax: +45 45 76 32 33;
e-mail: cck@fsl.dk

WORKSHOP ON NON-TIMBER FOREST PRODUCTS

BRITISH COLUMBIA, CANADA
23-24 MAY 2000

British Columbia's interior forests are a rich storehouse of food, medicinal, industrial, aesthetic and spiritual resources. Commercial interest in non-timber forest products is growing rapidly, but many of these same products have always been used by First Nations people. Commercial harvesting of NTFPs is coming into conflict with traditional First Nations' use in many parts of British Colombia. By bringing people together to talk about these issues, future conflicts may be avoided.

For more information, please contact:
mkeefer@cyberlink.bc.ca

AFRICAN NETWORK ON NATURAL GUMS AND RESINS

NAIROBI, KENYA
29-31 MAY 2000

The workshop was jointly organized by the Kenya Forestry Research Institute (KEFRI) and FAO's Forest Products and Food and Nutrition Divisions. The workshop was a follow-up to a regional conference on the Conservation, Management and Utilization of Plant Gums, Resins and Essential Oils, held in Nairobi in October 1997, and was attended by representatives from nine African countries (producing natural gums and resins) and representatives of other African and international organizations.

During the workshop, the Network for Gums and Resins in Africa (NGARA) was formally established, with the membership of all the countries attending the workshop. The mission, terms of reference, organization and management, mechanisms of operation and sustainability of NGARA were discussed and agreed upon.

Ms Laura Russo, Forestry Officer, FAO, made a presentation on the information needs at the local and national levels for the biophysical and socio-economic assessment of NWFPs. She also presented the aims and activities of the NWFP component of project GCP/RAF/354/EC: Sustainable Forest Management in African ACP Countries, which has contributed funds to support the organization of the workshop.

Gums and resins (from species of the genera *Acacia*, *Boswellia* and *Commiphora*) are among the most important NWFP produced in Africa. Consequently, further work for the assessment of the productive capacity of the resource base and of the socio-economic potential and prospects for the development of these products is considered a regional priority.

For more information, please contact:
Kenya Forestry Research Institute (KEFRI), Post Box 20412, Nairobi, Kenya.
Fax: +254 514 32844;
e-mail: kefri@arce.or.ke
[*Please see under News and Notes for more information on NGARA.*]

EXPLORING THE PLANT-HUMAN RELATIONSHIP

OHIO, USA
9-11 JUNE 2000

The workshop focused on getting to know herbs and exploring the plant-human relationship.

For more information, please contact:
United Plant Savers, PO Box 98, East Barre, VT 05649, USA.
Fax: +1 802 479 9825;
e-mail: info@plantsavers.org

CULTIVATING (IN) TROPICAL FORESTS

LOFOTEN, NORWAY
28 JUNE-1 JULY 2000

The objective of the workshop "The evolution and sustainability of intermediate systems between extractivism and plantations" was to bring together specialists with expertise in intermediate systems, from various disciplines and geographical areas, to explore issues related to these systems and to develop a stronger theoretical framework based on their collective experience and ideas.

The workshop organizers were the FORESASIA project, a European Union-funded project on intermediate systems in Indonesia and the Philippines (involving eight institutions in these two countries and France, Norway and Spain) and the Center for International Forestry Research (CIFOR).

For more information, please visit:
Workshop site:
http://org.nlh.no/etfrn/lofoten/;
FORESASIA project:
www.envirodev.org/forresasia/;
CIFOR: www.cgiar.org/cifor/

FAO NEAR EAST FORESTRY COMMISSION – 14TH SESSION

TEHERAN, IRAN
1-4 JULY 2000

Delegates from 11 members of the Near East Forestry Commission and observers from international intergovernmental organizations attended the meeting.

The commission recommended that FAO should be involved (with relevant partners) in the promotion of NWFPs in

RECENT EVENTS

the Near East region, especially in improving networking, supporting the preparation of regional development projects and common programmes, and reviewing national forest policies and regulations so as to identify critical gaps which could impede the conservation of forest biodiversity and at the same time the sustainable development of NWFPs. (*Source:* Summary report of the 14th session of the Near East Forestry Commission, July 2000.)

For more information, please contact:
Regional Forestry Officer, FAO Regional Office for the Near East (RNE), PO Box 2223, Cairo, Egypt.
Fax: +20 2 7495981;
e-mail: fao-rne@fao.org

SUSTAINABLE USE OF FOREST PRODUCTS: MIOMBO EDIBLE FUNGI

ZOMBA, MALAWI
17 JULY 2000

The meeting was organized at the Malawi Forestry Research Institute under the framework of the Miombo Edible Fungi Project.

Proceedings are available and can be requested from:
Dr Eric Boa, CABI Bioscience, Bakeham Lane, Egham, Surrey TW20 9TY, UK.
Fax: +44 1491 829100;
e-mail: e.boa@cabi.org;
www.cabi.org/bioscience/index.htm
[*Please see under International Action for more information on the Miombo Edible Fungi Project.*]

WORLD CONGRESS ON CORK OAK AND CORK

LISBON, PORTUGAL
19-21 JULY 2000

The congress had the following aims:

- to demonstrate the decisive importance of the cork oak stand as an ecosystem with unique peculiarities which are decisive for environmental protection and against desertification in its natural growing country;
- to contribute to highlighting the image of cork as a multipurpose raw material with exceptional essential features;
- to contribute to intensifying cork's image while being a polyvalent raw material with exceptional intrinsic characteristics;
- to contribute to the sustainability of the multifunction ecosystems that allow for the production of cork;
- to contribute to the protection and development of the natural qualities of cork and of the different manufactured cork products.

For more information, please contact:
Maria Carolina Varela, Estação Florestal Nacional, Procalfer – Quinta do Marquês, 2784-505 Oeiras, Portugal.
Fax: +351 21 441 56 60;
mcarolina@mail.telepac.pt;
www.worldcorkcongress.com

RESEARCHABLE CONSTRAINTS TO THE USE OF FOREST AND TREE PRODUCTS BY POOR URBAN AND PERI-URBAN HOUSEHOLDS IN DEVELOPING COUNTRIES

READING, UK
20-21 JULY 2000

This workshop was organized by the University of Reading to present the findings of research carried out under the framework of a project funded by the Forest Research Programme (FRP) of the Department for International Development (DFID-UK, Project ZF0136). The project aimed at studying the use of forest products and services by urban poor people.

Three sets of activities were carried out from April to July 2000:

- a literature search on forest products' use by the target group in relation to urban poverty;
- case studies on forest products' use and o occupations in six cities in six developing countries; and
- a workshop to discuss the results with a group of people with interest and knowledge in forest products and/or urban poverty and development and identify researchable constraints.

The objectives, methodology and findings of the project were presented during the workshop. The project was undertaken in six cities within FRP target countries – Mexico City, Mexico; Belém, Brazil; Kumasi, Ghana; Harare, Zimbabwe; Kathmandu, Nepal; and Calcutta, India.

The project consisted of a rapid appraisal of forest products used and income derived from trades or enterprises involving forest products. The appraisal was carried out by researchers of the University of Reading and collaborating institutions: Universidad Autónoma del Estado de México, Universidade Federal da Bahia, Crop Research Institute (Kumasi), IT Zimbabwe, Nepal Agroforestry Foundation and the Indian Statistical Institute (Calcutta).

Ms Laura Russo, Forestry Officer (NWFP), FAO, made a presentation on FAO's activities in the field of urban and peri-urban agriculture and urban forestry.

For more information please contact:
Dr Georgina Holt, Department of Agricultural/Food Economics, University of Reading, PO Box 237, RG6 6AR, Reading, UK.
E-mail: aes98gh@reading.ac.uk
[*Please see under News and Notes for more information on this workshop.*]

RECENT EVENTS

CULTURES AND BIODIVERSITY CONGRESS 2000

YUNNAN PROVINCE, CHINA
21-29 JULY 2000

Congress themes:

- The state of the art of indigenous cultures and biodiversity.
- The cultural diversity of indigenous uses of space and resources.
- The marginality, resource tenure and intellectual property rights of indigenous people.
- The impact of modernization on indigenous ways of dealing with nature.
- The intercultural communication between knowledge systems of indigenous people and the scientific community.
- The Yunnan Agenda 2000 on Ethno- and Biodiversity.

For more information, please contact: Xu Jianchu, Centre for Biodiversity and Indigenous Knowledge, Kunming, Yunnan, China.
E-mail: xujc97@public.km.yn.cn or cbik@public.km.yn.cn;
http://cbik.org

SECOND PAN-AFRICAN SYMPOSIUM ON THE USE OF NATURAL RESOURCES IN AFRICA

OUAGADOUGOU, BURKINA FASO
24-27 JULY 2000

The symposium explored the impact of development on sustainable use and conservation of natural resources in Africa.

For more information, please contact: Bihini Won Wa Musiti, SUI African Regional Coordinator, IUCN Regional Office for Central Africa, BP 5506 Yaoundé, Cameroon.
Fax: +237 216497;
e-mail: rocaii.iucn@camnet.cm

BIODIVERSITY CONSERVATION AND USE – INTERNET SEMINAR

JULY 2000

Organized by the World Bank Institute's Environment and Natural Resources Division, this Internet seminar was aimed at sharing experiences and helping to further the discourse on the role of biodiversity in poverty alleviation and the future of biodiversity conservation. Experts from IUCN, the World Bank and other organizations moderated the discussions. (www.worldbank.org/devforum/forum_biodiversity.html)

BAMBOO 2000 INTERNATIONAL SYMPOSIUM

CHIANG MAI, THAILAND
2-4 AUGUST 2000

For more information, please contact: Faculty of Forestry, Kasetsart University, Bangkok 10900, Thailand.
Fax: +66 2 942 8112;
e-mail: fforlwp@nontri.ku.ac.th

APRENDA A ELABORAR JABONES MEDICINALES USANDO PLANTAS DE COSTA RICA

SAN JOSÉ, COSTA RICA
2 Y 3 DE SEPTIEMBRE DE 2000

Rehum officinalis

El objetivo general del curso era promover el estudio, la conservación y el aprovechamiento sostenible de las plantas con propiedades para la elaboración de champúes y jabones medicinales mediante un curso breve dirigido a amantes de la naturaleza.

Para más información, dirigirse a: Ronald Rodríguez, Coordinador BioCursos OET, Apartado postal 676-2050 San Pedro, San José, Costa Rica.
Fax: +506 240 6783;
correo electrónico: biocursos@ots.ac.cr;
www.ots.ac.cr/es/biocursos

LIVING WITH THE TAIGA – BOREAL FORESTS IN THE 21ST CENTURY

MOSCOW, RUSSIAN FEDERATION
17-22 SEPTEMBER 2000

As we enter the twenty-first century, peoples, communities, countries and corporations are all searching for security – security for environment, livelihoods and investments. Many people are asking such questions as: What major trends are shaping the boreal forest? What is the status of multiple-use forest management in the taiga? Can the boreal forest be a source for industry, bring benefits to local populations and provide a home for animals? Is there such a thing as "sustainable" industrial forestry? What lessons can indigenous peoples teach the rest of us about providing for community and wilderness?

Nowhere more than in the Russian Federation, which contains more than half of the world's coniferous forests and 40 percent of the standing old-growth softwood timber, are those questions in urgent need of an answer. This is why it was chosen to hold the fifth international conference near Moscow on the theme of "Living with the Taiga" and the role of multiple-use forest management in promoting socially beneficial, economically viable and ecologically sound forestry.

RECENT EVENTS

For more information, please contact: Dimitry Aksenov or Taiga Rescue Network International Coordination Centre, Box 116, Ajtte, S-962 23 Jokkmokk, Sweden.
Fax. +46 971 12057;
e-mail: taiga@ajtte.com or picea@online.ru;
www.snf.se/trn
[*Please see under News and Notes for more information on the Taiga Rescue Network.*]

NATURAL PRODUCTS DRUG DISCOVERY: AN ENGINE FOR SOCIALLY RESPONSIBLE DEVELOPMENT AND CONSERVATION OF BIODIVERSITY

WASHINGTON, DC, USA
28 SEPTEMBER 2000

For more information, please contact: Allie Hoover, USDA Forest Service, 1099 14th Street NW, Washington, DC 20005, USA.

REVIEW OF THE MOST RESEARCHED HERBAL PRODUCTS: IDENTIFYING EUROPEAN BRANDS CITED IN SCIENTIFIC LITERATURE AND THEIR NAMES IN THE UNITED STATES MARKET

OHIO, USA
29 SEPTEMBER-1 OCTOBER 2000

This workshop reviewed some of the clinical studies on specific brands of herbs and discussed to what extent research incentive exists to stimulate herbal manufacturers to conduct more clinical research.

For more information, please contact: United Plant Savers, PO Box 98, East Barre, VT 05649, USA.
Fax: +1 802 479 9825;
e-mail: info@plantsavers.org

3RD INTERNATIONAL WORKSHOP ON VALORIZATION OF AFRICAN PLUM (*DACRYODES EDULIS*) AND OTHER NON-CONVENTIONAL OIL CROPS

YAOUNDÉ, CAMEROON
2-5 OCTOBER 2000

The workshop was organized by the African Safou Network (ASANET) and the Cameroonian Institute of Agricultural Research for Development (IRAD), and was sponsored by the Forest Research Programme of the United Kingdom Department for International Development. The main aims of the meeting were to assess the state of knowledge of these crops and to highlight both research gaps and development potential.

For more information, please contact: Dr Joseph Kengue, Workshop Coordinator, Institute of Agricultural Research for Development, PO Box 2067, Yaoundé, Cameroon.
Fax: +237 237571;
e-mail: irad-fruits@camnet.cm

SECOND WORLD CONSERVATION CONGRESS (WCC2)

4-11 OCTOBER 2000
AMMAN, JORDAN

The theme of the Amman Congress was "ecospace", a term indicating that environmental protection at various geographical scales is a prerequisite for the social, economic and even political security of people. Redefining the frontiers of conservation will address the problem of the current inadequacy in social and spatial organization for environmental management, involving knowledge, empowerment and governance at the global, national and local levels. It will link ecosystem conservation with the need to stem the global loss of biodiversity and thus build on IUCN's traditional strengths in species and protected areas.

The following sessions took place:

1. Looking at the big picture: ecosystem management in mountains, watersheds and river basins.
2. Environmental health of island, coastal and marine ecosystems.
3. Environment and security.
4. Forest ecospaces, biodiversity and environmental security.
5. Ecospaces and a global culture of sustainability.
6. Making waves: strategies for averting the world water crisis.
7. Mobilizing knowledge for biodiversity.
8. Sowing the seeds for sustainability: agriculture, biodiversity, economy and society.
9. The role of local solutions, cultural diversity and social equity for conservation.
10. Developing and investing in biodiversity business.
11. Integrating biodiversity conservation science into environmental policy and management.
12. The ecological limits of climate change.

For more information, please contact: World Conservation Union (IUCN), rue Mauverney 28, 1196 Gland, Switzerland.
www.iucn.org/amman/index.html

RECENT EVENTS

INTERNATIONAL TRAINING WORKSHOP ON SUSTAINABLE BAMBOO MANAGEMENT AND PROCESSING TECHNIQUES FOR SMALL-SIZED BAMBOO ENTERPRISES

HANGZHOU, ZHEJIANG PROVINCE, CHINA
4-14 OCTOBER 2000

Many developing countries are rich in bamboo resources, but poor in sustainable and intensive management experiences, which result in low productivity and a considerable waste of resources. Experience in China shows that developing bamboo plantation and the rural bamboo processing industry is an important way to increase the income of rural people and improve the ecological environment in rural areas. How to utilize bamboo fully, and develop rural or household enterprises that process bamboo products of high commercial value, has become the focus of a wide range of fields.

As a result, the Chinese Ministry of Science and Technology, the International Network for Bamboo and Rattan (INBAR) and the International Farm Forestry Training Center (INFORTRACE) of the Chinese Academy of Forestry decided to cosponsor this international training workshop.

The workshop provided a good opportunity for all participants to exchange information and to visit various kinds of rural bamboo processing enterprises/plants producing traditional bamboo handicrafts, series of shoot products and series of bamboo panels.

For more information, please contact: Zhu Zhaohua, Deputy Director-General, International Network for Bamboo and Rattan, Branch Box 155, PO Box 9799, Beijing 100101, China.
Fax: +85 10 64956983;
e-mail: wjin@inbar.org.cn

FIELDS & FORESTS 2000: A COASTAL AGROFORESTRY CONFERENCE AND TRADESHOW

VANCOUVER ISLAND, BRITISH COLUMBIA, CANADA
13-14 OCTOBER 2000

Changing trends in global agricultural and forest resource sectors are forcing rural landowners to augment their farm and forest incomes. In the past, the focus of our forest resources has been to view them primarily as sources of timber only. By integrating non-timber natural resources income opportunities into small-scale farm and forest sector operations, our farmers and foresters will have increased opportunities to achieve profit due to greater diversification.

Conference proceedings will eventually be published on the conference Internet site.

For more information, please visit the conference Internet site: http://valleylinks.net/agroforest/

TRAINING ON MEASURES OF SUCCESS FOR SUSTAINABLE FORESTRY

BHOPAL, INDIA
16-21 OCTOBER 2000

This training course was organized by the Indian Institute of Forest Management (IIFM) with support from the World Bank-WWF Global Alliance.

The two main objectives of the course were to develop an understanding of the criteria and indicators for sustainable forest management among the participants, and to equip them with the skills of participatory designing and field application of a representative basic set of performance indicators in the context of sustainable forest management in South Asia.

For more information, please contact: Deep Narayan Pandey, IFS Associate Professor, Coordinator, INEF-International Network on Ethnoforestry, Coordinator for South Asia, Asia Forest Network, Indian Institute of Forest Management, PO Box 357, Nehru Nagar, Bhopal 462003, India.
Fax: +91 755 772878;
e-mail: dnpandey@vsnl.com;
www.inef.org; www.iifm.org *or*
http://education.vsnl.com/deep

NATURAL AND CULTIVATED TRUFFLES

ALBENGA, ITALY
18 OCTOBER 2000

A one-day workshop was organized on how to improve truffle production, with special emphasis on the renowned black truffle.

For more information, please contact: Ms Francesca Cambiaggi, Ordine dei Dottori Agronomi e Dottori Forestali delle Province di Genova e Savona, Largo San Giuseppe 18/15, Genoa 16121, Italy.
E-mail: agroforliguria@multistudio.it

RECENT EVENTS

ROTHAMSTED INTERNATIONAL BIOMARKET 2000 – BIOPRODUCTS FROM PLANTS AND MICROBES

HARPENDEN, UK
18-20 OCTOBER 2000

For more information, please contact:
Dr Roger Atkin, "Rothamsted International BioMarket 2000", IACR-Rothamsted, Harpenden, Herts AL5 2JQ, UK.
Fax: +44 1582 760981;
e-mail: roger.atkin@bbsrc.ac.uk;
www.biomarket.iacr.ac.uk

INTERNATIONAL WORKSHOP ON SUSTAINABLE DEVELOPMENT OF MARKETING OF NON-WOOD FOREST PRODUCTS IN COUNTRIES IN TRANSITION TO MARKET ECONOMIES

CHISINAU, REPUBLIC OF MOLDOVA
23-27 OCTOBER 2000

The workshop was hosted by the State Forest Association of the Republic of Moldova under the auspices of the ECE Timber Committee, in cooperation with the Finnish Ministry of Environment, the Moldovan Ministry of Environment and Territorial Development, UNDP Moldova and FAO Forestry Department.

The main objectives of the workshop were to increase awareness of the importance of marketing in the non-wood forest products (NWFP) sector, to provide information and understanding of the basic elements of marketing and the business environment and to initiate and strengthen collaboration between public and private organizations in the sector.

The attendance of 54 experts from 13 countries was by invitation only of the UN-ECE Timber Committee Secretariat to specialists working in areas dealing with NWFP production, processing and marketing, forest resource management planning and related supporting institutions. The following countries were represented: Albania, Armenia, Azerbaijan, Belarus, Finland, Hungary, Italy, Kyrgyzstan, Republic of Moldova, Romania, Ukraine, the United States and Uzbekistan.

This was the fourth in the series of workshops on "Marketing of Forest Products for Countries in Transition to Market Economies" organized under the auspices of the ECE Timber Committee in close cooperation with the Government of Finland and FAO Forestry Department.

The conclusions of the workshop indicated the need for better information on the potential of non-wood forest resources in relation to current use, better availability and access to market and marketing information, as well as training and networking on the management, processing and marketing of NWFPs. The participants suggested follow-up workshops and seminars focused on training on specific NWFP-related topics.

Mr Leo Lintu, Senior Forestry Officer (Forest Products Marketing), FAO, coorganized and provided secretariat assistance to the workshop. Mr Paul Vantomme, Forestry Officer (NWFP), FAO, also attended.

For more information, please contact:
Mr Edward Pepke, Forestry Officer, Liaison Office with the United Nations (Geneva) – LOGE, Palais des Nations, CH-1211 Geneva 10, Switzerland.
Fax: +41 22 9170065;
e-mail: fao-loge@fao.org

ETHNOBIOLOGY, BIOCULTURAL DIVERSITY, AND BENEFITS SHARING – 7TH INTERNATIONAL CONGRESS OF ETHNOBIOLOGY

ATHENS, GEORGIA, USA
23-27 OCTOBER 2000

The theme of the congress was "Earth in the next century" – specifically ethnobiology's role in maintaining biocultural diversity and ensuring equitable benefits sharing and open dialogue with traditional and indigenous research collaborators. This was the first time that the International Society of Ethnobiology (ISE) held its congress in the United States, expecting a strong representation of United States and Canadian indigenous groups, as well as traditional peoples from Mexico, Central and Latin America, and around the world.

For more information, please visit:
http://guallart.dac.uga.edu/ise

MEDICINAL HERBS: GROWING MEDICINE

CALIFORNIA, USA
24-25 OCTOBER 2000

Medicinal herb identification, cultivation and use were the topics covered during two days in northern California at the Occidental Arts & Ecology Center, a non-profit farm.

For more information, please contact:
Collective Heritage Institute, 901 West San Mateo Road, Suite L, Santa Fe, NM 87505, USA.
E-mail: info@bioneers.org;
www.bioneers.org

MANAGEMENT OF TREES FOR FARMLAND REHABILITATION AND DEVELOPMENT

EL OBEID, THE SUDAN
27 OCTOBER-4 NOVEMBER 2000

This workshop was organized by the Tropical Silviculture Unit (TSU) of the University of Helsinki, Finland, leading

RECENT EVENTS

Sudanese institutions, as well as the Technical Centre for Agricultural and Rural Cooperation (CTA, Wageningen, the Netherlands) and the International Foundation for Science (IFS, Stockholm, Sweden), in collaboration with other international organizations. The first part of the workshop was held at the gum arabic research station in El Obeid, North Kordofan State, the Sudan, and the second part consisted of visits to field sites.

The workshop discussed and compared the various agroforestry and forestry options available for dryland rehabilitation. It also highlighted the ongoing practical fieldwork and research on natural and planted trees in agricultural and forestry production systems in the Sudan.

For more information, please contact: Dr Olavi Luukkanen, Professor of Tropical Silviculture, Chairman, European Tropical Forest Research Network, PO Box 28 (Koetilantie 3, Viikki), FI-00014 University of Helsinki, Finland.
Fax +358 9 19158646;
e-mail: olavi.luukkanen@helsinki.fi;
http://honeybee.helsinki.fi/tropic

BIODIVERSITY 2000 KUCHING

KUCHING, MALAYSIA
1-3 NOVEMBER 2000

The conference was organized by the Sarawak Biodiversity Centre (SBC), the Sarawak Development Institute and the Ministry of Science, Technology and Environment, Malaysia. One of the meeting's main objectives was to take stock of the current status of biodiversity at the global and regional levels, and to review the progress and constraints in the implementation of the Convention on Biological Diversity.

For more information, please contact: Mr Eric Sim K.Y., Conference Coordinator, Sarawak Development Institute, Rumah Laksamana Muda, Jalan Rodway, 93000 Kuching, Sarawak, Malaysia.
Fax: +60 82 412799;
e-mail: sdi@po.jaring.my;
www.sdi.com.my

WHOLE HEALTH RETAIL STRATEGIES CONFERENCE

BROOMFIELD, COLORADO, USA
3-6 NOVEMBER 2000

Retail pharmacy and supermarket executives, manufacturers and distributors gathered to learn about what is on the leading edge in store design, brand development, organic foods, consumer-buying patterns and Whole Health on line, among other topics.

For more information, please visit: www.wholehealthstrategies.com

TREES FOR ARID LAND

BEER SHEVA, ISRAEL
6-16 NOVEMBER 2000

This workshop was organized by the International Programme for Arid Land Crops (IPALAC).

The objectives were to: introduce to a target group of representatives of grassroots organizations and other non-governmental organizations (NGOs) the work of various Israeli institutions in the field of tree planting and use in arid lands; and share tree planting experiences from African drylands among participants.

The workshop was a combination of lectures, field trips and presentations by participants. It was attended by 24 people representing NGOs and government institutions from Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Namibia, Senegal, Uganda, Zambia, India and Nepal, as well as four international NGOs (Africare, World Church Services, Jean Paul II Foundation and World Vision International). Each of the participants made presentations on their activities in relation to specific aspects of promotion of tree planting and use in arid lands. Ms Laura Russo, Forestry Officer (NWFP) represented FAO.

For more information, please contact: Mr Arnie Schlissel, Administrative Coordinator, IPALAC.
E-mail: ipalac@bgumail.bgu.ac.il

INTERNATIONAL TRAINING PROGRAMME ON SUSTAINABLE NTFP MANAGEMENT FOR RURAL DEVELOPMENT

MADHYA PRADESH AND WEST BENGAL, INDIA
6-24 NOVEMBER 2000

The International Training Programme on Sustainable NTFP Management for Rural Development was organized in India by the International Centre for Community Forestry (ICCF) of the Indian Institute of Forest Management (IIFM) in collaboration with the Rural Development Centre of the Indian Institute of Technology (IIT). It was conducted in the field sites of Madhya Pradesh (the richest state in India in terms of forests and tribals) and in West Bengal.

The course provided ample opportunities for the participants to have direct interaction with NTFP collectors, users, processors and marketers.

For more information, please contact: Dr Ram Prasad, Indian Institute of Forest Management, Nehru Nagar, Post Box No. 357, Bhopal 462003, M.P., India.
Fax: +91 0755 772878;
e-mail: ramprasad@iifm.org

RECENT EVENTS

NON-TIMBER FOREST PRODUCT (NTFP) WORKSHOP

OAXACA, MEXICO
7 NOVEMBER 2000

As part of the events leading up to the Forest Stewardship Council (FSC) Annual Conference, Falls Brook Centre hosted a one-day Non-Timber Forest Product (NTFP) Workshop. Among the issues discussed were recent developments in NTFP certification, how to ensure adequate assessment of NTFPs during certification, and the next steps for developing certification mechanisms within the FSC and other certification systems.

The summary report is now available in both English and Spanish.

For more information, please contact:
Parick Mallet, Falls Brook Centre,
125 South Knowlesville Road,
Knowlesville, New Brunswick
E7L 1B1, Canada.
Fax: +1 506 375 4221;
e-mail: pmallet@web.net;
www.fallsbrookcentre.ca/

INTERNATIONAL SEMINAR ON VALUATION OF FOREST GOODS AND SERVICES

OPOCNO, EAST BOHEMIA, CZECH REPUBLIC
18-22 NOVEMBER 2000

In line with the work programme of the Ministerial Conference on the Protection of Forests in Europe (MCPFE), the aims of the seminar were the clarification of the various aspects related to non-marketed goods and services (*inter alia* on biodiversity valuation); discussion on positive externalities of forests; non-market social services, etc.

For more information, please contact:
Mr Karel Vancura,
National Coordinator of MCPFE,
Ministry of Agriculture, Forestry Development Department, Tesnov 17,
117 05 Praha 1, Czech Republic.
Fax: +420 1 2181 2357;
e-mail: vancura@mze.cz

INTERNATIONAL IUFRO SEMINAR ON INTEGRATED MANAGEMENT OF NEOTROPICAL MOIST FORESTS BY THE INDUSTRY AND COMMUNITIES

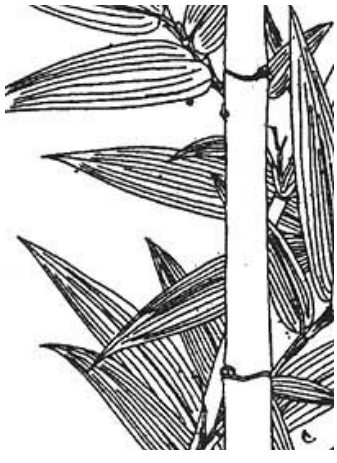
BELÉM, BRAZIL
4-7 DECEMBER 2000

A seminar was organized by IUFRO on the integrated management of neotropical moist forests by the industry and communities: applying research results; involving stakeholders and defining public policies.

For more information, please contact:
Dr Natalino Silva,
Brazilian Agricultural Research Corporation, CP 48,
CEP 66240 Belém, Pará, Brazil.
Fax: +55 91 2269845;
e-mail: natalino@cpatu.embrapa.br; *or*
CIFOR Regional Office,
Embrapa Amazônia Oriental,
Travessa Enéas Pinheiro s/n,
CP 48, CEP 66095-100, Belém, Brazil.
E-mail: iufrobel@cpatu.embrapa.br

FAO EXPERT CONSULTATION ON RATTAN DEVELOPMENT

ROME, ITALY
5-7 DECEMBER 2000



For more information, please contact:
Mr Paul Vantomme, Forestry Officer (NWFP), Forest Products Division, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy.
E-mail: Paul.Vantomme@fao.org;
www.fao.org/forestry/fop/fopw/nwfp/nwfp-e.stm
[*Please see under Special Features for more information on this meeting.*]

SHARING LOCAL AND NATIONAL EXPERIENCE IN CONSERVATION OF MEDICINAL AND AROMATIC PLANTS IN SOUTH ASIA

POKHARA, NEPAL
21-23 JANUARY 2001

More than 55 research scientists, foresters, development workers, business people, traditional healers and academicians attended the workshop, from six South Asian and five European and North American countries.

For more information, please contact:
Madhav Karki, Regional Programme Coordinator,
Medicinal and Aromatic Plants Programme in Asia (MAPPA),
IDRC/SARO, 208 Jor Bah,
New Delhi 110003, India.
Fax: +91 11 462 2707;
e-mail: mappa@idrc.org.in;
mkarki@idrc.org.in; *or*
sbatra@idrc.org.in;
www.idrc.ca/saro

FINANCING SUSTAINABLE FOREST MANAGEMENT

OSLO, NORWAY
22-25 JANUARY 2001

This government-led initiative in support of the IPF/IFF and UNFF (United Nations Forum on Forests) was cosponsored by Brazil, Denmark, Malaysia, Norway, South Africa and the United Kingdom and organized by the Center for International Forestry Research (CIFOR). Seventy experts

RECENT EVENTS

from 40 countries, including representatives from the private sector, non-governmental organizations, financing institutions, international organizations and academia participated in the workshop. The workshop focused on the issues of attracting private capital in sustainable forest management, effectively utilizing available financial mechanisms and resources, and considering new mechanisms including a global forest fund. It also discussed the feasibility of the "investment promotion entity (IPE)" concept as recommended by the International Forum on Forests (IFF). The workshop report will be submitted to UNFF1.

The highlights of the workshop, papers presented and other information can be accessed from the CIFOR Web site. (*Source:* informal circular letter from the Secretariat of the United Nations Forum on Forests, February 2001.)

For more information, please contact: Mr Mahendra L. Joshi, Forestry Advisor, IFF Secretariat, Two UN Plaza, DC2-12th Floor, New York, NY 10017, USA.
Fax: +1 212 963 3463;
e-mail: joshi@un.org; *or*
Mr Mafa E. Chipeta, Deputy Director-General, CIFOR, PO Box 6596 JKPWB, Jakarta 10065, Indonesia.
Fax: +62 251 622 100;
e-mail: m.chipeta@cgiar;
www.cifor.cgiar.org/fsfm/index.htm

VIRTUALLY WILD GINSENG

NEW CASTLE, VA, USA
3 FEBRUARY 2001

The Wild Harvest Sector Workshop was offered by Syl Yunker of the Appalachian Ginseng Foundation. "Virtually wild" is Mr Yunker's method of spacing ginseng plants on the forest floor in a randomized fashion that imitates nature, thus inhibiting disease and preventing theft of the ginseng plants.

For more information, please contact: Ann Rogers, TAP, PO Box 2868, Roanoke, VA 24001, USA; or Mr A.L. Hammett.
E-mail: himal@vt.edu

DELHI SUSTAINABLE DEVELOPMENT SUMMIT

DELHI, INDIA
7-9 FEBRUARY 2001

The summit, which was subtitled "Poverty: the global challenge for governments, industry, scientists, and civil society", was hosted by the Tata Energy Research Institute (TERI).

For more information, please contact: Ms Sangeeta Singh, TERI, Darbari Seth Block, Habitat Place, Lodhi Road, New Delhi 110003, India.
Fax: +91 11 4682144/4682145;
e-mail: ssingh@teri.res.in;
www.teriin.org/dsds/index1.htm

INTERNATIONAL CONFERENCE ON INDIGENOUS INDIC TRADITIONS IN FORESTRY: LESSONS FOR CONTEMPORARY SUSTAINABLE FOREST MANAGEMENT

KHAJURAHO, INDIA
8-10 FEBRUARY 2001

The event was sponsored by the Infinity Foundation, United States, and organized by the International Network on Ethnoforestry and the Indian Institute of Forest Management, Bhopal, India.

For more information, please contact: Deep Narayan Pandey, Associate Professor, Indian Institute of Forest Management, Bhopal 462003, India.
Fax: +91 755 772878;
e-mail: deep@inef.org;
www.inef.org; www.iifm.org; *or*
http://education.vsnl.com/deep

FAO COMMITTEE ON FORESTRY (COFO) – FIFTEENTH SESSION

ROME, ITALY
12-16 MARCH 2001

Full documentation for COFO 2001 is available in all of the five working languages of FAO (Arabic, Chinese, English, French and Spanish) from the COFO Web site.

For more information, please contact: Becky Ortiz, Meetings Officer, Forest Programmes Coordination and Information Unit, Forestry Department, Office D-457, FAO,
Viale delle Terme di Caracalla, 00100 Rome, Italy.
Fax: +39 0657052151;
e-mail: becky.ortiz@fao.org;
COFO home page:
www.fao.org/forestry/fo/statbod/cofo/cofo-e.stm;
FAO Forestry home page:
www.fao.org/forestry

RECENT EVENTS

4TH SOUTH AND SOUTH EAST ASIAN COUNTRIES NON-TIMBER FOREST PRODUCTS NETWORK (SEANN) WORKSHOP

MANILA, THE PHILIPPINES
19-21 MARCH 2001

The workshop was organized by various Philippine institutions and the Centre of Minor Forest Products for Rural Development and Environmental Conservation (India).

For more information, please contact: Ramon A. Razal, Associate Professor and Director, Training Center for Tropical Resources and Ecosystems Sustainability, and Chair, Organizing Committee for the 4th SEANN Workshop, University of the Philippines Los Baños College of Forestry and Natural Resources, College, Laguna 4031, the Philippines.
E-mail: trees@laguna.net

ECONOMIC SUSTAINABILITY OF SMALL-SCALE FORESTRY

JOENSUU, FINLAND
20-26 MARCH 2001

The objective of this symposium, focusing on the economically sustainable management of small-scale forests, was to exchange information on actual research problems, ongoing research efforts and research results between the participants.

For more information, please contact: Dr Anssi Niskanen, European Forest Institute, Tonkatu 34, 80100 Joensuu, Finland.
Fax: +358 13 124 393;
e-mail: anssi_niskanen@efi.fi

INTERNATIONAL NEEM NETWORK WORKSHOP ON DATA ANALYSIS

JODHPUR, INDIA
21–25 MARCH 2001

The International Neem Network (INN) comprises 20 forestry institutions in Africa, South America, Asia and Europe, which have joined efforts towards gaining a better knowledge of neem (*Azadirachta indica*) cultivation, behaviour, adaptability and vigour, inside and outside the natural distribution range of the species. The network has facilitated the collection, exchange and handling of neem germplasm, and the establishment of international provenance trials under coordinated procedures. Trials established between 1995 and 1997 are now under observation, and preliminary results regarding the behaviour of various neem provenances, and their adaptability to local conditions, are becoming available from the surviving trials.

Azadirachta indica

It is now four to five years since the international provenance trials were established, and most of the trials have already been assessed more than once according to the common technical guidelines developed at the last meeting of the INN in Yangoon, Myanmar in 1997. The next step for the INN would be to propose assistance and coordination in processing the data that has been collected.

The purpose of the workshop held at the Arid Forest Research Institute, Jodhpur, India, was therefore to discuss analysis of the data: methodology, statistical analysis, results, interpretation, conclusions and publication.

For more information, please contact: Mr Pierre Sigaud, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy.
Fax: +39 0657055137;
e-mail: pierre.sigaud@fao.org; *or*
Dr C.J.S.K. Emmanuel, Arid Forest Research Institute (AFRI), PO Krishi Mandi, New Pali Road, Jodhpur, Rajasthan 342 005, India.
E-mail: cjske@eudoramail.com ●

FORTHCOMING EVENTS

ACOTANC-2001: 9TH AUSTRALASIAN CONFERENCE ON TREE AND NUT CROPS

PERTH, AUSTRALIA,
13-20 APRIL 2001

The conference theme will be "Tree crops: essential for the earth".

MiniAcs (half-day to three-day miniconferences on specialist topics) will be held from 14 to 16 April. Most will be organized in conjunction with Australian specialist groups. The following are among the topics expected to be covered: almonds; bush tucker (Australian native plant foods); cactus fruits; chestnuts; environmental integration of tree crops; permaculture etc.; hazelnuts; essences and industrial oils from perennial plants; macadamias; medicines from Australian plants; new approaches to traditional fruits; olives and other perennial plant oils; pecans; pistachios; propagation of tree crop plants; specialist and cabinet timbers; quandongs and sandalwood; tree crops for saline and arid lands; tropical fruits and nuts; unusual temperate fruits and nuts; and walnuts.

Prominent tree crop experts from major world regions (e.g. the United States, China, New Zealand, Chile, Israel, the Philippines, Brazil and Brunei) are expected to attend and participate in the MiniAcs – a chance for global exchange and update of information on vital topics.

For more information, please contact:
David Noël, Director, Tree Crops Centre,
Acotanc-2001 Conference Secretariat,
PO Box 27, Subiaco, WA 6008, Australia.
Fax +61 8 9388 1852;
e-mail: davidn@AOI.com.au;
www.AOI.com.au/acotanc

The International Network for Bamboo and Rattan (INBAR) is hosting several workshops in 2001:

March 2001. Using Bamboo and Rattan to Reduce Poverty and Secure Livelihood. United Republic of Tanzania.
Contact: Dr I.V. Ramanuja Rao; e-mail: rrao@inbar.org.cn

May 2001. Bamboo Housing Training Workshop. Mumbai, India.
Contact: Dr I.V. Ramanuja Rao; e-mail: rrao@inbar.org.cn

July 2001. The Role of Bamboo in Disaster Avoidance. Ecuador.
Contact: Mr Lou Yiping; e-mail: yplou@inbar.org.cn

November 2001. Resources, Trade and Market Structure for Bamboo and Rattan. Delhi, India.
Contact: Dr Maxim Lobovikov; e-mail: mlobovikov@inbar.org.cn

November 2001. VII International Bamboo Workshop and Congress. India.
Contact: Dr I.V. Ramanuja Rao; e-mail: rrao@inbar.org.cn

For more information, please contact:
INBAR, Branch Box 155, PO Box 9799,
Beijing 100101, China.
Fax: +86 10 6495 6962/83;
e-mail: info@inbar.org.cn;
www.inbar.org.sg

16TH COMMONWEALTH FORESTRY CONFERENCE

FREMANTLE, PERTH, WESTERN AUSTRALIA
18-25 APRIL 2001

For more information, please contact:
Commonwealth Forestry Association,
Oxford Forestry Institute,
South Parks Road,
Oxford OX1 3RB, UK.
Fax: +44 1865 275074;
e-mail: cfa@plants.ox.ac.uk

URBAN GREEN SPACE IN THE 21ST CENTURY – URBAN GREENING AS A DEVELOPMENT TOOL

ST PETERSBURG, RUSSIAN FEDERATION
28-31 MAY 2001

For more information, please contact:
Dr Irina Melnichuk.
E-mail: Melnichuk@peterlink.ru

BUILDING BRIDGES WITH TRADITIONAL KNOWLEDGE

HONOLULU, HAWAII, USA
28 MAY-3 JUNE 2001

Conference themes cover:
Ethnobiological research
Cultural diversity and property rights
Biodiversity and development
Traditional and biological conservation.

For more information, please contact:
Building Bridges Conference, Honolulu,
Hawaii, USA.
Fax: +1 808 956 3923;
e-mail: bbt2@hawaii.edu

APPALACHIAN HERB GATHERING (GROWING, CONSERVING AND USING OUR NATIVE PLANTS)

OHIO, USA
23-24 JUNE 2001

The Rural Action Sustainable Forestry Program is planning a conference, in

FORTHCOMING EVENTS

partnership with the National Center for the Preservation of Medicinal Herbs and United Plant Savers, that will be of benefit to landowners who are concerned with becoming economically sustainable on their woodlands while at the same time protecting the environment. This is mainly accomplished through the use of special forest products (also known as non-timber forest products).

The topics to be covered include:

- Growing forest and field herbs
- Wild-simulated ginseng
- Using medicinal herbs.

For more information, please contact:
Cynthia Brunty, Rural Action Forestry Program.
Fax: +1 740 767 4938;
e-mail: cynthiab@ruralaction.org

WORKSHOP ON THE ROLE OF BAMBOO IN DISASTER AVOIDANCE

ECUADOR
30 JULY-3 AUGUST 2001

The workshop will be jointly sponsored by the International Network for Bamboo and Rattan (INBAR) and the Government of Ecuador and will be held in conjunction with the International Bamboo Fair.

An international list of speakers – including researchers, administrators, policy-makers, resource managers, material and equipment suppliers, manufacturers, and bamboo land and house users – will discuss the role and potential uses and the R&D activities required to enhance and promote the role of bamboo.

At the same time, the International Bamboo Fair will give resource owners, producers, product manufacturers and suppliers and business people an opportunity to exhibit their products and promote marketing for their bamboo products and services.

The fair will feature a wide range of bamboo product exhibits and business opportunities and provide services for trade talks for people from different parts of the world.

The workshop will feature technical and poster presentations, discussions on:

- Biological and ecological characteristics of bamboo forest and products in disaster avoidance.
- Bamboo to rehabilitate degraded land.
- Use of bamboo to sustain riverbanks and erosion control slope.
- Characteristics of wind-resistance and earthquake-resistance bamboo housing.
- Development of new structure of disaster-resistance housing.

For more information, please contact:
Mr Lou Yiping, INBAR, Branch Box 155, PO Box 9799, Beijing 100101, China.
Fax: +86 10 64956962;
e-mail: yplou@inbar.org.cn;
www.inbar.org.cn

INTERNATIONAL SEMINAR ON PROTECTED AREA MANAGEMENT

MONTANA, USA
9-25 AUGUST 2001

This seminar is hosted by the University of Montana in collaboration with Colorado State University and the University of Idaho. Participants will discuss and see examples of innovative approaches to critical protected area management issues, including resource assessment and planning tools, techniques to address visitor interests and impacts, and mechanisms to reconcile resource protection with development pressures.

For further information on this seminar, please contact:
Dr James A. Burchfield, University of Montana, Missoula, MT 59812-0002, USA.
E-mail: jburch@forestry.umt.edu;
www.fs.fed.us/global/is/ispam/welcome.htm

17TH INTERNATIONAL SEMINAR ON FOREST AND NATURAL RESOURCES ADMINISTRATION AND MANAGEMENT

COLORADO, USA
26 AUGUST-13 SEPTEMBER 2001

The seminar was hosted by Colorado State University's College of Natural Resources.

In the past, more than 405 managers from 110 nations have attended this seminar, which focuses on strategies and methods to develop, manage and conserve natural resources for the sustained delivery of goods and services to meet the full range of human needs.

For more information, please contact:
Ms Ann Keith.
E-mail: IFS@cnr.colostate.edu;
www.fs.fed.us/global/is/isfam/welcome.htm

CONSERVACIÓN DE LA BIODIVERSIDAD EN LOS ANDES Y LA AMAZONIA – REUNIENDO A CIENTÍFICOS, ONGS E INDÍGENAS

CUZCO, PERÚ
24-28 DE SEPTIEMBRE DE 2001

Organizado por:
Centro Bartolomé de Las Casas – CBC, Cuzco, Perú;
Fundación Científica San Francisco – FCSF, Del Mar (Estados Unidos), Loja (Ecuador), Munich (Alemania);
Red Internacional para la Conservación de la Biodiversidad y la Diversidad Cultural – INKA, Munich, Alemania.

Objetivos

El congreso internacional e interdisciplinario tratará de la conservación de la biodiversidad en los Andes y la Amazonia con énfasis en el Ecuador, el Perú y Bolivia, países albergan una enorme riqueza cultural y biológica. Sin embargo, todos los diversos ecosistemas, desde los bosques

FORTHCOMING EVENTS

húmedos de la cuenca amazónica hasta los bosques andinos, se encuentran amenazados. Su destrucción continúa a pesar de que ya existe suficiente conocimiento acerca de la importancia y el valor de esos ecosistemas.

El congreso ofrece la posibilidad de reunir los diferentes actores involucrados en la conservación de la biodiversidad: científicos, ONGs, poblaciones locales y grupos indígenas. El intercambio de conocimientos y el debate sobre las deficiencias actuales que muestra la cooperación entre ciencia, ONGs y organizaciones indígenas, podría facilitar el desarrollo de estrategias comunes más efectivas para la conservación de la naturaleza y el manejo sostenible de los recursos naturales.

Sesiones del congreso

Son seis los temas de las sesiones principales:

1. diversidad de especies en las regiones tropicales, con énfasis en el Ecuador, el Perú y Bolivia;
2. biodiversidad y los servicios de los ecosistemas;
3. uso sostenible de recursos naturales;
4. uso y valor de los productos no madereros;
5. manejo de parques naturales y áreas protegidas;
6. oportunidades y riesgos del ecoturismo en comunidades indígenas.

Para más información, dirigirse a: Secretaría del Congreso, Sigrun Lang, INKA e.V., Gravelottestr., 6, 81667 Munich, Alemania. Fax: +49 89 45911920; correo electrónico: Sigrun.Lange@inka-ev.de; www.inka-ev.de/congress2001.htm; *o* a: Eliana Rivera, Centro Bartolomé de Las Casas, Av. Tullumayo 465, Cuzco, Perú. Fax: +51 84 241319; correo electrónico: erivera@apu.cbc.org.pe; www.cbc.org.pe

Fundación Espavé

Oenocarpus bataua

INTERNATIONAL CONFERENCE ON ADVANCING COMMUNITY FORESTRY: INNOVATIONS AND SCALING UP EXPERIENCES

CHIANG MAI, THAILAND
25-28 SEPTEMBER 2001

The conference is being organized by the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC), FAO Regional Office for Asia and the Pacific (FAO/RAP), the International Center for Research in Agroforestry (ICRAF), the World Conservation Union (IUCN) and the Sustainable Management of Resources in the Lower Mekong Basin Project (SMRP) MRC/GTZ.

Diverse forms of community-based forest management have been developed throughout the Asian region and some countries have already institutionalized such systems through legislation or other enabling forms. The conference will examine critically the emerging policy, institutional and local innovations that are driving community forestry forwards and provide an excellent opportunity to identify and share lessons learned and challenges in community forestry.

For more information, please contact: Dr Somsak Sukwong, Executive Director, Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC), Kasetsart University, PO Box 1111, Bangkok 10903, Thailand. Fax: +662 561 4880; e-mail: ftcsss@ku.ac.th; www.recoftc.org

SÉMINAIRE INTERNATIONAL – FORESTRY MEETS THE PUBLIC

RÜTTIHUBELBAD, SUISSE
8-11 OCTOBRE 2001

Le séminaire est organisé par le Comité mixte FAO/CEE/OIT de la technologie, de la gestion et de la formation forestières, avec la participation de l'UIIRF.

Le séminaire vise à répondre aux questions suivantes:
Que signifient relations publiques et éducation en matière d'environnement dans la foresterie?
Sont-elles nécessaires?
Quels sont les groupes cibles?
Quel message la foresterie tente-t-elle de faire passer?
Qui sont les "messagers", quelles institutions sont impliquées?
Quels sont les moyens et les médias qui peuvent faire passer efficacement ces messages?
Quelle est l'efficacité de cette communication et comment peut-on en évaluer l'impact?
Quelles sont les carences et comment peut-on améliorer les liens entre relations publiques et éducation en matière d'environnement dans la foresterie?

Pour plus de détails, veuillez contacter: Martin Büchel, Chef du secteur des bases et formation, Direction fédérale des forêts, CH-3003 Berne, Suisse. Télécopie: +41 31 324 7866; mél.: martin.buechel@buwal.admin.ch

VII WORLD INTERNATIONAL BAMBOO CONGRESS

DEHRA DUN, INDIA
12-17 NOVEMBER 2001

The conference is a triennial gathering of representatives from 37 countries. Sponsored and organized by a cooperation of bamboo peoples, the name of this conference incorporates both the International Bamboo

FORTHCOMING EVENTS

Association (IBA) and the International Network of Bamboo and Rattan (INBAR) events.

Bamboo forests are a main component of Asian and South American upland watersheds.

Currently planners are trying to gauge worldwide interest in bamboo conservation issues.

A basic outline of the proposed meeting programme is listed on the International Bamboo Association Web site (www.bamboo.org.au/iba/).

For more information, please contact:
V. Ramanuja Rao, INBAR Programs Coordinator.
E-mail: rrao@inbar.int; *or*
Susanne Lucas, IBA Representative.
E-mail: Slucas0033@aol.com

IUFRO CONFERENCE – COLLECTING AND ANALYSING INFORMATION FOR SUSTAINABLE FOREST MANAGEMENT AND BIODIVERSITY MONITORING WITH SPECIAL REFERENCE TO MEDITERRANEAN ECOSYSTEMS

PALERMO, SICILY, ITALY
4-6 DECEMBER 2001

The conference is intended to give participants hands-on workshop exchanges and experiences about inventory/monitoring problems and potential. Special (but not exclusive) reference will be made to Mediterranean forest and other wooded ecosystems, and techniques such as remote sensing and spatial analysis in the GIS environment. In Mediterranean countries, reliable and internationally comparable information on forest health and protection, wildfires and biodiversity are largely missing or unsatisfactory. This state is in contrast with the wood production-oriented information characteristically provided by current forest inventory and monitoring procedures.

In the light of these important issues, the major objectives of this conference will be to:

- review the state of the art of forest inventory data and methodology, with special reference to Mediterranean ecosystems, remote sensing and spatial analysis;
- review inventory/monitoring techniques relevant to high forest landscape heterogeneity and forthcoming technologies;
- review mensuration and information technology advances for distinctive issues such as monitoring wildfires, biomass estimation in coppices and dwarf maquis stands and grazing pressure on forests;
- discuss the possible connecting role of landscape ecology and the inventory implementation of habitat classification approaches with a view to biodiversity assessment;
- facilitate cooperation between Mediterranean countries, enhancing externalities perspective development as the greater contribution to natural and seminatural areas management in such environments; and
- produce a summary of discussions and conclusions to be included in the conference proceedings.

For more information, please contact:
Dr Giuseppe Garfì, Istituto di Coltivazioni Arboree, Università degli Studi di Palermo, Viale delle Scienze 11, 90128 Palermo, Italy.
Fax +39 091 6521098;
e-mail: agrofor@unipa.it;
www.geolab.unifi.it/iufro_conference

ALTERNATIVE WAYS TO COMBAT DESERTIFICATION: CONNECTING COMMUNITY ACTION WITH SCIENCE AND COMMON SENSE

CAPE TOWN, SOUTH AFRICA/RURAL COMMUNITIES AND GOBABEB, NAMIBIA
8-20 APRIL 2002

An international symposium, rural community interaction and workshop.

For more information, please visit the Internet site:
http://des2002.az.blm.gov/homepage.htm;
or contact:
Ms Roben Penny, Woodbine, Essex Road, Kalk Bay, 7975 Cape Town, South Africa.
Tel./Fax: +27 21 788 1285;
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Ms Mary Seely, Desert Research Foundation of Namibia, PO Box 20232, Windhoek, Namibia.
Fax: +264 61 230 172;
e-mail: mseely@drfn.org.na; *or*
Mr Beaumont C. McClure, Special Assistant for International Programs, Bureau of Land Management, Arizona State Office, 222 North Central Avenue, Phoenix, Arizona 85004, USA.
Fax: +1 602 417 9398;
e-mail: beau_mcclure@blm.gov ●

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Bennett, E.L. & Robinson, J.G. 2000. *Hunting of wildlife in tropical forests: implications for biodiversity and forest peoples.* Biodiversity Series-Impact Studies No. 76. Washington, DC, World Bank.

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Wunder, S. 2000. Ecotourism and economic incentives – an empirical approach. *Ecological Economics*, 32(3): 465-479.

NEW PUBLICATIONS PLANNED IN THE FAO NWFP SERIES

Wild edible fungi for food security: options for sustainable use and development

Wild edible fungi (WEF) are an important component in diets, as well as being a source of income, for many people in developing countries worldwide. Information on wild edible mushroom trade and production is already included in two publications in the NWFP series (*NWFP from conifers*, 1998 and *NWFP from temperate broadleaved trees* [in preparation]).

The new publication, which is part of a series of efforts to document the role of NWFPs in food security, aims to gather in one volume the scattered information on the uses and prospects for development of WEF worldwide. It will include aspects such as management and production of WEF in forest ecosystems, the role of WEF in rural livelihoods, and markets. It will draw on experiences from many countries and regions in the world.

By disseminating this information, it is expected that the attention of forestry technicians, nutritionists, natural resource planners and policy-makers will be drawn to the links between this important category of NWFPs and food security.

The study is scheduled to be completed by the end of September 2001.

For more information, please contact: laura.russo@fao.org

Resource assessment of non-wood forest products: experience and biometric principles

This publication is intended as a source of advice for practitioners considering inventory of non-wood forest product (NWFP) resources. Through review and analysis of experience it provides information:

- on the range of approaches used and developed to date and their biometric adequacy;
- to help the practitioner decide when biometric methods are necessary;
- to guide the design and selection of appropriate biometric methods for resource quantification in different situations and for different products.

[*This publication is based on the results of a workshop held in Rome in May 2000. See under Recent Events.*]

For more information, please contact: laura.russo@fao.org

NWFP from temperate broadleaved trees

The objective of this paper is to provide a global review of the non-wood products and services provided by trees found in temperate broadleaf forests. The world's temperate broadleaf forests provide a vast array of products that are beneficial to humans. Temperate broadleaved trees are an important source of non-wood forest products (NWFP), some of which have been used by humans since prehistoric times.

Included in this publication is the range of NWFPs that this group of trees provides, species that are important sources of NWFP and places where these products are harvested. The products described are organized according to the part of the tree from which they are obtained – entire trees, foliage and flowers, bark, resins, fruits, nuts and organisms closely associated with temperate broadleaved trees. Where possible, data on levels of production and international trade are presented. Problems associated with the sustainable management of these products and compatibility or conflicts with other land uses are also presented. Both contemporary and historical or traditional uses of NWFPs from temperate broadleaved trees are discussed. Emphasis is placed on those species from which NWFPs are harvested from either natural or planted forests as opposed to trees planted in orchards (e.g. pome or stone fruits, olives and certain nuts) and are

PUBLICATIONS OF INTEREST

AGROFORESTRY PARKLANDS IN SUB-SAHARAN AFRICA
J.-M. Boffa. 1999. Rome, F AO. 230 pp.

Agroforestry parklands, traditional agroforestry systems in the Sudano-Sahelian region, are among the most widespread agroforestry systems in African countries south of the Sahara. This FAO Conservation Guide reviews the status of knowledge of these systems and synthesizes the experiences relating to the biophysical, socio-economic and policy aspects of their management. It identifies crucial research needs and promising avenues for further promoting their management, conservation and development. It is expected that future cooperative action will contribute to the sustainability of these agroforestry parklands and to their enhanced role in the livelihoods of rural populations in sub-Saharan Africa.

The French version is also available.

For copies, please contact:
FAO Distribution and Sales (Distribution-Group@fao.org)
For more information, please contact:
Ms Michelle Gauthier, Forestry Officer, FAO Forestry Department, Rome, Italy.
Fax: +39 0657055618;
e-mail: michelle.gautheir@fao.org

considered to be important agricultural crops.

This information is presented to assist in identifying opportunities for management and production of NWFPs as an integral part of economic development and poverty alleviation initiatives in economically depressed regions of the world where trees are an important element in the ecology, economics and human social structure. In addition, this information is also designed to help identify situations where special management of forests and woodlands may be appropriate to maintain or enhance the productivity of traditional or contemporary NWFP or to develop a potentially beneficial new resource.

For more information, please contact:
Paul.Vantomme@fao.org

OTHER RECENT PUBLICATIONS

Indigenous knowledge development in Bangladesh

This impressive volume, edited by Professor Paul Sillitoe, is an important contribution to the fields of both anthropology and development. It is particularly useful for all those who are directly or indirectly concerned with the problems associated with development in Bangladesh, including social scientists, planners, policy-makers, extension workers and government and non-government workers.

Divided into five sections relating to development issues, agroforestry, plant resources, fish resources and methodological issues, the book contains 24 valuable articles, including an introduction and conclusion, and brings together a range of disciplines from anthropology and sociology to natural resource sciences and development studies. The majority of the papers were originally presented in the first workshop on The State of Indigenous Knowledge in Bangladesh held in Dhaka, Bangladesh in May 1998, by the Bangladesh Resource Centre for Indigenous Knowledge (BARCIK) in association with the IK Research Project of Durham University, United Kingdom.

The book is published by the University Press Limited, Dhaka, Bangladesh.

For more information, please contact:
Mr Mohiuddin Ahmed, The University Press Limited, Red Crescent Building, 114 Motijheel C/A, Dhaka-1000, Bangladesh.
Fax: +880 956 5443;
e-mail: upl@bttb.net;
www.uplbooks.com

Enterprise development for natural products

The Asia Network for Small-scale Agricultural Bioresources (ANSAB) has recently published a manual entitled *Enterprise development for natural products*, which promotes a strategy for natural product enterprise design that contributes to conserve biodiversity and promote social equity. What does the manual provide? A framework of enterprise development planning in natural products in general and the non-timber forest products (NTFP) subsector in particular, as well as practical tools for addressing the issues of marketing, resource assessment, business fundamentals and policy environment.

For more information, please contact:
Business Service Center,
Asia Network for Small-scale Agricultural Bioresources (ANSAB),
PO Box 11035, Kathmandu, Nepal.
Fax: +977 1 487916;
e-mail: ansab@mos.com.np
[*Please see under Country Compass for more information on ANSAB.*]

PUBLICATIONS OF INTEREST

USE AND POTENTIAL OF WILD PLANTS IN FARM HOUSEHOLDS
FAO Farm Systems Management Series, No. 15, by Professor Vernon Heywood, Centre for Plant Sciences and Systematics, School of Plant Sciences, University of Reading, Reading, UK.

This publication demonstrates the important contribution of wild plants to the life of rural households, particularly in developing countries. The enhanced use of these resources would increase income and food security, assist development through small-scale investment, improve the efficiency and profitability of farm household labour use and help eliminate or alleviate poverty. The role of wild plants, especially in rural farm households, is, however, very often ignored or underestimated by planners, policy-makers, aid and development agencies, banks, extension services, economists, agronomists, genetic resource organizations and others.

Wild plants are rarely exploited as a main occupation or source of income but from a component of the many activities that make up the economy of farm households. In the planning of farming systems development projects for rural households, the role of wild plants needs to be assessed as far as possible.

The Farm Management and Production Economics Service of FAO's Agriculture Department commissioned this publication in order to raise awareness of the role of wild plants in many farming systems, providing examples from a range of different systems around the world. The publication describes the major areas in which plants contribute to farm households' incomes and the welfare of the local people and assesses the potential for future development. The book also points out the social, economic, legal and institutional constraints to enhance the use of wild plants and proposes ways in which these constraints may be overcome. (*Source:* Extracted from the Preface.)

Ms Michelle Gauthier, Forestry Officer, FAO Forestry Department, Rome, Italy.
Fax: +39 0657055618;
e-mail: michelle.gautheir@fao.org

Natural chemical substances in Australian plants (Aus, 2000). 300 pp. Pb.
This is a reprint of a rare compilation of chemicals produced in Australian plants, drawn from a comprehensive search of literature to 1954.

Listed by species, good indexes of chemical names and plant genera.

For more information or to order a copy, please contact:
Granny Smith's Bookshop, PO Box 27, Subiaco, WA 6008, Australia.
www.AOI.com.au/granny

Secondary forest trees of Kalimantan, Indonesia. A manual of 300 species. 2000. Edited by P.J.A. Keßler. Tropenbos-Kalimantan Series No. 3. MOFEC-Tropenbos-Kalimantan Project, Wanariset Samboja, Indonesia.

The manual is one of the results of a cooperative project of the Indonesian Ministry of Forestry and Estate Crops (MOFEC) and the Tropenbos Foundation in Wageningen, known as the multidisciplinary International MOFEC Tropenbos-Kalimantan Project. The project is located at Samboja in East Kalimantan and has been incorporated into the Wanariset field station of the Samarinda Forest Research Institute. The project aims to provide methods and techniques for ensuring the conservation, rehabilitation and sustainable use of mixed dipterocarp forests. It focuses on the sustainable use of forests for timber and non-timber forest products, conservation management, and rehabilitation of degraded areas.

For more information, please contact:
The Tropenbos Foundation, PB 232, Wageningen 6700 AE, the Netherlands.
Fax: +31 317 423024;
e-mail: tropenbos@tropenbos.agro.nl;
www.tropenbos.nl

The miracle tree – Moringa oleifera*: natural nutrition for the tropics*
Moringa oleifera is a tree with a multitude of attributes. A recent book prepared by the Church World Service (CWS) discusses only a few of its uses and potentials: those relating to its capacity to ensure good health among people in the tropics and subtropics through the high nutritional content of its edible leaves and pods, and through the use of its seeds to purify drinking water. Charts, recipes and pamphlets are included so that the book can serve as a training manual for health workers.

A result of extensive research, this book also relates the practical results of a pilot project, a collaborative effort between CWS and the Senegalese development organization AGADA (Agir autrement pour le développement en Afrique), to test the theory that the products of the moringa tree can prevent or cure malnutrition among children and women of child-bearing age.

For more information, please contact: Mr Lowell J. Fuglie, Regional Representative, West Africa Regional Office, Church World Service, 12 rue Félix Faure, BP 3822, Dakar, Senegal ●

Take time to read, it is the foundation of wisdom.

Old English prayer

100

WEB SITES

African Biological Diversity and Indigenous Knowledge
A new mailing list "africadiv" has been launched by the Indigenous Knowledge and Biodiversity Working Group at Environment Liaison Centre International (ELCI) in collaboration with Nuffic-CIRAN (Centre for International Research and Advisory Networks).

This mailing list is devoted specifically to the sustainable use of biological diversity and indigenous knowledge in Africa.

The loss of traditional knowledge on resource use is one of the central problems of our times because the loss of knowledge ultimately contributes to the loss of biological diversity, including the plants for food and plants used to make medicines.

The purpose of this discussion list is:

- to promote knowledge on biodiversity and indigenous knowledge in Africa;
- invite the participation of natural and social scientists, governmental and non-governmental organizations, and any other entity with an interest in biodiversity and indigenous knowledge issues; and
- share research materials, event announcements, funding, job and training opportunities, relevant newsletters, and news in general regarding the sustainable use and conservation of biodiversity and indigenous knowledge.

The moderators want this to be an opportunity for a frank exchange of differing views and experiences, in a way that challenges, stimulates and enlightens you. They expect this exchange will help stakeholders to enhance further the sustainable use and conservation of biodiversity and indigenous knowledge for sustainable development.

If you are interested and want to join this mailing list, send a message to:

lyris@lyris.nuffic.nl, and write SUBSCRIBE AFRICADIV [YOURFIRSTNAME] [YOURLASTNAME] in the body of the message, leaving the subject blank.

Arab Net
This Web site provides access to numerous links and information and is the resource for the Arab world in the Near East and North Africa.
www.arab.net

Amazonlife
An interesting Web site covering all aspects of the Amazon.
www.amazonlife.com/Defaultling.asp?pLng=En

Bamboo Bambus Zhuzi
www.geocities.com/zhuzi.geo/

Biodiversity Support Program
This new resource offers visitors quick access to an overview of BSP's many projects, both regional and cross-cutting. An electronic library of reports, books, brochures and other publications is also available.
www.bsponline.org/

Mexican Network of Medicinal Plants
Please visit the very informative Web site (in Spanish) of the Mexican Network of Medicinal Plants (Red Mexicana de Plantas Medicinales). The Network has many activities and promotes the ecological conservation and sustainable management of medicinal plants.
www.geocities.com/florbach/red.htm
[*Please see under Country Compass for more information on this network*.]

Boreal Forest Research Network
Canada's Yukon Territory's comprehensive Web site for forestry information.
www.bfrn.net

Climate change and forestry listserv – CLIM-FO-L
FAO's Forest Products Division has started an electronic mailing list on climate change and forestry to share current information and experiences in this area of growing importance among interested parties. It will be open to anyone who is interested. However, it is essential for the success of this initiative to have a wide and active participation by experts and practitioners in both fields – forestry and climate change.

We welcome the following type of information relevant to climate change and forestry:

- publications, documents, and speeches;
- Web sites;
- announcements of events and job opportunities;
- developments of climate change negotiations; and
- opinions, comments and enquiries.

Your contributions are essential in making this a lively forum for exchange of up-to-date information on this issue of growing importance. Please send whatever you feel is pertinent and relevant to this topic to: CLIM-FO-L@mailserv.fao.org

To join the list, please send an e-mail to: mailserv@mailserv.fao.org, and write SUBSCRIBE CLIM-FO-L in the body of the message, leaving the subject blank.

For more information, please contact:
Ms Suzuko Tanaka, Associate Professional Officer, Forest Products Division, Forestry Department, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy.
Fax: +39 0657055618;
e-mail: suzuko.tanaka@fao.org

WEB SITES

Forest Energy Forum Web site

The Forest Energy Forum Web site has been improved. Now you can download faster and find more useful information including:

- updated information on FAO projects, publications and activities;
- the latest issue of *Forest Energy Forum*; and
- an increased number of links on bioenergy, renewable energy and climate change.

www.fao.org/forestry/fop/fopw/energy/cont-e.stm

Forest Policy and Environment Group's new Web site

The Overseas Development Institute's (ODI) Forest Policy and Environment Group's (FPEG) new Web site contains a wealth of information on forestry-related issues. It includes the latest research papers by FPEG Research Fellows, as well as a searchable database of all of FPEG's Rural Development Forestry Network (RDFN) papers, which are published in English, French and Spanish.

The site is still expanding, and will soon provide access to much of the ODI library's forestry grey literature collection. Together, the RDFN papers and the grey literature archive represent a vast store of information on the social and economic aspects of forestry in the last 15 years. The materials chart the development of people-oriented forestry from both the donor and the host country perspective, combining project-level experience and policy-level insights in all regions of the world (but with a clear focus on developing countries).

The Web site also has an extensive links section with descriptions of many of the Internet's most important forestry Web sites, as well as an on-line noticeboard.

www.odifpeg.org.uk

Network 2002

The United Nations Environment & Development Forum, now offers a free monthly newsletter, "Network 2002". This multi-stakeholder publication is being produced in preparation for Earth Summit 2002 - the ten year review of the first Summit in Rio in 1992.

The 2002 Summit will address and set the Sustainable Development agenda for the 21st Century, covering a wide range of environment, development and economic issues. Network 2002 will monitor progress and engage all groups, processes and issues over the next two years in the run-up to the Summit and beyond.

Network 2002 is circulated free each month by e-mail in Acrobat® pdf format and text format.
To subscribe, simply e-mail: network2002-subscribe@egroups.com; alternatively, register on line at:
www.earthsummit2002.org

NTFP Enterprise Development list serve

The NTFP Enterprise Development list serve is now under way. It will be moderated from Nepal by the Netherlands Development Organization (SNV) and Asia Network for Small Scale Bioresources (ANSAB).

For more information, please contact:
Kenneth Nicholson, Non-Timber Forest Products Enterprise Development Specialist, SNV-Nepal (Netherlands Development Organization), PO Box 1966, Kathmandu, Nepal.
Fax: +977 1 523155;
e-mail: kennic@mos.com.np; *or*
Forests, Trees and People Network, SLU Kontakt/Research Information Centre, PO Box 7034, SE-750 07 Uppsala, Sweden.
Fax: +46 18 671980;
www-trees.slu.se

POLEX

Forest Policy Experts (POLEX) is an electronic list serve managed by the Center for International Forestry Research (CIFOR) in Bogor, Indonesia. Its objective is to keep key opinion leaders in the area of forestry policy informed about recent relevant policy research results by CIFOR and others. The list forms part of CIFOR's programme on the "causes of deforestation, forest degradation, and changes in human welfare in forested areas".

Any suggestions or feedback regarding the list serve are welcomed and should be sent to: David Kaimowitz at: d.kaimowitz@cgiar.org

To subscribe to the list, either contact David Kaimowitz or send an e-mail to: LISTSERV@CGNET.COM, containing the message: Subscribe POLEX.

Rural and Agricultural Incomes with a Sustainable Environment (RAISE)

RAISE is a worldwide initiative of USAID that promotes environmentally sound strategies for economic growth. The product information section of this Web site features technical, market and regulatory information, and commercial contacts for eco-friendly products. Examples include natural products (dyes, herbs, medicinal plants), forestry products, ecotourism. It also includes sections on best practices, bulletin boards, Internet links and upcoming events.

www.raise.org/

Sustainable Development Networking Programme, India (SDNP-India)

The United Nations Development Programme (UNDP)and the

WEB SITES

International Development Research Centre (IDRC) of Canada in collaboration of Ministry of Environment and Forests (India) has launched the portal site of Sustainable Development Networking Programme, India (SDNP-India).

SDNP-India aims to facilitate the process of sustainable development, promote good practices and strengthen the democratic processes through a mechanism of information exchange between the government and research organizations, non-governmental organizations, business establishments and the civil society over the electronic and hybrid media.

The Internet site provides access to a host of on-line databases, environmental legislation, case studies, publications, news clippings and electronic discussion groups on these issues. A database of international organizations working on sustainable development issues is being maintained on the Internet site and has been indexed according to subject area. The links section of the site provides a gateway to more than 1 500 other sites concerning environment and sustainable development.

Information on Environment and Sustainable Development is also available in local Indian languages, so as to enhance the reach of the programme.

For more information, please contact:
Vikas Nath, Programme Officer,
Sustainable Development Networking Programme (India),
Room 1023, Paryavaran Bhawan, CGO Complex,
Lodhi Road, New Delhi 110003, India.
Fax: +91 11 436 1147;
e-mail: sdnp@envfor.delhi.nic.in;
http://sdnp.delhi.nic.in; *or*
mirror site: http://members.tripod.com/sdnp_india

Sustainability Web Site

The site offers hundreds of searchable resources to help communities, businesses, educators, researchers, policy-makers, environmental managers, legislators and households make better decisions. This site also serves as an excellent electronic reference in high school and college classrooms where students are encouraged to learn how science, society and economics, as well as ethics and morality, influence our multidimensional lives.

The hundreds of information pages include discussions on population, climate, energy, natural resource use, coastal planning and management, human nature linkages, biodiversity, watershed protection, technology, sustainable agriculture, safe water supplies, waste management, community development, transportation, green building, economic revitalization, consumerism, sustainable cities, international security, politics, smart rural development, education, family relations, human values, etc.

Part of the Five E's Web site's purpose is to offer the public service of circulating and promoting the most current ideas, tools, and success stories involving people, places, and organizations attempting to achieve sustainability.

For more information, please contact:
Dr R. Warren Flint, Five E's Unlimited, PO Box 311,
Pungoteague, VA 23422, USA.
www.eeeee.net

Tibetan Plateau Project

The Tibetan Plateau Project sponsors the <tpp-tibmed-plants> list serve. The aim of this list serve is to promote the discussion and exchange of information on the topics of traditional Tibetan medicine and medicinal plant conservation.

To join, send an email to: tppei@earthisland.org, with the message: subscribe <tpp-tibmed-plants>.

Trio

Trio is the electronic newsletter of the North American Commission for Environmental Cooperation (NACEC) and is available on line at:
www.cec.org/trio

Through its stories, told by a variety of voices from the NACEC community, you will learn of the cooperative efforts among people and organizations in Canada, Mexico and the United States in the protection of their shared North American environment.
www.cec.org

Unasylva Web site renewed

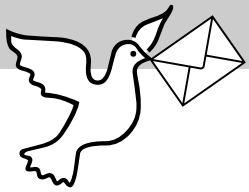
The Web site of FAO's journal *Unasylva* has been renewed with a new design and increased functionality. The updated Web site offers access to the complete *Unasylva* collection (1947-2000) with full texts in English, French and Spanish. A newly created search engine permits users to search the collection by issue and by article, by author, by year and free key word.

A CD-ROM containing the complete *Unasylva* collection (which also contains the full search capability) is being completed and will be printed before the end of January 2001.
www.fao.org/forestry/foda/unasylva/unasyl-e.stm ●

Sometimes you have to shed your old bark in order to grow

Anon

READERS' RESPONSE



Request for information

I am curious to know whether anyone has references of studies of plant populations and harvesting studies. I am interested in looking at single species harvesting as well as looking at complexes of plants within a population, and the harvesting of multiple plants from those sites. I am familiar with Gagnon's work. (Trish Flaster, Botanical Liaisons, 1180 Crestmoor Drive, Boulder, CO 80303, USA. Fax: +1 303 494 2555; e-mail: tflaster@rmi.net)

NTFP inventory plots

Isabelle Gambetta is looking for literature and/or experience on inventory and analysis of data (multivariate) regarding NTFPs on transects plots of 20 x 50 m, every 150 m, on the foothills of the Ecuadorian Amazon. She inventories quantitatively about ten different products (ferns, fruits, fibres) and notes the presence or absence of many other products. She has found a lot of literature on one-hectare inventory, but is looking for information covering all vegetation of one community (multiple plots), i.e. secondary vegetation, pasture, virgin forests, to be able to make a comparison with her results and methods.

She would be grateful to receive any advice/literature/results on this theme since part of her Ph.D. covers the importance of non-timber forest products for some communities in the Ecuadorian Amazon (availability, market and consumption). If you have information to share, please contact Isabelle at: gambetta@fowi.ethz.ch

Economic valuation of biodiversity: case studies in Brazil

This is to announce the availability on the Web of my recently concluded survey for Brazil's Ministry of the Environment, *Economic valuation of biodiversity: case studies in Brazil*. The study summarizes more than 50 biodiversity valuation studies on Brazilian biomes as a contribution to the national Strategy for Biological Diversity Conservation and Sustainable Use. The survey (in Portuguese with an English executive summary, soon to be published by MMA in hard copy) can be downloaded from: www.mma.gov.br/chm/publicacoes/valoracao_biodiv/valoracao_biodiv.pdf

Other recent publications available on the Web include: *Corporate roles and rewards in promoting sustainable development: lessons learned from Camisea,* published at http://socrates.berkeley.edu/erg/Pages/wp_98_1.html as Working Paper ERG-99-I, by the University of California at Berkeley Energy and Resources Group, downloadable in pdf format. A study of the Shell Group sustainability strategy has been published in pdf format, *Corporate incentives and environmental decision-making: case studies and workshop report,* September 1999 (see Royal Dutch/Shell case study), as part of a HARC/NAS Private Sector Initiatives project.

I welcome your comments and criticisms. (Peter May. E-mail: pmay@pronatura.org.br)

Tribal Cooperative Marketing Development Federation of India Ltd

I am working in New Delhi as Deputy General Manager with Tribal Cooperative Marketing Development Federation of India Ltd (Trifed), a national-level cooperative federation fully supported by the control of the Government of India, having joined in 1988. The basic objective of our organization is to help the tribals/indigenous people of India by procuring their NTFPs through our branches and members network in India and marketing the same, in turn, assuring fair economic/remunerative prices to the tribals. Their total population in India is 67 millions. Marketing NTFPs is their main source of livelihood but it is facing a variety of problems – institutional, logistic and financial as well as on policy fronts. There are opportunities for research that could lead to enhanced inccome for the tribal peoples on a sustainable basis. Some outstanding issues requiring priority attention could be resolved by adequate research work.

May I seek your assistance in finding out the names of other institutes which could help me to take up a research project in areas concerning non-timber forest products; participatory forest management; institutional management in India; regulatory/policy framework on NTFPs for ethical trade initiative. (M.M. Lohia, Deputy General Manager, Trifed, 2nd floor, NCUI Building, August Kranti Marg, New Delhi 110016, India. E-mail: mmlohia@vsnl.com; www.trifed.net)

Biodiversity in India

India is one of the 12 countries in the world that are rich in biodiversity. It holds 70 percent of world species diversity and has about 45 000 known plant species. According to the World Health Organization, about 80 percent of all therapies in use are made from herbs, with estimates that place the value at US$12.6 billion worldwide. In the United States, industry experts estimate that sales of herbs and herb supplement products now exceed US$3 billion, accounting for about one quarter of the world's total.

People for Animals is a charitable trust formed to campaign the cause of animal welfare, biodiversity and the environment. The main aims of our society are to: encourage innovative programmes on the wise management of the earth's natural resources; reduce deforestation and to encourage efficient renewable use of natural, human and human-made resources; enhance the quality of life through the conservation of the environment; promote marketing techniques that can provide income for community-based groups; undertake research in the conservation of the natural environment and the sustainable utilization of the natural resources of Madhya Pradesh.

(Dr R. Sugandhi, Coordinator (Medicinal Plants) and President, People for Animals Bhopal, 179 Kalpana Nagar, Bhopal 462021, M.P., India. E-mail: sugandh_09@satyam.net.in)

Temperate broadleaved trees and their multiple products

The world's temperate broadleaved trees and forests provide a vast array of products that are beneficial to humans. Not only is the wood of many temperate broadleaved trees highly valued as a source of timber or fuelwood, but these trees also provide a vast range of important non-wood forest products (NWFP), such as cork, flowers as nectar sources for special honeys, maple syrup, tannins, fruits, nuts, mushrooms and so on. A forthcoming publication in the FAO NWFP series describes these important NWFPs from temperate broadleaved trees, and is a companion volume to an earlier publication, *Non-wood forest products from conifers.*

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