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Chairs’s Note

MPSG membership and restructuring
As this eighth volume of Medicinal Plant Conservation goes to press, the process of renewing the membership of the Medicinal Plant Specialist Group (MPSG) for the current IUCN triennium (2001–2003) continues. As I reported in Volume 7 (August 2001), we are organizing regional sub-groups with regional Vice-Chairs. Re-invitation of current members and invitation of new members, traditionally the responsibility of the Chair, will be shared with the regional Vice-Chairs. I am optimistic that the restructuring process will help us to work more effectively with and through our members. Our membership currently stands at nearly 70 individuals worldwide. As we review MPSG membership within the regional sub-groups, we are considering the individual skills we will need to work towards our regional and global objectives, including the appointment of regional Red List Authorities (www.redlist.org/info/programme.html) and the establishment of regional nodes for participation of the MPSG in the new IUCN/SSC Species Information Service (www.iucn.org/themes/ssc/programs/sisindex.htm). We are also working on clearer linkages between the MPSG and other groups and institutions that will make our own efforts stronger.

We are furthest along in organizing regional MPSG sub-groups in South Asia and in Central America/Caribbean. A brief organizing meeting for the South Asia sub-group was held on 22 January 2001 in Pokhara, Nepal, in conjunction with a medicinal plant conservation assessment workshop in Nepal (see the report in this issue). Eight MPSG members were able to attend (Vinay Tandon, Bhishma Subedi, Nirmal Bhattarai, S.B. Malla, S. Vedavathy, V.P.K. Nambar, G.S. Rawat, and Danna Leaman). This group discussed ways to encourage the participation and collaboration of members and supportive institutions from all countries in the region, and agreed to the appointment of Vinay Tandon as regional Vice-Chair. The South Asia sub-group will be identifying members who can act as national focal points, and developing a regional MPSG programme. The sub-group has received some set-up funding from the Medicinal and Aromatic Plant Programme in Asia – MAPPA (which is supported by Canada’s International Development Research Centre – IDRC and the Ford Foundation). The 3rd World Congress on Medicinal and Aromatic Plants for Human Welfare (WOCMAP-III), planned for Chiang Mai, Thailand, February 2003 (see meeting announcements in this volume), could provide a venue for a broader regional discussion of the role of the MPSG and partners in South and South-East Asia. In Central America and the Caribbean, the TRAMIL network has just received a Medium-Sized Project grant from the Global Environment Facility (GEF), through the United Nations Environment Program (UNEP). This project will expand the work of the TRAMIL network into medicinal plant conservation activities in the Dominican Republic, Panama, Nicaragua, and Honduras. The MPSG is considered a co-funder through our contribution of time and effort to the proposal and to the project. As regional Vice-Chair, Sonia Lagos-Witte (who coordinates the GEF project) will be working to establish an MPSG sub-group in conjunction with the implementation of the GEF project and the development of a broader regional Centres of Medicinal Plant Diversity project. At the upcoming VIII Latin American Botanical Congress (Cartagena, October 2002 – see meeting announcements in this issue) Sonia and I are coordinating a Round Table discussion on Conservation and Sustainable Use of Medicinal Plants. We hope to encourage a discussion of the role of the MPSG and other groups in Latin America within this venue.

Programme development
Last year we began to work with IDRC to develop the concept of regional Centres of Medicinal Plant Diversity (CMPD) as a programme structure for projects undertaken in partnership with the IDRC regional medicinal plant research networks and other partners. At present we are drafting a proposal for funding that will support the more detailed design of regional CMPD projects.

MPSG Listserv and Website
We have made some progress towards setting up an MPSG members’ listserv and establishing a website. The Information Management Group within the IUCN Secretariat is now able to provide listserv support to Specialist Groups, although each group must manage its own list. Natalie Hofbauer, who coordinates the publication of this newsletter and manages the MPSG membership list, has agreed to set up and manage an MPSG listserv. Rolie Srivastava, who coordinates the MedPlant website (see the report in this issue), has agreed to provide listserv backup. We hope to have the listserv up and running soon. (MPSG members: Please send your up-dated contact details to Natalie Hofbauer.)

We have wanted to create an MPSG website for several years, but have encountered three obstacles: finding a host server, website design, and website management. The first obstacle has been removed – the IUCN is now able to host Specialist Group web-
sites, although these sites still must be created and managed by each group. Antoine Morin, a professor of Biology at the University of Ottawa, has provided valuable advice on website structure and content, and we now own a website address (mpsg.org). We may have overlooked the possibility that there is a talented webmaster within our own membership who might be willing to work on the design and take on site management – please let me know!

Acknowledgements
I have acknowledged above a few of the MPSG members and others who have contributed time and energy to the work of our group over the last few months. There are others I haven’t named, including the contributors to this newsletter, who regularly do the work that has placed the MPSG amongst the most productive of the IUCN SSC Specialist Groups, both through their individual efforts and with the support of their home organizations. Thanks to Uwe Schippmann, Natalie Hofbauer, and the Federal Agency for Nature Conservation (BfN) for the preparation, production, and mailing of Medicinal Plant Conservation. To Uwe, congratulations on the publication of Volume 2 of the Medicinal Plant Conservation Bibliography, which enables access to an enormous resource of literature relevant to our work.

Farewell to a pathmaker, Chusa Gines

Danna Leaman

In the shifting tides of international development assistance, occasionally one encounters a strong swimmer who cuts across the currents to open sea. Maria Jesus Gines (known to everyone as Chusa) had this rare capacity. As a Programme Officer, Chief Scientist, and Team Leader in Canada’s International Development Research Centre’s Biodiversity programme, Chusa never failed to grasp, with warmth, recognition, and a fiery Spanish spirit, the valuable talents and dedication amongst the people with whom she worked – many of them researchers in developing countries struggling against the currents of larger and more powerful interests.

Among the many ideas that Chusa championed during the one decade (1992-2002) she worked for IDRC, the value to local communities and traditional cultures of medicinal plants, and the great need for work on their conservation and sustainable use, was a constant and driving commitment. It was largely Chusa’s ability to steer the logic of this cause through the shifts and turns of development programming that has produced what is likely the most extensive network of programme support for research on medicinal plants supported by a single development agency. Today, IDRC supports medicinal plant research programmes and networks in South Asia, Central America and the Caribbean, the Southern Cone of South America, and in Eastern, Western, and Southern Africa. Chusa had a guiding hand in all of this. Chusa was not a member of MPSG, but she was a valuable partner.

In 2001, Chusa was seconded by IDRC to coordinate a research project on strategies for integrating small-scale end-users in cassava biotechnology, based in Quito, Ecuador. This took her back to her PhD roots in biotechnology and molecular genetics. She was a passenger on the TAME airliner that crashed on the summit of a volcano on the border of Ecuador and Colombia on 28 January, 2002. There were no survivors. At a memorial service in Old Chelsea, Quebec, a friend recounted Chusa’s indomitable approach to adversity: “It took a mountain to stop her – and only because she didn’t see it coming.”

Certification and sustainability

Certification and benefit-sharing mechanisms in the field of non-wood forest products – an overview

Sven Walter

Non-wood forest products (NWFP) such as edible fruits and nuts, mushrooms, gums, resins, aromatic plants, bushmeat or honey contribute significantly to the satisfaction of daily subsistence needs, in particular for rural populations in developing countries. The total value of world trade in NWFP is estimated at US$11 billion (FAO 1993). The general direction of trade in these products is from developing to developed countries (VANTOMME 2001). Among the most important NWFP regarding their value in international trade are medicinal plants (US$ 689.9 million), nuts (593.1), ginseng roots (389.3), cork and cork products (328.8), and essential oils (312.5) (FAO 1993).

The international trade in NWFP involves high potentials and risks: The main benefit of the international trade in NWFP is the high market value the products achieve compared to local or national markets. However, high market values combined with high demands may also cause unsustainable use since they

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1 According to FAO (1999), NWFP “consist of goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests”.
may lead to the overexploitation of species providing NWFP. In addition, higher product values may not be equally shared among all stakeholders involved in the collection, processing, manufacturing, trade and marketing of NWFP.

A main problem in assessing the actual sustainability of NWFP utilization is the fundamental lack of information on their production, consumption and trade. Monitoring and evaluation systems are still embryonic and insufficient in order to properly collect and analyse key information related to NWFP.

Certification and benefit-sharing arrangements are, among others, two different concepts that have been developed in order to contribute to the sustainable use of natural resources and which have been applied in the field of NWFP, including medicinal plants.

**Certification**

Certification is a procedure by which written assurance is given that a product, process or service is in conformity with certain standards (see ISO/IEC 1996). It is often linked to the provision of labels for certified products, processes or services (DANKERS 2002).

Certification programmes related to natural resource use have mainly been developed for timber and agricultural products. Four main categories of certification schemes have been identified to be of major relevance for the use of NWFP:

i) Forest management certification;
ii) Social certification;
iii) Organic certification; and
iv) Product quality certification.

Many more programmes, organizations and institutions exist that are dealing with various aspects of certification:

- Inter-governmental bodies such as the FAO/WHO Codex Alimentarius Commission, the International Labour Organization (ILO) and the International Plant Protection Convention, which intend to be included in governmental regulations;
- Non-governmental bodies such as the International Organization for Standardization (ISO) and other international non-governmental organizations (NGO) that are focusing on private certification systems (DANKERS 2002); and
- Certification of origin, for example, guarantees that a given product is derived from a certain region or area but does not assess any quality standards (FAO 2001).

Depending on their basic concepts, these certification schemes focus on different areas such as production, processing, manufacturing as well as trade and marketing. However, many schemes do not focus on only one area but include, to different degrees, several areas. Therefore, considerable overlaps and potential synergies between the different certification schemes exist.

The certification programmes discussed below are voluntary schemes, which have to be in accordance to mandatory, national and international rules, regulations and conventions. Examples of international agreements and conventions, which are legally binding to signatory countries, include the World Trade Organization agreements, the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and other related laws and regulations. They set the legal frame for every voluntary certification scheme (figure 1).

![Figure 1. Overview of relevant certification schemes in the field of NWFP](image_url)
agement of NWFP in natural forests, such as the Draft principle 11 of the Forest Stewardship Council (FSC) and the Rainforest Alliance/SmartWood Programme. Generic guidelines for assessing the management of NTFP in natural forests and the Addendum on NTFP. In addition to these generic guidelines, species-specific standards are required in order to take into account the wide range of ecological characteristics and management practices related to NWFP (MALLET 1998).

Only a few NWFP have been certified in the context of forest management certification programmes, including the FSC accredited SmartWood certification of maple syrup (Acer saccharum) in the United States, chicle (Manilkara zapota) in Mexico, brazil nuts (Bertholletia excelsa) in Brazil, Bolivia, and Peru, and acai palm hearts and fruits (Euterpe oleracea) in Brazil (DONOVAN 2000).

ii) Social certification

Social certification systems, such as fair and ethical trade, assure that labour conditions are acceptable and benefits are equally shared among those involved in production and trade. These kind of trade initiatives foster business partnerships and management supply chains, which include secure and fair commercial deals and support the provision of market information (KRUEDENER 2000). Important criteria focusing on social issues include

- Tenure and customary rights;
- Fair returns and adequate benefits;
- Safe and healthy working environment;
- Impact on local/indigenous communities;
- Economic viability;
- Absence of child labour; and
- Ethical marketing (MALLET 2000; BURNS & BLOWFIELD, s. dat.).

Social certification related to NWFP has mostly been promoted by fair trade initiatives. However, the impact of ethical and fair trade in forest products on forest dependent people is not yet clear (TALLONTIRE, s. dat.). In the forestry sector in general, social issues have not yet been fully addressed since certification initiatives have been largely driven by environmental rather than social concerns (NATURAL RESOURCE INSTITUTE 2000).

Examples of fair-trade certified NWFP include chicle (Manilkara zapota) in Mexico (MALLET 2000) and devil’s claw (Harpagophytum procumbens) from Namibia (LEITH, s. dat.). NWFP traded by The Body Shop International (1996) include babassu oil (Orbignya phalerata) and brazil nut oil (Bertholletia excelsa) in Brazil, shea butter (Vitellaria paradoxa) in Ghana, and honey and beeswax in Zambia.

iii) Organic certification

“Organic agriculture is a holistic production management system which promotes and enhances agroecosystem health, including biodiversity, biological cycles, and soil biological activity…” (FAO/WHO 1999). Wild crafted and semi-domesticated NWFP can also be considered as organic and many NWFP such as pine nuts, mushrooms and herbs are increasingly commercialized as organic food products.

An example for criteria related to the organic production of wild crafted products are the basic standards of the International Federation of Organic Agriculture Movements (IFOAM) on the Collection of non cultivated material of plant origin and honey (IFOAM 2000). They specify that organically collected plant material should i) be derived from a stable and sustainable growing environment; ii) be harvested or gathered in a way not exceeding sustainable yields; iii) be derived from a clearly defined collecting area; iv) not be exposed to prohibited substances; v) be harvested and gathered in a collection area that should be at an appropriate distance from conventional farming, pollution and contamination; and vi) be harvested and gathered by operators, who shall be clearly identified and be familiar with the collecting area.

A multitude of NWFP have been certified according to organic standards including berries (Finland), palm hearts (Brazil), chicle (Mexico), maple syrup (USA), Orbignya cohune (Guatemala) as well as mushrooms, medicinal plants and plants used by the cosmetic industry (MALLET 2000; VIANA et al., 1996; TEN KATE & LAIRD 1999).

iv) Product quality certification

Product quality certification aims at ensuring that defined production standards have been taken into consideration. These standards can focus on the product itself as well as on the way it is processed and manufactured.

Product quality parameters include product identity, purity, efficiency and safety. These parameters are relevant for a wide range of internationally traded NWFP mainly used in the food and pharmaceutical industry. One example of international commodity and general standards relevant for the food industry is the Codex Alimentarius, which aims at developing and disseminating international food standards to protect consumer health and to facilitate international fair trading practices in foods (FAO/WHO, 1999b; HEALTH CANADA ONLINE, s. dat.).

Process oriented standards include Good Manufacturing Practices (GMP) or Good Laboratory Practices (GLP) guidelines. Basic elements of the World Health Organizations’ GMP for pharmaceutical products, for example, are
• “An appropriate infrastructure or ‘quality system’, encompassing the organizational structure, procedures, processes and resources; and

• Systematic actions necessary to ensure adequate confidence that a product (or service) will satisfy given requirements for quality. The totality of these actions is termed ‘quality assurance’” (WHO 2000).

Other product specific guidelines cover to some degree ecological, social and economic aspects. Examples include the Good Harvesting Practices (GHP) and Good Agricultural Practices (GAP) for medicinal and aromatic plants (EMEA 1999; HARNISCHFEGER 2000) or the Guidelines for the socially and environmentally responsible production of cut-flowers (FLOWER LABEL PROGRAMME, s. dat.).

Medicinal plants are probably mainly certified according to organic and product quality standards. Forest management certification related to medicinal plants has not yet been documented by the author. However, discussions are ongoing to strive, for example, for the certification of Prunus africana in Cameroon.

**Benefit-sharing arrangements**

Benefit-sharing means “all forms of compensation for the utilization of genetic resources [including natural products] whether monetary or non-monetary and includes, in particular, the participation [of stakeholders] in scientific research and development on genetic resources, and the making available of the findings of such scientific research and development and the transfer of technologies” (SWISS STATE SECRETARIAT FOR ECONOMIC AFFAIRS 1999).

Benefit-sharing arrangements (BSA) are directly linked to one main objective of the Convention on Biological Diversity (CBD), “the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding” (Article 1 of CBD; CBD 2002a).

BSA aim at facilitating the agreed-upon distribution of monetary and non-monetary benefits between a provider and a recipient of genetic resources. These benefits can be shared in the short, medium and long term. The kind of benefits and the timeframe may differ among the stakeholders involved (table 1).

<table>
<thead>
<tr>
<th>Monetary benefits</th>
<th>Non-monetary benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “Up-front” payments</td>
<td>• Contributions to local economy and at the village level, e.g. livelihoods improvement such as infrastructure and food security</td>
</tr>
<tr>
<td>• Milestone payments</td>
<td>• Community empowerment through improved negotiation capacities</td>
</tr>
<tr>
<td>• Royalties</td>
<td>• Strengthening capacities of local populations in the sustainable use of natural/genetic resources</td>
</tr>
<tr>
<td>• Research funding</td>
<td>• Exchange of staff and training;</td>
</tr>
<tr>
<td>• License fees</td>
<td>• Capacity building and transfer of technology</td>
</tr>
<tr>
<td>• Salaries</td>
<td>• Sharing of research results</td>
</tr>
<tr>
<td>• Equity and profit-sharing opportunities</td>
<td>• Increased scientific capacities, e.g. through support to research activities.</td>
</tr>
<tr>
<td>• Higher sale price of products.</td>
<td></td>
</tr>
</tbody>
</table>

In contrast to certification systems, neither commonly accepted standards, nor indicators nor guidelines related to BSA exist. BSA are unique agreements between concerned stakeholders such as the private sector (e.g. exporters, importers, intermediaries and processors), local communities (e.g. collectors, owners of traditional knowledge, local traders), governmental bodies (on a national, regional and local level) and non-profit intermediaries (e.g. national and international non-governmental organizations, development projects, research institutes).

However, several voluntary guidelines have been proposed in order to provide a framework for BSA. Examples include the Swiss draft guidelines on access and benefit-sharing (SWISS STATE SECRETARIAT FOR ECONOMIC AFFAIRS 1999) and the Guidelines for equitable partnerships in new natural products development (WWF 1996). UNEP/CBD (2001) “identified key elements to be considered in the preparation of international guidelines for access and benefit-sharing” and TEN KATE & LAIRD (1999) propose process and content indicators of fair and equitable benefit-sharing.

In the field of NWFP, BSA have been negotiated related to i) the identification and development of new products and ii) the actual trade in NWFP.

i) Identification and development of new products

Bioprospecting, “the search for commercially valuable biochemical and genetic resources in plants, animals and microorganisms” (FAO 2000), is carried out by the pharmaceutical industry in two ways:

• Random screening of chemicals found in nature; and
• Screening of chemicals based on the traditional knowledge of the medical application of organisms, especially medicinal plants. This ethnobotanical screening is mainly carried out by small companies and academic institutions and is supposed to save time and money and “... 5,000 times more effective than random collection” (RAFI 1994; ROSENTHAL 1998).

In order to assure that i) the provider(s) of genetic resources and/or traditional knowledge receive adequate property rights and ii) the share of benefits be equally distributed among all stakeholders, including local communities, national states and private companies, BSA related to the identification and development of new drugs were developed.

In the case of a bioprospecting project carried out in Suriname, a Forest People’s Trust Fund was set up by the project with a US$60,000 contribution from an American pharmaceutical company. The fund is supposed to compensate communities for their ethnobotanical contributions to the project and aims at creating conservation incentives, financing sustainable management projects, providing research and training exchanges and supporting other socially and environmentally sound projects (GUÉRIN-MCMANUS et al., s. dat.).

ii) Trade in NWFP.

BSA directly related to the international trade in NWFP cover a wide range of sectors including the pharmaceutical, botanical medicine, personal care and cosmetics, and food industry. The supply channels for raw materials used by these industries are comparable since wholesalers, including exporters, traders, brokers and agents, sell to a range of different sectors (TEN KATE & LAIRD 1999).

Examples for BSA related to medicinal plants include Trichopus zeylanicus (India), Ancistrocladus korupensis (Cameroon), Prunus africana (Cameroon), Calophyllum lanigerum (Malaysia), Taxus brevifolia (USA), Piper methysticum (Pacific Islands), Panax vietnamensis (Vietnam), and Pilocarpus jaborandi (Brazil) (CBD 2002b; TEN KATE & LAIRD 1999).

In at least three cases, these BSA failed: In the case of Ancistrocladus korupensis, the US-National Cancer Institute stopped conducting research and development when the toxicity of the active substance they were interested in, michellamine B, was discovered (LAIRD & LISINGE 1998);

• Prunus africana, the main exporter annulled an agreement with governmental organizations and local harvester groups due to a disagreement with governmental organizations, which limited the maximum annual sustainable quota to 300 t of bark (FAO 2000);

• Pilocarpus jaborandi, promised benefits by the exporter such as steady income, roads, schools and clinics never materialized. In addition, many of the 25,000 collectors of wild crafted jaborandi leaves might loose an important source of income if plantations are established (TEN KATE & LAIRD 1999).

One major mechanism to facilitate monetary benefits used by most of the BSA in the field of medicinal plants are trust funds. They aim at avoiding problems associated with direct cash payments to individuals or communities.

Harvesters of Prunus africana bark in Cameroon, for example, who were organized in a Prunus Harvesters Union, paid a part of their income (equivalent of 2 kg of bark) to the Village Development Fund. Five months after the fund was set up, some US$1,500 had been generated. The village intended to use the money for a long-awaited water project (FAO 2000). However, the Prunus Harvesters Union dissolved after the annulment of the benefit-sharing arrangement (see above). Subsequently, a new organization, the Mount Cameroon Prunus Management Company Ltd., was established by villagers in order to carry out the monitoring, management and conservation of Prunus africana.

Issues and perspectives

Certification and benefit-sharing mechanisms are complementary tools, which aim at contributing to the sustainable and equitable use of NWFP. Certification is mainly perceived as a marketing tool focussing on ecological, economic and/or social aspects. Benefit-sharing is considered as a policy tool developed during the CBD process, which puts the emphasis on equity issues.

The linkages between BSA and certification systems were also addressed by the Swiss draft guidelines on access and benefit-sharing. They encourage stakeholders “to collaborate in creating a system of certification, ... which would confirm the abidance to the guidelines by stakeholders being certified. When creating this system of certification, the involved stakeholders are encouraged to consider the suitability of any existing institution or mechanism already involved in certification and standardisation” (SWISS STATE SECRETARIAT FOR ECONOMIC AFFAIRS 1999).

Both certification and benefit-sharing are potential tools to reduce the negative effects of international trade in NWFP and to promote the sustainable use of NWFP. However, an in-depth analysis is still required in order to identify the key factors leading to the success or to the failure of the application of these tools. Crucial issues, which should be taken into consideration when analysing BSA and certification systems, include:
• Which certification programmes or BSA are and under what conditions, the most suitable, and for whom?
• Which mechanisms are the most appropriate to facilitate monetary benefits? Who should be the principal beneficiaries? How should they be organized?
• How relevant are these mechanisms to promote the sustainable use of NWFP, taking into account that they are only applied for selected species and specific locations?
• What is the impact of certification and benefit-sharing as policy tools that provide a multitude of non-monetary benefits, such as improved capacity, stakeholder participation and consultation and the recognition of custom, tenure and user rights?
• How do certification and benefit-sharing mechanisms actually contribute to poverty alleviation? Will they remain tools providing benefits to a limited number of people or will these mechanisms contribute to the improvement of local livelihoods on a larger scale?
• Are certification and benefit-sharing mechanisms able to promote the production of NWFP by forest dependent people viz-à-viz the production of these products through farming? (This is particularly so for medicinal plants, where “competition” between farmed and wild gathered products is high.)
• What is the potential of certification and benefit-sharing as market tools? For which products, certified or produced in the context of BSA, does a market actually exist that allows the payment of a premium price?
• How do additional costs that result from certification and benefit-sharing influence their application?
• How applicable are certification and benefit-sharing mechanisms in rural areas and by dispersed people?
• How applicable and effective are certification and benefit-sharing mechanisms as tools for the improved traceability of supply chains?
• What methods can be applied in order to define sustainable harvesting levels, taking into account the lack of ecological information on many species providing NWFP? Do species specific standards sufficiently avoid negative ecological effects on the entire production system?
• Can certification programmes be used as voluntary control tools in order to monitor and evaluate the compliance with laws and regulations such as CITES? CITES, for example, requests for Appendix II species, which risk to become threatened with extinction, that trade is closely controlled and will not be detrimental to the survival of the species (CITES 2002).

These and many more issues have to be clarified in order to assess the relevance and applicability of certification and benefit-sharing as tools for the sustainable use of NWFP.

The FAO NWFP Programme, in collaboration with other programmes, organizations and agencies, aims at contributing to this assessment by

• Collecting, analysing and disseminating information on i) relevant stakeholders involved in certification and benefit-sharing (e.g. private sector, governmental and non-governmental organizations, labelling initiatives) as well as ii) existing certification and benefit-sharing mechanisms for NWFP;
• Implementing case studies, which aim at assessing the impact of certification and benefit-sharing on the sustainable use of selected NWFP.

References


Note: The article is a summary of a more comprehensive discussion paper on the issue, which aims at setting the framework of a new programme activity of the FAO NWFP Programme. The full discussion paper is available on the website of the FAO NWFP Programme. Comments on the article are mostly welcome and should be sent directly to the author.

Sven Walter • Non-Wood Forest Products Programme (FOPW) • Forest Products Division – Forestry Department • FAO • Viale delle Terme di Caracalla • 00100 Rome • Italy • Tel.: +39/06/570-53853 • Fax: +39/06/570-55618 • Email: Sven.Walter@fao.org • FAO Website on Non-Wood Forest Products: www.fao.org/forestry/FOP/FOPW/NWFP/nwfp-e.stm.

Strategies to promote sustainable and ethical raw material sourcing in the botanics industry: results from an industry survey

Sarah A. Laird & Alan R. Pierce

The trade in raw materials for the botanics industry – including herbal supplements, phytomedicines, functional foods and drinks, and natural personal care and cos-
metic products – involves a complex web of global exchange. Many of the species in trade are poorly or unsustainably managed, and in many cases local communities benefit little. However, because finished products in this sector are commonly marketed as “green” or as having beneficial links to indigenous peoples, consumers remain unaware of the environmental and social implications of their purchases. As a result, both companies and consumers have yet to ask some of the basic questions associated with the social and environmental impact of these products – and particularly those products that come from high biodiversity developing countries:

- Where does raw plant material come from?
- Who harvests it and under what conditions (ecological and socio-economic)?
- How does selling and consuming a product help the people upon whose knowledge this product is based, and/or conservation of the species and ecosystems from which it is sourced?

In order to better understand how conservation and development organizations might more effectively promote sustainable and ethical sourcing of raw materials, in 2001 the authors undertook a survey of companies from around the world. The objectives of the survey were to understand: 1. current practices and attitudes relating to raw material sourcing; 2. biases against sustainability and accountability in the main consuming sectors today; and 3. opportunities and effective strategies for promoting more sustainable and ethical sourcing. This paper will focus on the last objective relating to strategies. It was felt that the Medicinal Plant Conservation readers might be particularly interested in company responses to proposed strategies, many of which are employed by these readers or have been discussed in these pages.

The survey

The company survey was undertaken as part of a pilot project to develop a Sustainable Botanicals project for the Rainforest Alliance. This project also involved examining possible project strategies in light of particular cases (e.g. devil’s claw, <i>Harpogophytum</i> spp. and ginseng, <i>Panax quinquefolius</i>), and involved compilation of the <i>Annotated Collection of Guidelines, Standards, and Regulations for Trade in Non-Timber Forest Products (NTFPs) and Botanicals</i>. The survey was undertaken with 54 companies, 15 industry associations and dozens of NGOs, research institutions, and others. Of the 54 companies surveyed, 26 are from Europe, 17 from the US, 7 from South America, 2 from Africa, and 2 from Asia. We sought to represent geographic diversity, and diversity in the market chain, but the emphasis was on North American and European companies.

Companies interviewed ran the spectrum from the very large (annual earnings well in excess of $1 billion) to the extremely small (one or two employees making products in little more than a kitchen), however the majority of companies were medium to large-sized. 35 companies market products directly to consumers, with the others producing, brokering, or processing raw materials in some form. 26 companies are involved almost exclusively in the botanical or phytomedical sector, 12 exclusively in the personal care and cosmetic, and another 16 combined these or other activities, including vitamins and functional foods. Some of the companies interviewed have made a significant commitment to sustainable and ethical raw material sourcing, and many professed a desire to do more in this direction, but most invest little in this side of their business.

**Strategies to promote sustainable and ethical raw material sourcing**

There are clearly a number of obstacles to achieving wide-spread sustainability in raw material sourcing by the botanicals sector. However, most of these are not insurmountable, and can be addressed through a package of strategies, undertaken by a number of different organizations. We asked survey respondents to review eight broad strategies, listed below, and to rate each strategy on a scale of 1-5 (with 5 being a very good idea and 1 being a bad idea). While most of the strategies are complementary, none are comprehensive. As one industry representative told us “they all go hand in hand and you can’t isolate one from another”. The following discussion begins with those strategies least favored by companies in our survey, and works through to those most favored.

**Strategy #1: Establishing brokers of environmentally and socially sound material**

This was by far the least popular strategy with companies and industry associations, averaging a rating of 2.8. Industry interviewees felt that the market would have established brokers if the issue made economic sense. New brokers, many argued, would only create additional structures and bureaucracies that add cost and inefficiency to the supply chain, ultimately posing harm to producers by diverting money away from local producers. While some companies supported the concept of providing producers with better prices and technical support, most were very wary of creating additional structures in the trade, particularly under the auspices of NGOs. As Ed Fletcher, Chief Operating Officer of Strategic Sourcing said, “This is industry’s job”.
Strategic #2: Consumer campaigns

Company and industry association representatives gave strongly mixed reactions to consumer campaigns. In the company survey, this strategy scored 3.7. Many companies said that after all the bad press herbs have received in recent years (particularly in the US), a campaign could only work if extremely constructive and positive. Some thought that industry should be the first target of an education program, as little could be achieved without getting companies “on board” and primed to respond to the effects of a consumer campaign. Others felt that “people really don’t care” about sourcing issues, and that, regardless of campaigns, consumers will opt for the cheapest acceptable product. Interviewees from companies, industry associations and NGOs warned that campaigns were exceedingly costly and needed to be tightly focused to achieve positive ends.

Strategic #3: National and international law and policy

Responses to this strategy were also strongly mixed. In the company and industry association survey, the average rating for this strategy was 3.9. Many in industry and its associations feel that there is already too much regulation and bureaucracy, and that even good laws get “bogged down” and “cumbersome” when it comes to implementation. While CITES is widely known throughout the industry, and has a direct impact on many companies, it was not always widely respected.

However, some companies, and most NGOs and research institutions, said that it is easier to effect change on a large scale by setting standards at the national and international level through law and policy. Comments on the fragmented nature of the industry, the proliferation of standards, and the lack of any control over claims, support the need for establishing effective national and international level policy. The Good Agricultural Practices developed by the EU, for example, appear to have been effective and are widely respected; the continued work of EUROPA and other groups to develop the Wild Harvesting component of these regulations is also encouraging. Given the complex web of intermediaries and countries through which most botanicals move from source to final product, it is likely that sustainability for many can only be regulated through adequate international, as well as national, law. Effective implementation of laws and policies – and not only the texts – is integral to their success.

Strategic #4: Developing internal corporate policies and strategies

Reactions to this strategy were mixed, with an average rating of 3.9. Many respondents felt that while company policies are an important step, they are widely abused and often toothless. The veracity of claims made by individual companies was questioned. As Leslie Taylor of Raintree Nutrition put it: “For every company doing sustainable harvesting out in the rainforest, there are eight others out there saying they are doing it right but are not.” A number of company staff suggested that a better first step is the establishment of industry wide sourcing standards, which could then be complemented or expanded upon by individual company policies. Both industry associations and NGOs were on average supportive of this approach. NGO staff in particular felt that formal, written policies are a basic and critical way for companies to move towards sustainability, transparency and public accountability. Collaboration on corporate policies is also a good entry point for NGOs to work with industry in direct partnership, and in concrete ways. For example, a basic first step in this process is mapping where a company’s raw materials come from, and under what conditions. B&Q did this for its timber, prior to moving on to other strategies like certification.

Strategic #5: Direct sourcing partnerships between companies, and NGOs and community based organizations

The average rating for this strategy was 4.0. Some companies voiced concern that harvesters and growers are basically “scalped” and felt that some kind of non-profit honest broker – of the type suggested here – was necessary to link producers with companies. However, few thought this type of partnership could provide significant quantities of raw material to the industry, and most would remain necessarily small-scale and niche. Industry associations were largely supportive of this approach, although a few wondered who would support this kind of activity, and how financially sustainable it would be over time. These types of partnerships may work best as catalysts for longer-term commercial partnerships that can be sustained over time without donor support. The hope is that by building capacity in local groups to partner with companies, providing technical advice on sustainable management, and linking local groups with companies, NGOs and others can help local producers develop infrastructure and institutions that allow them to strike better deals.

Strategic #6: Developing generic sector-wide guidelines with industry associations

This strategy was quite widely supported as a useful step and received an average rating of 4.2. Most company respondents considered it a good idea, but some thought that to work, any guidelines or policies would need to be simple and clear and must be developed within existing association infrastructures. Industry associations tended to be quite positive about an industry-
wide guideline approach, although some cautioned about the difficulty of bringing a diverse and fragment-
ed sector together under one policy. Others were more
skeptical, citing for example the existence of codes of
ethics, yet a lack of enforcement or monitoring. One
company researcher said, “In general, societies and pro-
fessional associations are nervous about sustainability
issues. They might be interested in principle, but any-
thing that sounds like increased regulations make peo-
ple shy away, and they are unlikely to follow through.”

**Strategy #7: Certification**

Certification was widely viewed as a positive approach
in principle, but there were numerous qualifiers about
the way it works in practice. We paid particular atten-
tion to this strategy given the Rainforest Alliance’s ex-
perience and interest in this area, and the increased
attention NTFP certification has received in recent
years. In the company survey, the average rating for this
strategy was 4.2. Industry associations and companies
were generally very favorable towards certification,
seeing it as a mechanism to authenticate claims and
institutionalize high standards in sourcing and manu-
facturing. NGOs and research institutions were also
positive, although many were concerned about cost and
access issues for small producers, stating that the long
term environmental and social impacts would be limit-
ed if the process was exclusionary. However, numerous
concerns with the effectiveness of certification were
raised with enough consistency, and from a large
enough pool of respondents from different countries, to
warrant mention here. Certifiers must address these
issues in order to use this tool to promote more sus-
anable and ethical sourcing of botanicals.

**Limits to what the market will bear in terms of a pre-
mium**

Companies were concerned about the cost of certifica-
tion and were skeptical that a premium or other market
value would be realized. As Kay Wright of Celestial
Seasonings said: “We had our experience with organic
chamomile tea. Our test groups said consumers would
buy it, but when they saw the certified organic cham-
omile for $5 next to non-organic for $2, they bought the
non-organic. So what they say in consumer testing is
not always borne out… they will pay more for organic
baby food, dairy products and vegetables. But for some
things – like teas – you need to be careful.” Certification
will also only work if the market is receptive to a
label’s message, which is influenced by a number of
local and regional factors including disposable income,
education levels and attitudes toward social and envi-
ronmental issues.

**Proliferation of standards**

Many companies voiced concern over the proliferation
of standards and label claims. Rod Lenoble, Technical
Director at Botanicals International Extracts/Hauser, a
raw bulk botanicals supplier, put it this way: “Recently
everybody and their brother have been setting up certi-
fication programs. Everyone has a spin on certification
and 1) I think it is confusing with multiple certification
bodies, and 2) what good is certification if no one knows
what it means? If you look at a Good Housekeeping
Seal or a UL Seal, they have spent millions of dollars
and multiple years to get people to understand it… I
look at bottles all the time and there are all kinds of
seals, and it is creating more confusion for consumers
than clarification.”

The vast majority of companies in favour of certifica-
tion for sustainability and fair trade said that it would
only work if done in conjunction with other forms of
certification, including quality control and GMPs. As
part of our work with the pilot Sustainable Botanicals
project, we compiled an *Annotated Collection of
Guidelines, Standards, and Regulations for Trade in
Non-Timber Forest Products and Botanicals* which lays
out the complex array of standards applying to the bo-
tanicals trade (see: www.rainforest-alliance.org/news/
archives/news/news44.html [viewed 26.3.2002]).

**Bad experiences with certifiers and the certification
process**

A surprising number of companies relayed bad ex-
periences with certifiers, from corruption to incom-
petence, and this included some of the biggest and best-
known certifying groups. As one company representa-
tive said: “When we go through organic certification
every year, I end up teaching the certifier because he
doesn’t teach me anything new….”. Others found the
potential for corruption was enormous, and rampant
throughout the industry. One researcher said, “…If you
do certification, you need a system to seal containers,
because anything certified will have a higher value.
You’ll be amazed at how 100 kilos of something that
got certified can turn into 1000 kilos…inventories have
a way of stretching themselves in this marketplace…”

The combination of a proliferation of standards and
corruption or poor management in many certification
systems means that all labels – good and bad – become
virtually meaningless to consumers. As a result, com-
panies trying to do the right thing do not get the bene-
fits of market differentiation, and are not able to sell
their products for a premium. As Cindy Angerhofer,
Director of Research at Tom’s of Maine said: “It is dif-
ficult to let consumers know that our end products are
more expensive because the company is trying to do the
right thing in growing the raw material. There are so many false claims around for organic material – some kind of intermediary system is badly needed.”

**Chain of Custody**

Chain of custody in the botanicals industry is extremely complex. The majority of material defies easy tracking, passing through numerous hands in raw, bulk form, before reaching a manufacturing company. Wild harvested material raises more potential problems, since most material is harvested over large areas, in remote communities, with few institutional and monitoring structures. Theoretically, it should be possible to track material back to growers, yet few mechanisms are currently in place to do so.

**Resource Rights and Social Impacts**

Certification has the potential to yield benefits for local communities. However, most wildcrafted botanical species are gathered by people living on the margins of formal economies who are not easily integrated into programs like certification that require management plans, a great deal of paper work, and monitoring and evaluation. Cases of unclear tenure, which are common with many botanicals, also prove challenging to incorporate into most certification programs. There are numerous and often invisible knock-on social effects that might result from certification and these should be carefully assessed on a case-by-case basis.

**Strategy #8: Domestication and sustainable management**

Domestication and sustainable management of wild populations was widely supported by companies, industry associations, research institutions, and NGOs. The average rating for this strategy was 4.5 – the highest ranking of all. Cultivation fits well with trends already existing in industry and allows for organic/biodynamic certification, greater quality control, and better checks on pricing and volume over time. Large companies tend to be very concerned about sustainability of their most popular products because they need large volumes of good quality material delivered in a timely fashion, and are often not comfortable relying on the open market for much of their supply.

However, species used in small volumes, with no ready supply of affordable cultivated material, are usually wildcrafted. In many cases – for example small-scale harvesting by herbalists, or harvesting by communities under some form of sustainability criteria or management plan – wildcrafting is a positive approach to sourcing. It can provide greater benefits for local livelihoods, and allows greater local control over the sourcing process. However, for species harvested without concern for long-term sustainability, particularly those in high demand and sold in the bulk market – such as muira puama (*Ptychopetalum olacoides*), rosewood (*Aniba spp.*), sandalwood (*Santalum spp.*), pau d’arco (*Tabebuia spp.*), and pygeum (*Prunus africana*) – wild-harvesting can have extremely negative effects on species populations. Industry will often absorb all the material it can get through the open market, and only when scarcity, quality-control, or price drive them to it, will they explore cultivation. Thus, big-selling species like ginseng (*Panax quinquefolius*) (figure 1), golden-seal (*Hydrastis canadensis*), and echinacea (*Echinacea spp.*) have benefited from the availability of domesticated material, but others like pygeum, yohimbe (*Pausinystalia johimbe*), and rosewood continue to be sourced primarily from the wild despite sustainability concerns.

![Figure 1. Weighing of ginseng roots at the Vermont Fur and Ginseng Auction (for CITES registration), Dec. 2001 (Photo: Alan Pierce).](image-url)

While supporting the principle of investments in domestication and sustainable management, supply companies surveyed tended to have a more jaundiced view of what is a fairly cut-throat business, and the ability of producers and well-intentioned intermediaries to navigate through it. One US grower reported that manufacturing companies regularly push to create over-supply in the market. Companies will, for example, place orders to buy 20,000 pounds of a particular plant for the following year when they only need 10,000 pounds. By spurring the market to over-produce a plant, the manufacturer can later pick and choose among suppliers to secure the lowest price.
Conclusion

Many companies realize the integral link between raw material sources and high quality end products, yet few have taken extra steps to insure that their materials are produced in ways that are environmentally sustainable and socially equitable. The industry’s “footprint” is significant, however, and raises serious concerns for species and population conservation, and the sustainability of local livelihoods based on harvesting or growing these plants. Although a few exemplary companies have sought to address these issues, our survey made apparent the small extent to which the industry as a whole has seriously considered the ecological and social implications of their sourcing practices, and the difficulties faced by companies trying to ‘do the right thing’. However, there is a great deal of interest both within and outside of industry, and a wide range of opportunities exist to improve industry’s relationship with its raw material sources, including the strategies discussed above. A collaborative approach between companies, industry associations, governmental organisations, NGOs, and others is required to make this leap into a different set of attitudes and practices.

Acknowledgements

Thanks are due to the Rainforest Alliance, which supported the research upon which this paper is based; to Plantlife, UK and the WWF People and Plants Initiative, which assisted with 13 company and 3 industry association interviews in the UK; IMAFLO-RA, which undertook 4 company surveys in Brazil; and Ruth Malleson and Angelica Rojas who undertook 16 surveys in Europe and Latin America, and contributed much as part of the project team.

For Sarah Laird’s address see list of members.

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The role of east and southeast Europe in the medicinal and aromatic plants’ trade

Dagmar Lange

Introduction

East and southeast European countries are a rich and often also a cheap source of medicinal and aromatic plants, for both domestic use and for export (LANGE 1998). The use of many species in folk medicine, the long tradition of herb production of which the majority is obtained from each country’s wild native sources, the importance of herbs as export products in the former Eastern Bloc, and the expanded trade system are characteristics of many, if not of most, countries in this region (BERNÁTH 1996, LANGE & MLADENOVA 1997, LANGE 1998, 2001). Moreover, some of the countries play a significant role in the international and European medicinal and aromatic plants market (LANGE 1998).

In this paper, the results of the trade analysis published in LANGE (1998) are up-dated, extended and focused on east and southeast European countries including Albania, Bulgaria, Croatia, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Macedonia, the Republic of Moldova, Poland, Romania, the Russian Federation, Slovakia, Slovenia, Turkey, and Yugoslavia. For this purpose, the international trade figures of the commodity group SITC 292.4 pharmaceutical plants compiled in the UNCTAD COMTRADE database by the United Nations Statistics Division, New York have been evaluated. Principally, the presented global trade figures are based on the export and import statistics of 162 countries for the period from 1991 to 1998, of which 110 countries reported an import and/or export of pharmaceutical plants. However, export and import figures of some of the east and southeast European countries are not available for the whole period, because these countries have first started to report their trade statistics according to the SITC or the HS during the 1990s. In these cases, at least incomplete figures of the east and southeast European trade in pharmaceutical plants are presented.

East and southeast Europe’s place in global trade

In the 1990s, the reported annual global importation of medicinal and aromatic plant material, based on the commodity group pharmaceutical plants, amounted on average to 400,000 t valued at USD 1,243 million (LANGE 2001). The international trade is dominated by only few countries: 85% of the worldwide importation was channelled to just 12 countries, and 12 countries were responsible for 82% of the overall world’s exportation (table 1).

No east and southeast European country is included in the world’s top 12 countries of import, and in 1998 only 3% of the global import volume was destined to east and southeast Europe. However, two southeast

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1 Standard International Trade Classification Revision 3. Commodity group 292.4 equates to HS (Harmonized Commodity Description and Coding System) 1211 plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered.
European countries, namely Bulgaria on 9th place and Albania on place 11, are among the world top 12 source countries of pharmaceutical plants. On average, both countries exported 6.2% of the export quantities of the 12 world-wide leading countries of export during the 1990s. Moreover, Poland is following on place 13 and Turkey on place 18 of the 110 countries reporting imports and/or exports of pharmaceutical plants. In 1998, not less than 14% of the global export quantities were exported from east and southeast Europe. With regard to the value, the shares are somewhat lower: Albania’s and Bulgaria’s average export values during the 1990s were only 4.5% of the value of the 12 world-wide leading countries of export, and in 1998, the value of the east and southeast European export commodities achieved about 12% of the global export value.

Table 1. The 12 leading countries of import and export of medicinal and aromatic plant material from 1991-1998.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>73,650</td>
<td>314,000</td>
<td>China</td>
<td>139,750</td>
<td>298,650</td>
</tr>
<tr>
<td>Japan</td>
<td>56,750</td>
<td>146,650</td>
<td>India</td>
<td>36,750</td>
<td>57,400</td>
</tr>
<tr>
<td>USA</td>
<td>56,000</td>
<td>133,350</td>
<td>Germany</td>
<td>15,050</td>
<td>72,400</td>
</tr>
<tr>
<td>Germany</td>
<td>45,850</td>
<td>113,900</td>
<td>USA</td>
<td>11,950</td>
<td>114,450</td>
</tr>
<tr>
<td>Rep. Korea</td>
<td>31,400</td>
<td>52,550</td>
<td>Chile</td>
<td>11,850</td>
<td>29,100</td>
</tr>
<tr>
<td>France</td>
<td>20,800</td>
<td>50,400</td>
<td>Egypt</td>
<td>11,350</td>
<td>13,700</td>
</tr>
<tr>
<td>China</td>
<td>12,400</td>
<td>41,750</td>
<td>Singapore</td>
<td>11,250</td>
<td>59,850</td>
</tr>
<tr>
<td>Italy</td>
<td>11,450</td>
<td>42,250</td>
<td>Mexico</td>
<td>10,600</td>
<td>10,050</td>
</tr>
<tr>
<td>Pakistan</td>
<td>11,350</td>
<td>11,850</td>
<td>Bulgaria</td>
<td>10,150</td>
<td>14,850</td>
</tr>
<tr>
<td>Spain</td>
<td>8,600</td>
<td>27,450</td>
<td>Pakistan</td>
<td>8,100</td>
<td>5,300</td>
</tr>
<tr>
<td>UK</td>
<td>7,600</td>
<td>25,550</td>
<td>Albania</td>
<td>7,350</td>
<td>14,050</td>
</tr>
<tr>
<td>Singapore</td>
<td>6,550</td>
<td>55,500</td>
<td>Morocco</td>
<td>7,250</td>
<td>13,200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>342,550</strong></td>
<td><strong>1,015,200</strong></td>
<td></td>
<td><strong>281,550</strong></td>
<td><strong>643,200</strong></td>
</tr>
</tbody>
</table>

These figures reveal clearly, that none of the east and southeast European countries are primarily consumer countries like Japan or Korea, but point them out as important suppliers of the raw material to the world’s medicinal and aromatic plants market.

East and southeast Europe’s place in Europe’s pharmaceutical plant trade

Europe is playing a significant role in the worldwide trade in pharmaceutical plants (LANGE 1998, 2001), as (i) Europe as a whole is responsible for one-third of the annual global importation, and one fifth of the annual global exportation, (ii) no fewer than five European countries, all of them EU Member States, are among the 12 world-wide leading countries of import, and (iii) the list of the top 12 countries of export includes three European countries. Within the European trade in pharmaceutical plants, east and southeast European countries are leading on the export side but not on the import side (see also LANGE 1998, 2001). This is described best by the following three facts:

1. The European export is dominated by countries of east and southeast Europe. They account on average for 50% of the total annual volumes exported from European countries. In 1998, east and southeast Europe exported 56,020t equal to even 56% (table 3). However, the east and southeast European share of Europe’s total export value of USD 320 Mio is only about 36% reflecting the low prices achieved for the plant material exported (see below).

2. In 1998, the import of east and southeast Europe amounted to 15,220t valued at USD 34,6 Mio. Compared to the total European import of 160,620t valued at USD 505,8 Mio their share is below 10%. Most European imports, almost 90% of the total European import, were destined to EU countries, above all to Germany (table 1; LANGE 1998, 2001).

3. Europe is clearly divided into source and consumer countries characterized either by positive resp. negative net imports (table 2; LANGE 1998). In 1998, there were only few east and southeast European countries found on the consumer country side, showing generally very low positive net imports (table 2). The highest ones show the Russian Federation with 2,308t and Slovakia with 1,502t, which is very low compared to Germany with 36,882t and France with 17,250t net imports (table 2). Further, Slovenia, Lithuania, Greece, and Latvia show positive net imports ranging from 50t to 500t. The remaining resp. the majority of the east and southeast European countries are found on the source country side (table 2). Those countries with the highest negative net import are Bulgaria (-15,446t), Albania (-7,954t), Poland (-6,773t), Hungary (-4,977t), and Turkey (-3,897t) being the most important European source countries.
for the commodity *pharmaceutical plants*. Compared to the net imports of 1996 (LANGE 1999, 2001), there are some changes with regard to the order, as Albania and Bulgaria changed the first two places and Hungary and Poland are now on place three and four. Further, Croatia, the Czech Republic, Romania, Macedonia, and Yugoslavia show net imports ranging from -700t to -2,100t. Accordingly, the major actors in this trade belong to the former Eastern Bloc.

### Table 2. Net import (in tonnes) of the commodity *pharmaceutical plants* (SITC.3: 292.4) of selected European countries. – Source: UNCTAD COMTRADE database (United Nations Statistics Division, New York).

<table>
<thead>
<tr>
<th>Country</th>
<th>Net imports (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>36,882</td>
</tr>
<tr>
<td>France</td>
<td>17,250</td>
</tr>
<tr>
<td>Italy</td>
<td>10,768</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>2,308</td>
</tr>
<tr>
<td>Slovakia</td>
<td>1,502</td>
</tr>
<tr>
<td>Turkey</td>
<td>-3,897</td>
</tr>
<tr>
<td>Hungary</td>
<td>-4,977</td>
</tr>
<tr>
<td>Poland</td>
<td>-6,773</td>
</tr>
<tr>
<td>Albania</td>
<td>-7,954</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>-15,446</td>
</tr>
</tbody>
</table>

In general, the east and southeast European countries are a cheap source for medicinal and aromatic plant material. On export, the average price per tonne amounted to USD 2,078 in 1998 equal to only two third of the average European export price of USD 3,225. Moreover, this figure is less than half of the German (USD 4,632/t) and French (USD 4,950/t) export prices, and only ⅓ of the Swiss export price (USD 9,930/t) which is the highest within Europe. However, there are some differences amongst the east and southeast European countries. In 1998, the value of the plant material exported from Poland was highest amounting at 2,605 USD per tonne. On export, Bulgaria still achieved USD 2,295/t and Hungary 2,015 USD/t. The lowest prices, only USD 1,535-1,540/t were payed for the commodities exported from Turkey and Albania.

Most exports of the east and southeast European countries are destined to Germany (BERNÁTH 1996, LANGE & MLADENOVÁ 1997, LANGE 1998). In 1996, Germany imported over 20,000t of *pharmaceutical plants* from these countries, which represented 64% of the total exports of east and southeast Europe. Germany’s imports from east and southeast European countries were six times higher than those of France or Italy, and 10 times higher than those of Spain (LANGE 1998). Above all, Germany exports *pharmaceutical plants* to central, western and southwestern European countries, thus acting as a link between the eastern and southeastern European market and the rest of Europe.

### Trade figures for selected east and southeast European countries

**Export:** In 1998, east and southeast European countries exported 56,020t of the commodity *pharmaceutical plants* (table 3) of a value of USD 116.4 Mio. Within the region, the leading country of export is by far Bulgaria, followed by Poland, Albania, Hungary, and Turkey. The export quantities of these five leading countries of export made up 80% of the total export of all east and southeast European countries.

Owing to unavailable trade figures for some of the countries in the beginning of the period 1991-1998, and owing to the trade changes at that time (BERNÁTH 1996, LANGE & MLADENOVÁ 1997, LANGE 1998, 2001), it is very difficult to assess the development of the quantities exported from east and southeast Europe during the 1990s. However, the export quantities increased by almost 40%, from 40,450t in 1995 to 56,020t in 1998 (table 4). During the 1990s, the Bulgarian exports of *pharmaceutical plants* increased by three times from 5,140t in 1993 to 15,450t in 1998. During the same time, Poland’s exports also showed a comparable increase, from 4,260t to 10,240t. Hungary, before 1990 for a long time the most important supplier of medicinal and aromatic plant material to the European market showed no increase, its exports fluctuated between somewhat below 4,000t to 6,170t. At least, Turkey’s exports in 1998 were one third higher than in 1993.

**Import:** In contrast to the exports, the imports of medicinal and aromatic plant material to east and southeast European countries are in general low. In 1998, only 15,220t of the commodity *pharmaceutical plants* of a value of USD 34.6 Mio have been imported to the whole region which is – compared to the 56,000t resp. USD 116.4 Mio plant material exported – less than one third (table 3). Whereas many countries showed nearly none or little imports during the 1990s, such as Bulgaria, Albania, Romania, Lithuania, and Latvia, there are Croatia and Turkey with annual imports ranging from 500t to 1,000t. Only Hungary, Slovakia, Slovenia, the Czech Republic, and above all Poland showed considerable annual imports during the 1990s. In 1998, Poland’s imports of *pharmaceutical plants* were highest importing 3,460t valued at USD 7,9 Mio, followed by the Russian Federation with 2,560t of a value of USD 8.5 Mio (table 3). Further, the imports of four further countries (Slovakia, the Czech Republic, Hungary, and Greece) exceeded 1,000t.
Medicinal and aromatic plants: Wild or cultivated origin?

The production of herbs relies to a large degree on wild-collection (LANGE 1998, KUPKE & al., 2000), but the ratio wild-collection:cultivation differs from country to country. For example, according to VASO (1997, see also LANGE 1998), in Albania most of the raw plant material in trade is sourced through wild-collection. The same applies to Turkey (ÖZHATAY & al. 1997, ATAY, in litt., 19.2.1998, LANGE 1998). In Bulgaria, not less than 75-80% of the quantity of medicinal and aromatic plant material in trade is obtained from wild stock (HARDALOV A1997), and in Hungary the share amounts to 30-50% (BERNÁTH 1996). According to LUTOMSKI & GORECKI (1999), in Poland, although being a country where medicinal and aromatic plants are cultivated on a huge area of about 30,000 ha, some 5,000t of plant material is sourced annually from the wild. In Slovakia, KUPKE & al. (2000) estimate the wild-collected plant material to 60-70%. Based on these figures and on the export figures of 1998 (table 3), the quantity of wild-collected herbs in east and southeast Europe in 1998 destined for export is estimated to at least 30,000-40,000t of dry plant material (the fresh material weighs two to three times more).

Table 3. Export and import figures of medicinal and aromatic plant material of east and southeast European countries in 1998.

<table>
<thead>
<tr>
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<td>Greece</td>
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<td>Lithuania</td>
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<td>Slovakia</td>
<td>480</td>
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<td><strong>Total: E+ SE Europe</strong></td>
<td><strong>15,220</strong></td>
<td><strong>34,616,000</strong></td>
<td><strong>Total: E+ SE Europe</strong></td>
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<td><strong>Total: Europe</strong></td>
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<td><strong>505,847,000</strong></td>
<td><strong>Total: Europe</strong></td>
<td><strong>99,230</strong></td>
<td><strong>320,026,000</strong></td>
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</table>


The high share of wild-collected herbs is only possible, as in many east and southeast European countries the income level is generally low, and collecting often provides a supplementary income to collectors who are mainly rural people, stockherders, villagers, retired people, or in many cases women and children, who frequently have a traditional knowledge of the plants (LANGE 1998). This makes at least some east and southeast European countries, for example Albania and Turkey, a very cheap source for medicinal and aromatic plant material.

Conclusion

During the 1990s, many of the east and southeast European countries increased their exports of herbs. However, this commodity had always been a very important export product of the countries of the former Eastern Bloc. The low export quantities in the beginning of the 1990s may be due to the fall of the communism and the subsequent changes in the trade structure of these countries and its actors in the herb market (BERNÁTH 1996, LANGE & MLADENOVA 1997, LANGE 1998, 2001). However, this is not provable on the base of the international trade statistics, as there are no exactly comparable import and export figures available for the time of the communism.

Owing to the expanding herb exports during the 1990s, and due to the fact that the east and southeast European countries are primary source countries for herbs, their production and purchase within these countries strongly increased. This extra demand is met i.a. by wild-collection. As a result, the threats that the biodiversity and the populations of wild medicinal and aromatic plant species in east and southeast Europe are facing through commerce (i.a. over-exploitation, destructive harvesting techniques, deregulation of state-controlled commerce) proliferated (BERNÁTH 1996, LANGE 1998). This applies in particular to Albania and Bulgaria, as both countries are important suppliers of herbs, the share of wild-collected plant material is very high, and the purchase and export of herbs increased dramatically during the 1990s.
tecton. Depending on each country’s legislation and administrative measures, protection ranges from controlled gathering to strict protection (LANGE & MLADENOVA 1997, LANGE 1998, 2000, 2001). However, the effectiveness of these regulations has to be evaluated, and since in future exploiting the wild resources will remain an important source for herbs in these countries, stricter measurements, if necessary, to ensure the long-time sustainability of the purchase of herbs have to be taken.

References


Hawkers of health: Johannesburg’s street traders of traditional medicine,

South Africa

Vivienne L. Williams

South Africa faces several challenges regarding the conservation of its natural resources, and an activity that is coming increasingly under the spotlight is the trade in traditional medicine. For many South Africans, traditional healers are the primary choice when it comes to selecting health care options. At least 12-15 million people per annum consult healers and use the prescribed herbal preparations. A rapidly growing population, a high rate of unemployment, and a low level of formal education (especially in rural areas), have contributed to the exploitation of economically valuable plants.

With the huge volume of plants being harvested annually and sold in the street markets of KwaZulu-Natal, Gauteng and Mpumalanga (provinces of South Africa), and the growing number of consumers for southern Africa’s floral resources, questions of whether harvesting for the medicinal plant trade is sustainable, and how one can achieve this, need to be addressed. The solution, however, is not straightforward. Sustainable utilisation in this context is a multidimensional challenge. Conservationists and ethnobotanists are able to make recommendations about possible solutions, for example identifying levels of threat to key species and possible cultivation alternatives. However, it is a far larger task to recognize the solutions regarding what motivates people to become involved in the medicinal plant trade as either consumers, traditional healers, traders or commercial gatherers. These factors include the affordability and
accessibility of basic primary health care, education, employment opportunities and the economic climate. In other words, conservation of biodiversity is not always the sole concern of the national Minister of Environmental Affairs, or the provincial Minister for Agriculture, Conservation and Environment.

A recent survey\(^1\) of 96 street traders was undertaken by the author for the Gauteng Directorate of Nature Conservation which highlighted the economic, and often desperate, conditions of Johannesburg’s ‘hawkers of health’ – the Faraday Street market traders located under a highway bridge at the southern end of Johannesburg (figure 1). Selling *umuthi*\(^2\) in a dirty, noisy, often cold and wet market where they compete with at least 160 other traders for customers is usually the last resort for many people in the search for employment, and certainly not their preference. The personal circumstances of these traders are described here to present an alternative view of the real people involved in South Africa’s hidden economy that contrasts with the popular picture of gratuitously destructive ‘eco-rapists’.

Many female traders interviewed during the survey told of the necessity to escape from abusive alcoholic husbands, where their income had been used to sustain their partners drinking habits. Johannesburg, paradoxically, was both close enough and far enough away from their homes in KwaZulu-Natal\(^3\) to be able to save what little money they earned (often R100 per week or less\(^4\)) in order to feed their families. One woman mentioned that she would much rather be a prostitute than sell plants at the Faraday market, but at 60 years old, she was too old and could no longer find employment as a domestic worker. In many respects, using the argument that harvesting traditional medicine is an environmentally destructive activity and should be stopped immediately is comparable to telling prostitutes that they should stop soliciting business just because it is morally wrong and they could contract HIV. Common to both scenarios is the tightening financial noose around their necks and employment within a risky illegal activity that brings short-term economic benefits, but long-term negative consequences. That is not to say, however, that these activities are entirely justified.

Regardless of the risks, people continue harvesting plants. One gatherer, a widow, had been caught, arrested and detained several times for collecting cycads. Interviewed just after being released for the fifth time (the fine having been paid by a fund set up by the Faraday Street traders), she vowed to continue doing her ‘job’ despite the risks because her family are more important than the intrinsic value of an ancient gymnosperm.

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1 A full trade and social survey was conducted in the market. The species sold, volumes traded, sources of supply and perceptions of scarcity and availability were among the data recorded. This report should be written up by March 2002.
2 ‘umuthi’ is the Zulu word for medicine
3 Johannesburg is about six hours drive from the areas in KwaZulu-Natal from where some of the harvesting occurs.
4 Exchange rate (February 2002): US$1 = R11.40

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Figure 1. Ntombi, a widow with 2 children and a trader in the Faraday Street traditional medicine market, Johannesburg, South Africa. Ntombi is a traditional healer, approximately 40 years old, has never been to school and earns less than R100 per week.

To a certain extent, the risks to gatherers harvesting for Faraday are greater than those for people supplying the Durban and Mpumalanga markets. Gauteng is not close to the source of supply for 80% of the plants sold in Faraday (because Johannesburg is an urban market, and source of employment for large numbers of migrant labourers), and there are inherent risks involved in transporting plants across provincial borders. Routine roadblocks set up by the Traffic Department for motorists along Oliviershoek and Van Reenen’s Pass (the border between the provinces of KwaZulu-Natal and Free State) more than occasionally apprehend vehicles loaded with plants bound for
Gauteng, and arrest the occupants of these vehicles. Faraday traders complain that they are being targeted more than their counterparts in KwaZulu-Natal and Mpumalanga, but the benefits obviously far outweigh the risks and the ‘trafficking’ continues.

Sixty-five percent of the traders in Faraday are women, often single and widowed. Many of them lost their partners during the political violence in KwaZulu-Natal in the 1980s and 1990s, thereby making them the sole breadwinners of often extended families. Ninety-five percent of the traders are from single-income households. Forty-one percent have never been to school, and an additional 31% only attended primary school at some stage.

Parallel to this, is migration into urban areas like Johannesburg in search of better opportunities because rural agriculture (or lack thereof) is failing to sufficiently support the rural population. To a certain extent, the medicinal plant trade has created a new class of migrant labourers that are economically active within the informal economy. In Johannesburg, the need for plant medicine creates a rural-urban employment chain that starts with the traditional healers (at least 18,000 in Soweto, a ‘Black township’ outside Johannesburg) who buy from traders in Faraday who in turn are supplied by an extensive network of commercial gatherers from around South Africa, Mozambique, Swaziland and Lesotho. Only 15% of the Faraday traders gather their own plants, the remainder either order plants from the commercial gatherers (34%) or gather very small quantities and order the rest (48%).

Plants reach the market by either bus or taxi. The Faraday Street traders committee have an arrangement with a local bus company to transport commercial gatherers and the plants they harvest between the market and the rural areas. Fifteen buses operate on a weekly basis between KwaZulu-Natal, Mpumalanga, the Eastern Cape and Free State. 70% of the traders make use of this service and buy plants from the loaded buses that arrive at the market every Friday.

By and large, the Faraday traders are a trusting community that look out for each other, even looking after and selling the plants of an adjacent stall to a customer if the owner is away. Given their economic circumstances, it is surprising that three-quarters of the traders don’t believe that there is competition between them, or any need for it either. The only day they quarrel is when the bus arrives on Friday and they compete to buy the freshly harvested resources.

Because the majority of traders are transient in Johannesburg and home is in KwaZulu-Natal or the Eastern Cape, the cost of transport is one of their many expenses. Rent, food and water are among the monthly costs that are paid out of their meagre incomes. 57% of the traders earn R100 or less per week before expenses, and a further 18% of the traders earn between R100 and R200 per week. Typical of their circumstances is the story of Ma Hlongwane. Ma Hlongwane is a Zulu trader, with a husband and three children back home in KwaZulu-Natal. She has never been to school, and is probably between the ages of 40 and 50. She earns less than R100 per week, although that fluctuates – especially from December to February, the worst months for business in the market. Ma’s meagre income is the only income in the family. She can only afford to go home every two months, and when she does, she and her three children gather the plants in the veld that she sells at the market. A return trip home will probably cost her R160. At night, Ma sleeps at the Mai Mai Bazaar several kilometres away and pays R50 per month for a place to sleep. She walks to work every day from Monday to Saturday because she can’t afford the R6 return taxi fare or the R5 return bus fare, and spends between R5 and R15 per day on food. After all her expenses, she is lucky if she takes home R100 per month to her family, often times it is less. Her story is not the exception to the rule.

Limited acts of plant ‘preservation’ in the market contribute in a very small way towards in situ conservation by limiting the volume of plants that are thrown away and hence the need to replace them by harvesting more. The quantity saved, however, is negligible when comparing the volumes harvested for the trade. Support from the Greater Johannesburg Metropolitan Council in 1996/97 contained mass wastage when traders were provided with lockers that enabled them to store the plants when they went home or on collecting trips, instead of throwing them away. When traders were asked what they did to ensure that there would be plants for them to sell in the future, 20% replied “nothing”, 5% believe that plant scarcity is impossible, and 30% said that they practised less destructive harvesting techniques (e.g. not ring-barking trees). Of concern were the 11% of the respondents who believed that harvesting and buying greater quantities plants was a way of ensuring they had plants to sell in the future. Clearly, some traders are aware of the long-term benefits of conservation action, but others have the simplistic view that stockpiling is a short-term answer to their long-term needs should they continue to trade. However, when asked what they would do if wild collected plants were no longer available to them to collect and sell, only 15% stated that they would find alternative employment or become unemployed and destitute – the remainder believed that they could accommodate
the shortages and continue trading because they have no alternatives.

One third of traders believe that current plant scarcities are related to the harvesting of plants for the trade and the need for people to earn a living by this activity. 20% are of the fatalistic opinion that natural disasters and “nature just being nature” are to blame, whilst “white farmers especially the Boers” are blamed for fencing the land and restricting access to badly needed plant resources.

It is becoming increasingly evident that cultivation and conservation of key species is a matter of urgency, a huge challenge, generally not always cost-effective and certainly not a quick fix solution. One view of cultivation, however, is that it detracts from the incentive to informally conserve habitats since it removes the impetus to protect individual species in situ. This view is becoming outdated, as evidenced by the growth in the trade and the challenges that conservation officials have in trying to contain the activities of commercial gatherers around the country.

80% of the traders in Faraday would buy plants cultivated by farmers, but only if it is less expensive than the cost of harvesting it themselves or buying them from gatherers. The effectiveness of a cultivated versus wild collected plants is a minor issue. Only 40% said that they would recognize the differences anyway. Plants are mostly used in combination, so mixing wild collected with cultivated plants can overcome any inevitable decrease in the quantity of active ingredient found in the cultivated plant.

Insisting that the only way to solve the conservation dilemma is by “educating Black people to understand” both the aesthetic and heritage value of indigenous resources, is paternalistic and insulting when you consider the economic circumstances provoking their entry into the medicinal plant market. The attitude also shows a lack of understanding and appreciation for the strong spiritual and cultural essence attached to the use of traditional medicine. Medicinal plants have both a monetary and primary health care value, and it is not a myth for some traders and gatherers that money grows on trees or in the ground. That does not mean to say that very little should be done just because millions of people in southern Africa use traditional medicine and are economically dependent on this trade of indigenous floral resources.

The primary health care service is provided because there is a market. Where there is a market there is a salesman. Where there is a salesman there is a product. How do we ensure that there is a sustainable supply of that product, and how have we failed in adequately protecting the source of the raw materials? Cultivation and conservation programs for plants must be linked with sustainable job creation and rural agricultural programs within the rural economy, and remove the incentive of commercial gatherers to harvest unnecessary quantities of medicinal plants. Any program must also target the appropriate people. 85% of Faraday’s traders do not harvest the plants they sell, and they rely on the vast network of almost unwitnessed and invisible commercial gatherers. The Faraday Street hawkers of health are merely resource brokers, and the most visible in the supply chain. Solutions lie outside of linear academic considerations, and within collaboration and the empowerment of communities, healers, gatherers and traders to manage their own business and take ownership and responsibility for their resources – a ‘renaissance’ of communal responsibility and ownership of biodiversity that could restore the dignity and pride of one of South Africa’s greatest assets – its people.

(This article was originally written for an annual publication published by the Endangered Wildlife Trust called ‘Vision’. It has been adapted slightly for this Newsletter.)

For author’s address see list of members.

Conservation of medicinal plants in Central America and the Caribbean: a GEF project begins

Sonia Lagos-Witte

Since 1982, the TRAMIL Programme (Scientific Research on Medicinal Plants in the Caribbean Basin) has worked to conserve traditional community knowledge of folk remedies. The main objective of the TRAMIL Programme has been to evaluate safety and efficacy of popular therapeutic traditions, and to encourage national health policies that include validated traditional medicine in primary health care programmes. These scientific studies are part of an interdisciplinary programme of research on the ethnopharmacology and traditional health practices of communities in the Caribbean Basin and Central America, conducted by a network of collaborators, co-ordinated by enda caribe, an international environmental NGO. The TRAMIL network currently links public and private research organizations, non-government organizations concerned with biodiversity conservation and public health, public health agencies, and local communities. The TRAMIL Programme published the Caribbean Pharmacopoeia (Farmacopea Vegetal Caribeña) in 1996 (ROBINEAU 1996) as an important reference for the development of community health education programmes.
While the principal interest of the TRAMIL Program has been local health and national health policy, members of the TRAMIL network have been attentive to conservation concerns and the Programme has included a variety of activities related to conservation of medicinal plants. Homegardens and agroecological demonstrative gardens have been established, such as the TRAMIL agroecological garden in Límon, Costa Rica (Valverde & Ocampo 1996). In Guatemala, Nicaragua and Honduras, TRAMIL scientists have carried out studies focused on the conservation status of TRAMIL-plants (Lagos-Witte 1992, House & Lagos-Witte 1989, 1995; Tercero 1996, Duero & López 1996, Giron et al. 1997). In the Biosphere Reserve of Río Platano, Honduras, TRAMIL started a community-oriented ethnobotanical project (Lagos-Witte et al. 1995) that has become an example of how local people can contribute to their own floristic inventory and conservation of medicinal plants (Lagos-Witte 1997). The community of Las Marias, in Río Plátano has established a botanical garden in a mature secondary forest of Cecropia trees. These efforts have been supported by IDRC-Canada (since 1994), by UNESCO, WWF, and Kew through the People and Plants Initiative, by PREBELAC (a project of the New York Botanical Garden), and by the Biodiversity Support Programme of WWF, US-AID, and WRI.

In the Dominican Republic a project on sustainable management of Pimenta racemosa is promoting educational activities and conservation actions to recover the natural populations of this species endemic to the island of Hispaniola, over-exploited since 1940. Several local organizations – Naturaleza, Pronatura and enda caribe – are collaborating to support this work. Through its ethnopharmacological surveys, the TRAMIL Programme encourages communities to use sustainable harvest methods. The TRAMIL Dissemination Programme includes information about conservation in videos and other popular educational materials. TRAMIL is also involved in curriculum development with universities in Central America, where young biologists, chemists, and students of medicine are trained ethnopharmacology, conservation and community development.

A new regional medicinal plant conservation project

In Honduras, Nicaragua, Panama, and the Dominican Republic, four of the countries in which the TRAMIL Program is currently well established in local and national institutions, interest within government ministries in linking sustainable use of biodiversity to other community benefits, such as public health, has been particularly encouraging. TRAMIL has recently received funding from the Global Environment Facility (GEF) for a Medium Size Project: “Biodiversity Conservation and Integration of Traditional Knowledge on Medicinal Plants in National Primary Health Care Policy in Central America and Caribbean” which will add a forest ecosystem conservation component to the existing regional applied research programme on traditional remedies derived from medicinal plants. The project has been developed by the enda-caribe regional office in Nicaragua, with technical assistance from the Medicinal Plant Specialist Group (MPSG). The United Nations Environment Program (UNEP) is the implementing agency for this project.

The primary objective of this project is to support the conservation and sustainable use of medicinal plants important to primary health in key forest eco-regions in Honduras, Nicaragua, Panama, and the Dominican Republic by: assessing their conservation status and management needs; working with indigenous and local communities to develop appropriate management strategies; and working with research institu-
tions, NGOs, and national government agencies to integrate conservation and management of medicinal plants with rational use of traditional remedies in primary health care (PHC). The project will focus on activities in these four countries, but also aims to develop models and expertise that will be more broadly useful within the region. A preliminary selection of project sites has been made from globally significant eco-regions identified as target areas for project implementation within each of the four countries involved in developing this project:

- **Honduras:** Biosphere of Rio Plátano (Miskito and Pech communities/Mosquitia, rainforest), and South West Honduras (Lenca community, pines forest ecosystem) (figure 1);

- **Nicaragua:** Biosphere of BOSAWAS (Mayagna and Miskito communities/Mosquitia, rainforest), and Las Segovias in North West (Mestizo communities/pines forest ecosystem);

- **Panamá:** Darién tropical forest (Embera communities), and Ngöbe Buglé (Teribe communities/Atlantic coast rain forest);

- **Dominican Republic:** National Park del Este and Zambrana Cotuí (Mestizo communities).

These eco-regions are all forested lands inhabited by indigenous populations (Miskito, Pech communities in Mosquitia, Honduras; Mayanga Sauni As and Miskito communities in Bosawás, Nicaragua; Kunas, Guayami, Teribe communities in Ngöbe-Buglé and Emberá Darién, Panama; mestizos in Las Segovias in Nicaragua and Zambrana/National Park Este in the Dominican Republic). These forests contain high levels of diversity of non-wood forest products, including medicinal plants (DAVIS et al. 1997).

The project will build on a number of existing surveys and conservation assessments. A recent assessment of global biodiversity “hotspots” (MYERS et al. 2000) ranks forested areas of Central America (Mesoamerica) and the Caribbean second and third in global significance (after the tropical Andes) in total species and endemism. Each of the eight sites selected for this project falls within a forest eco-region having global or regional significance, according to an assessment conducted by WWF and the World Bank, which identified high global, regional, and national priority terrestrial eco-regions in Latin America and the Caribbean (DINERSTEIN et al. 1995).

A preliminary conservation assessment of the TRAMIL-Caribbean Pharmacopoeia (OCAMPO & ROBLES 1999) identifies forests as important habitats and conservation targets for medicinal plants in the region, but emphasizes the universal lack of survey and inventory data for medicinal plants (LAGOS-WITTE 1994). This scarcity of basic inventory data is a general problem globally. A global assessment of “Centres of Plant Diversity” undertaken by WWF and IUCN – The World Conservation Union (DAVIS et al. 1997) recognizes the contribution of medicinal plants to overall species diversity in important forest eco-regions, but acknowledges the lack of basic inventory and conservation status information about this economically important group of species.

Many medicinal plant species have been extracted from their natural habitats without controls on harvest. Some of these have been over-exploited or are virtually extinct. An important example from the TRAMIL pharmacopoeia is the species known as zarzaparrilla (Smilax sp.). Vines in the genus *Smilax* are harvested for their medicinal roots and appear to be overexploited in the whole of the Caribbean region. In Guatemala and Costa Rica this is one of the most commercialized medicinal plant taxa, considered to be highly at risk of overexploitation (GIRON et al. 1997, OCAMPO & DURO 1994, OCAMPO & ROBLES 1999). The taxonomy of the genus is not clear and many problems are found in the classification of its species. Some of the species reported in the source literature to be growing in Central America and the Caribbean are included in table 1.

<table>
<thead>
<tr>
<th>Species</th>
<th>Region</th>
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</thead>
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<tr>
<td><em>Smilax domingensis</em> Willd.</td>
<td>Mexico to Honduras, Cuba, Dominican Republic, Haiti, Puerto Rico and Jamaica.</td>
</tr>
<tr>
<td><em>Smilax havanensis</em> Jacq.</td>
<td>Southern Florida and the Keys, the Bahamas, Turks and Caicos Island, Cuba and Hispaniola, Puerto Rico, the Virgin Islands and St. Martin.</td>
</tr>
<tr>
<td><em>Smilax lundellii</em> Killip &amp; Morton</td>
<td>Guatemala</td>
</tr>
<tr>
<td><em>Smilax mexicana</em> Griseb.</td>
<td>Mexico to Venezuela.</td>
</tr>
<tr>
<td><em>Smilax papyracea</em> Poir.</td>
<td>Native from Mexico to central Brazil. Cultivated in Haiti.</td>
</tr>
<tr>
<td><em>Smilax regelii</em> Killip &amp; Morton (<em>S. ornata</em> Hook. f.)</td>
<td>Belize to Colombia. Cultivated commercially in Jamaica</td>
</tr>
<tr>
<td><em>Smilax spinosa</em> Mill</td>
<td>Guatemala</td>
</tr>
</tbody>
</table>

**References**


For author’s address see list of members.

A project of indigenous communities in Namibia to cultivate *Harpagophytum procumbens*

**F.F. Kumba, J.Z.U. Kaurivi & H. Katjivena**

*Harpagophytum procumbens*, devil’s claw, is a wild medicinal plant native to the Kalahari regions of Southern Africa. Extracts from the plant’s storage tubers are used in the treatment of rheumatism and other painful conditions (BAGHDIKIAN et al. 1997, CHRUBASIK et al. 1996). The therapeutic efficacy of the drug appears associated with its anti-inflammatory, analgesic and antiphlogistic properties. The plant has two types of storage root tubers: lateral-root tubers that are recommended for medicinal purposes, and taproot tubers that must be left undisturbed for the regeneration of the plant after harvest. Tuber harvesting is done by indigenous communal farmers.

The dilemma associated with commercial exploitation of devil’s claw revolves around the unsustainable harvesting of its storage tubers (LE LOUP 1984), damage done to the local environment as the result of huge pits left by harvesters, and discrepancies in levels of earnings accruing to indigenous harvesters from trade in the product HACHFELD (1999, unpublished report; WYNBERG 2002).

Many authors, including SCHNEIDER (1997) and MARSHALL (1998), recommended sustainable harvesting as a conservation strategy for the plant in its natural habitat. According to this strategy, only lateral root tubers are dug out during harvesting. Any accidentally uprooted taproot tubers, together with seeds found in the immediate surrounding, are replanted in situ and covered with soil. This strategy ensures that old plants regenerate or are replaced by newly germinated seedlings if the old tuber died due to damage sustained during harvesting. The practice also ensures that pits created during harvesting are recovered. A current project, funded by the German government through the Bundesamt für Naturschutz, monitors the population status and impact of harvesting on growth rates of devil’s claw in Namibia. Once finished this study will provide a better understanding of the amount of the medicinal plant still in the wild.

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**Taxon File**
The enlisting of the plant as protected species under the Nature Conservation Ordnance in 1975 and the subsequent permit system introduced for harvesting devil’s claw are additional measures taken by the Namibian government for protection of the medicine (Namibia National Devil’s Claw Stakeholders Workshop Proceedings 1999). However, some unscrupulous harvesters do not adhere to this practice (Kumba et al. 2000). The nature of communal land tenure makes it difficult to enforce the sustainable harvesting technique advocated.

Figure 1. Ms. Kahipura attends to her field of replanted devil’s claw in the village of Outa in the east of Namibia. Note that part of her maize crop was grown on the same plot. (Photo: Kumba 2001)

Among other measures, the Namibia National Devil’s Claw Stakeholders Workshop (1999) recommended cultivation as a possible conservation strategy for the medicinal plant. Several attempts to grow the plant produced mixed success rates (De Bruine & Clark 1976, Burghouts 1985, Nott 1986, Marshall 1998). In Namibia, clandestine successful cultivation trials have been reported in commercial farming circles but results have largely remained unknown to the general public. A major difficulty confronting cultivation trials was the low germination rates exhibited by devil’s claw seeds (Veenendaal 1984, De Jong 1985). Recently, mass production of devil’s claw seedlings for commercial cultivation was reported in South Africa (von Willert et al. 2002). Again techniques used remain confidential.

Several authors (Hachfeld 1999, Wynberg 2002) have pointed at the unfavourable levels of earnings paid to indigenous harvesters, the local owners of traditional knowledge associated with the medicinal value of the plant, as a result of current trade arrangement for the product. This arrangement does not encourage local farmers to adopt recommended conservation strategies. Communal farmers are tempted to remove all tubers in order to maximize harvest for increased sales.

This paper reviews the results of a local initiative by a team composed of researchers from the University of Namibia and the Ministry of Agriculture, Water and Rural Development, together with local farmers in Okakarara communal farming district, undertaken during the 2000-2001 season. The project included cultivation trials on experimental station and on communal farms in Okakarara district. It also included regrouping and reorganization of communal farmers to strengthen their bargaining position in the devil’s claw trade as well as improving local capacities to take charge of conscious conservation efforts for the medicine.

Cultivation trials started during 2000 with the participation of local farmers in Okakarara and at the experimental farm at Ogongo, in the north of the country, demonstrated the possibility of domesticating the medicinal plant. In this undertaking, both taproot and lateral root tubers, harvested in the wild, were replanted separately. In both locations, replanted taproot tubers subsequently regenerated new shoots and developed into new plants. A sense of ownership towards the transplanted plants was obviously seen in all participating households. Female members of the households showed special interest in caring for the cultivated plants (figures 1 & 2). These indicate that cultivation of devil’s claw in Okakarara district is possible and acceptable to the communal farmers. According to Schneider (1997), death of the taproot tuber enables seedlings normally suppressed by root competition to get established and replace the old plant. This shows that the harvesting of taproot tubers in the wild for replanting on private fields can be a short-term option from training and acquainting communal farmers with cultivation techniques with limited damage to the wild population of the plant.

Figure 2. Ms. Kazetjikuria and her daughter admire their field of devil’s claw in the village of Okarokape in the east of Namibia. Note depressions made around plants to hold water. (Photo: Kumba 2001)

The ability of taproot tubers to regenerate was found to diminish depending on the degree of damage sus-
tained by the tuber during harvesting. Few old lateral root tubers were found to develop new shoots at the experimental farm. It was, however, not certain if these were real lateral roots and not taproots. If confirmed, the use of mature lateral root tubers for replanting on private fields would become a better option for propagation than harvested taproot tubers. Still the best method for cultivation on a commercial scale should be based on mass production of seedlings. As pointed out by WYNBERG (2002), it is important to share information and coordinate regional efforts in research intended to increase seedling production for commercial cultivation.

A stakeholders-workshop organized by this project for Okakarara communal farmers in November 2000 to examine constraints associated with devil’s claw exploitation brought together participants from all interested groups in the business. Representatives of local harvesters constituted a big proportion of the workshop participants. Other participants included representatives of the local farmers’ association, exporters and middlepersons in the business, local political cadres, Namibia Devil’s Claw Working Group formed during the Namibia National Devil’s Claw Stakeholders Workshop (1999), the Namibia Botanical Research Institute, University of Namibia, Ministry of Agriculture, and Ministry of Trade and Industry. Following recommendations of the workshop, harvesters in the district elected a 5-persons committee from within their community. The committee’s objectives are:

- to coordinate training activities for harvesters in conservation and sustainable harvesting techniques;
- to negotiate favourable terms of remuneration to local harvesters;
- to eliminate the need for too many middlepersons in the business;
- to organize harvesters to engage as a cooperative group in the export market for devil’s claw; and
- to explore possibilities for local value adding.

During 2001 the committee organized one training workshop in sustainable harvesting for which resource persons from the Namibia Devil’s Claw Working Group were invited as facilitators. They also negotiated better pricing for harvested products at the end of the 2000-harvest season. Contacts were established with the Ministry of Trade and Industry for the registration of a devil’s claw cooperative export company. They are also establishing contacts with harvesters in other parts of the devil’s claw producing regions of the country to join their group.

During the cultivation trials, some farmers intercropped devil’s claw with local food crops (figure 1). This is an indication that the cultivation of the medicinal plant as a cash crop will not interfere with traditional crop farming activities and food security mechanisms. The same fields used for crops such as maize could be used for devil’s claw. As the medicine is a deciduous creeping perennial plant, fields, where it is planted, could be utilized for different crops in different years without disturbing the plants. Farmers appear more likely to adopt sustainable harvesting techniques on their own fields rather than in the wild. The study concluded that local interest in conservation and cultivation efforts will increase among communal farmers if they are fairly remunerated for their harvests.

Acknowledgement

The study was funded by the Swedish Local Environment Fund through the Namibia Nature Foundation. The cooperation of local farmers in Okakarara district is appreciated. Useful advice was received from the Namibia Devil’s Claw Working Group.

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**Conferences and Meetings**

**Coming up**

Natalie Hofbauer


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% Ethnopharmacology appliquéd. 16-21 September 2002, Metz, France.

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% VIII Congreso Latinoamericano de Botánica & II Congreso Colombiano de Botánica. 13-18 October 2002, Cartagena de Indias, Colombia (see also Chair’s note, page 2).

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% 12th meeting of the Conference of the Parties to CITES. 3-15 November 2002, Santiago, Chile.

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% Cucurbitaceae 2002 Conference. 8-12 December 2002, Naples, Italy.

*Contact:* Don Maynard or Beth Miller-Tipton o Fax: +1/352/392-9734 • Email: bmillertipton@mail.ifas.ufl.edu.

% Joint International Conference South African Association of Botanists & The International
Report of the CAMP Workshop in Nepal

Nirmal Bhattarai, Madhav Karki & Vinay Tandon

Introduction

Nepal has an age-old tradition of using plants in the traditional (local) healing systems that are closely intertwined with the national culture. The country is also a leading supplier of important medicinal herbs to the Indian and other international markets. The collection, transportation and trade of commercially valuable medicinal and aromatic plants have long been a steady basis of the rural household economy. Due to increase in population, accompanied by development pressures, the country’s wild plant resources are shrinking fast, critically endangering many high value medicinal plants.

Although numerical data are lacking, there is ample evidence that survival of many wild medicinal plant species is threatened by over-exploitation, deforestation and other forms of habitat destruction. It is essential to take stock of the information available to evaluate the threat status of Nepal’s medicinal and aromatic plant species, to identify the information gaps, and to understand the conservation needs of these important resources. In Nepal, as in many countries, it is also essential to develop effective ways to include socio-economic information and expertise in this undertaking.

The CAMP process

The Conservation Assessment and Management Plan (CAMP) workshop process was designed by the Conservation Breeding Specialist Group (CBSG) of the IUCN – the World Conservation Union to direct limited information and resources toward evaluation of extinction risk and to plan adequate conservation measures for the species assessed. The CAMP process has been applied successfully to assess the threat status of the medicinal flora of several regions in India e.g., South India, North India, Himachal Pradesh and Maharashtra.

The CAMP process uses the IUCN Red List categories and criteria to evaluate baseline information gathered on the taxa included in the assessment (IUCN 2001). Information required to assign Red List threat categories includes knowledge of changes in population size, extent of occurrence and area of occupancy, and magnitudes of habitat disturbance, including human interference and use patterns. The objective of the CAMP workshop process is, to determine the extent of existing and potential threats to the taxa being assessed and to propose plans for their conservation and management. Gathering and evaluating the quantity and quality of information available are important steps in the CAMP process that must take place in advance of the assessment workshop.

Pre-CAMP fieldwork

A team of 10 experienced field botanists and foresters gathered the species-related biological information available, which is a standard and essential step in the CAMP process. They also gathered socio-economic data by using Rapid Rural Appraisal (RRA) techniques with villagers, collectors, traders, traditional healers, Community Forestry personnel, NGOs, and government institutions from different geographical locations in Nepal. This innovative step provided more local knowledge of population and habitat changes over...
A pre-CAMP workshop was held at Dhulikhel, Nepal, 9-10 December 2000, to provide the participants with a thorough knowledge of the CAMP workshop process and application of the current IUCN Red List criteria, and to prepare a short-list of medicinal plants with sufficient data for assessment in the CAMP workshop. Participants included 22 Nepalese botanists and foresters who are involved in field-based research on medicinal and aromatic plants of the country. During the pre-workshop a list of 77 prioritized medicinal plant species was provided to the participants.

The Pokhara CAMP

The main CAMP workshop to assess the conservation and management status of medicinal and aromatic plants of Nepal was held at Pokhara, Nepal, 18 to 20 January, 2001. It was organized by the Medicinal and Aromatic Plants Program in Asia (MAPPA), the International Development Research Centre (IDRC) in collaboration with the Ministry of Forests and Soil Conservation, His Majesty’s Government of Nepal. The workshop was held with technical support from the Medicinal Plant Specialist Group (MPSG).

There were 48 participants from 10 countries, including Bangladesh, Bhutan, Canada, Denmark, France, India, Nepal, Pakistan, Sri Lanka, and the United Kingdom. Four participants represented IDRC’s South Asia Regional Office (SARO), based in New Delhi, India. Among the participants, eight persons are members of the MPSG. Most of the pre-CAMP participants also participated in the Pokhara CAMP. The participants came from a wide range of professional disciplines, including field botany, taxonomy, ethnobotany, anthropology, traditional medicine, forestry, wildlife, plant research, conservation biology, medicinal plant trade, herbal pharmaceutical and biodiversity disciplines. Mr. Vinay Tandon, Mr. D. K. Ved and Dr. Nirmal Bhattarai facilitated the workshop.

Table 1. Details on plant species at Pokhara CAMP (2001)

<table>
<thead>
<tr>
<th>Plant species/family</th>
<th>Habit</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critically endangered (CR)</strong></td>
<td></td>
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<tr>
<td><em>Michelia champaca</em> (Magnoliaceae)</td>
<td>T</td>
<td>Broad</td>
</tr>
<tr>
<td><em>Pterocarpus marsupium</em> (Papilionaceae)</td>
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<td>Broad</td>
</tr>
<tr>
<td><em>Rauwolfia serpentina</em> (Apocynaceae)</td>
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<td>Broad</td>
</tr>
<tr>
<td><strong>Endangered (EN)</strong></td>
<td></td>
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<tr>
<td><em>Aconitum balangrense</em> (Ranunculaceae)</td>
<td>H</td>
<td>Nepal</td>
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<tr>
<td><em>Alstonia nerifolia</em> (Apocynaceae)</td>
<td>T</td>
<td>EH</td>
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<tr>
<td><em>Corydalis megacalyx</em> (Papaveraceae)</td>
<td>H</td>
<td>Nepal</td>
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<tr>
<td><em>Crataeva unilocularis</em> (Capparidaceae)</td>
<td>T</td>
<td>Broad</td>
</tr>
<tr>
<td><em>Dactylorhiza hatagirea</em> (Orchidaceae)</td>
<td>H</td>
<td>HKH</td>
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<tr>
<td><em>Dioscorea deltoidea</em> (Dioscoreaceae)</td>
<td>C</td>
<td>Broad</td>
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<tr>
<td><em>Ephedra intermedia</em> (Ephedraceae)</td>
<td>H</td>
<td>WH</td>
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<tr>
<td><em>Gloriosa superba</em> (Liliaceae)</td>
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<td>Broad</td>
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<tr>
<td><em>Heracleum lallii</em> (Umbelliferae)</td>
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<td>Nepal</td>
</tr>
<tr>
<td><em>Opreculina turpethum</em> (Convulvulaceae)</td>
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<td>Broad</td>
</tr>
<tr>
<td><em>Oroxylum indicum</em> (Bignoniaceae)</td>
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<td><em>Otochilus porrectus</em> (Orchidaceae)</td>
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<td>HKH</td>
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<tr>
<td><em>Swertia angustifolia</em> (Gentianaceae)</td>
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<td>HKH</td>
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<tr>
<td><em>Taxus wallichiana</em> (Taxaceae)</td>
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<td>Broad</td>
</tr>
<tr>
<td><strong>Vulnerable (VU)</strong></td>
<td></td>
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<tr>
<td><em>Aconitum heterophyllum</em> (Ranunculaceae)</td>
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<td><em>Aconitum spicatum</em> (Ranunculaceae)</td>
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<tr>
<td><em>Allium hypsistum</em> (Amaryllidaceae)</td>
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<td><em>Alstonia scholaris</em> (Apocynaceae)</td>
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<td><em>Arnebia benthamii</em> (Boraginaceae)</td>
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<td><em>Asparagus racemosus</em> (Liliaceae)</td>
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<td><em>Butea monosperma</em> (Papilionaceae)</td>
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<td><em>Curculigo orchoides</em> (Hylocomiaceae)</td>
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<td><em>Delphinium himalayai</em> (Ranunculaceae)</td>
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<td>Nepal</td>
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<tr>
<td><em>Ephemerantha macraei</em> (Orchidaceae)</td>
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<td>EH</td>
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<td><em>Fritillaria cirrhosa</em> (Liliaceae)</td>
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<td>EH</td>
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<tr>
<td><em>Nardostachys grandiflora</em> (Valerianaceae)</td>
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<tr>
<td><em>Panax pseudo-ginseng</em> (Araliaceae)</td>
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<td><em>Paris polyphylla</em> (Liliaceae)</td>
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<td><em>Neopicrorhiza scrophulariformis</em> (Scrophulariaceae)</td>
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<td><em>Piper longum</em> (Piperaceae)</td>
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<td><em>Podophyllum hexandrum</em> (Berberidaceae)</td>
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<td><em>Rheum australe</em> (Polygonaceae)</td>
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<td><em>Rheum nobile</em> (Polygonaceae)</td>
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<td>EH</td>
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<tr>
<td><em>Rubia manjith</em> (Rubiaceae)</td>
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<td><em>Swertia chirayita</em> (Gentianaceae)</td>
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<td><em>Tinospora sinensis</em> (Menispermaceae)</td>
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<tr>
<td><em>Valeriana jatamansii</em> (Valerianaceae)</td>
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</table>

continued...
The CAMP workshop, through focused discussions in five working groups, assessed the threat status of 51 medicinal plant species belonging to 41 genera and 28 families. Each group’s assessment was reviewed by another working group. Assignment of the final threat category was made in a plenary session by consensus of the participants. These results are shown in table 1.

The medicinal plant species assessed represent every geographical region and climatic zone of Nepal. Considering the global distribution patterns, 6 species are endemic to Nepal, 10 species are endemic to the eastern Himalaya, 3 species to the western Himalaya, 16 species to the Hindu Kush Himalayan range. The remaining 16 species have broader areas of distribution.

Considering growth habit, there are 9 trees, 2 shrubs, 4 annual herbs, 4 biennial herbs, 5 climbers; the rest are perennial herbs. All the species assessed are used locally for medicinal and other purposes. However, a large number of these species are used in trade, and some also are found in traditional remedies as adulterants or substitutes.

The threat categories assigned to the 51 medicinal plant species assessed are: Critically Endangered (CR) – 3 species; Endangered (EN) – 14; Vulnerable (VU) – 23 species; Near Threatened (NT) – 3 species; Least Concern (LC) – 1 species, and Data Deficient (DD) – 7 species.

Table 1. (...continued)

<table>
<thead>
<tr>
<th>Plant species/family</th>
<th>Habit</th>
<th>Distribution</th>
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<tbody>
<tr>
<td>Jurinea dolomiae (Asteraceae)</td>
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<tr>
<td>Meconopsis dhwojii (Papaveraceae)</td>
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<td>Nepal</td>
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<tr>
<td>Rheum moorcroftianum (Polygonaceae)</td>
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<td>WH</td>
</tr>
<tr>
<td>Arisaeoma costatum (Araceae)</td>
<td>H</td>
<td>HKH</td>
</tr>
<tr>
<td>Aconitum bisma (Ranunculaceae)</td>
<td>H</td>
<td>EH</td>
</tr>
<tr>
<td>Aconitum ferox (Ranunculaceae)</td>
<td>H</td>
<td>EH</td>
</tr>
<tr>
<td>Lilium nepalense (Liliaceae)</td>
<td>H</td>
<td>HKH</td>
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<tr>
<td>Maharanga bicolor (Boraginaceae)</td>
<td>H</td>
<td>EH</td>
</tr>
<tr>
<td>Maharanga emodi (Boraginaceae)</td>
<td>H</td>
<td>HKH</td>
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<tr>
<td>Pongamia pinnata (Papilionaceae)</td>
<td>T</td>
<td>Broad</td>
</tr>
<tr>
<td>Swertia multicaulis (Gentianaceae)</td>
<td>H</td>
<td>EH</td>
</tr>
</tbody>
</table>

Abbreviations:

Habit: T (Tree); S (Shrub), C (Climber); TH (Trailing herb); EH (Epiphytic herb); H (Herb).

Distribution: EH (Eastern Himalaya); WH (Western Himalaya); HKH (Hindu Kush Himalaya).

The final report of the Pokhara CAMP workshop has been produced for distribution. Contact: Dr. Madhav Karki • MAPP Program Coordinator • IDRC/SARO • 208 Jor Bagh • New Delhi – 110 003 • India • E-mail: mkarki@idrc.org.in.

For bibliographic reference see also column Reviews and Notices of Publication in this issue.

References


International workshop on endangered medicinal plant species in Himachal Pradesh

Hemant K. Badola

As one amongst the top repositories of medicinal herbs the state of Himachal Pradesh in Himalaya is one of the major sources of raw material to the global market. Unsustainable extraction of medicinal herbs has led to the endangerment of several high value taxa. Ex-situ cultivation through community involvement is regarded as a possible solution to meet raw material market demand and to dilute in-situ extraction pressure. Different groups felt an urgency for a committed action for the conservation of those valuable medicinal resources and a prioritization of endangered medicinal plants for Himachal Pradesh.

With this view, a workshop on "Endangered Medicinal Plant Species in Himachal Pradesh" was held at G.B. Pant Institute of Himalayan Environment & Development, Mohal-Kullu, H.P., India from 18-19 March 2002. From India and abroad over 40 experts from diverse disciplines attended the workshop being a forum to scientists and various stakeholders.

The inaugural session, in which the objectives of the workshop were presented was followed by four technical sessions on: (i) Endangered species diversity, characterisation and evaluation, (ii) Production
through cultivation, (iii) Trade, linkages, and ethics, (iv) Conservation approaches.

In the concluding plenary session, endangered medicinal plant taxa for immediate action for conservation through ex-situ cultivation were prioritized in an open-house discussion for all participants. The key factors, viz technological feasibility, economic viability, ensured marketing and farmers' acceptance available for each of the prioritised taxa, were taken into consideration. Various steps were identified and agreed to be taken up by various identified partners and for that a pilot funding was in place. At the end of the workshop, an expert committee drafted the Action Plan to carry forward the conservation programme in Himachal Pradesh.

Being able to raise the issues of local and global interests by bringing together different stakeholders and the forum with special emphasis upon the involvement and the crucial role of indigenous community in the conservation of endangered medicinal plants made the workshop highly productive.

The proceedings along with the Action Plan will be available for global release very soon.

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Symposium “Industrial leadership for the preservation of medicinal and aromatic plants”

Michael McGuffin

The Board of Trustees of the American Herbal Products Association (AHPA) has formally endorsed a Consensus Agreement that emerged from a remarkable gathering in Philadelphia, USA, on 26-27 February 2002 entitled “Industrial Leadership for the Preservation of Medicinal and Aromatic Plants”.

AHPA and many of its members have been leading participants in addressing the issue of sustainable use of wild-harvested plants from a more and more crowded planet. AHPA's Code of Ethics embraces stewardship of wild plants, and earliest trade recommendation, adopted in 1988, encourages our members to refrain from using wild lady’s slipper root (Cypripedium spp.). By endorsing the agreement from the Philadelphia conference, AHPA has now clearly stated that we are all stakeholders in the preservation of the plants that we use. AHPA has also been an active member since 1998 of the Medicinal Plant Working Group (MPWG), an organization of government and non-government cooperators working collectively to ensure the preservation of our ecosystem. It was the MPWG that facilitated the symposium in Philadelphia, while AHPA's staff provided administrative management.

Over 100 people came together for this event, including experts in the fields of conservation, cultivation and pharmacognosy, as well as representatives from the herbal industry and several federal agencies. In addition, an honored place was reserved for indigenous Native American elders.

The Consensus Agreement that grew out of the conference, and which AHPA's Board has now endorsed, reflects the common goals of its participants and includes the following elements:

1. We endorse the Plant Conservation Alliance (PCA), and the Plant Conservation Alliance-Medicinal Plant Working Group (PCA-MPWG) and its mission.
2. We acknowledge that we are all stakeholders in the preservation of plants.
3. We recognized that we need guidance from our indigenous elders.
4. We intend a more formal structure for industry participation in PCA and PCA-MPWG.
5. We will hold another Industrial Leadership meeting in about one year to assess our progress towards.

The participants also agreed to develop an Industry Committee, to be co-chaired by Michael McGuffin (AHPA) and Julie Lyke (US Fish and Wildlife Service). The committee will be seeking participants to help carry out its agenda. Contact Michael McGuffin for information about how you can be involved.

Industry sponsors for “Industrial Leadership for the Preservation of Medicinal and Aromatic Plants” included AHPA, the American Botanical Council, the Steven Foster Group, Botanical Liaisons, Aveda, Frontier Natural Products Co-op, and GlaxoSmithKline.

AHPA has been informed that there will be an in-depth report on the February conference in the next edition of HerbalGram.

If you have further questions, please contact Robin Gellman, AHPA’s Director of Communications: rgellman@ahpa.org or +1/301/588-1171 ext. 107.

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Investing in Nature
HSBC Holding plc, one of the largest banking and financial services organisations in the world, will help protect the world’s most threatened plant species by the creation of a US$50 million eco-partnership over the next five years. By making the largest ever single donations to three charities, WWF (US$18.4 million), Botanic Gardens Conservation International (BGCI; US$11.6 million), and Earthwatch (US$16 million) the new Investing in Nature programme will
• clean up three of the world’s major rivers, benefiting 50 million people who depend upon them;
• help save 20,000 rare plant species from extinction
• train 200 scientists and send 2,000 staff to work on vital conservation research projects worldwide.
Further information: HSBC: Karen Ng • Tel. +44/20/7260-9814 • Fax: +44/20/7260-8215 • E-mail: karen.ng@hsbc.com, BGCI: Peter Wyse Jackson • Tel. +44/208/332-5953 • Fax: +44/208/332-5956 • E-mail: pwj@bgci.rbgkew.org.uk • Website: www.investinginnature.org.

MedPlant Website
Danna Leaman
MedPlant, a Global Information Network on Medicinal Plants, was formed in 1999 in Neemrana, India, as the result of a workshop on information network development. MedPlant’s current membership includes seven regional medicinal plant network partners, and 65 members from more than 20 countries. In February 2002, the institutional partners involved in MedPlant launched an interactive website (source.bellanet.org/medplant/ [viewed 4.4.2002]) to support communication among the network partners, share information, and promote discussion of cross-regional issues. Development of the MedPlant website is supported by the International Development Research Centre (IDRC) and Bellanet. For information about MedPlant and the website, contact Rolie Srivastava (Project Coordinator) at rolie@sympati.co.ca or Liz Fajber at efajber@idrc.org.in.

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Reviews and Notices of Publication
Boxed reviews refer to books which have been sent to us by the publisher.

Abbreviations: schp: Uwe Schippmann


GRUPOS DE RECOLECTORES DE JOLALPAN, PUEBLA Y COPALILLO, GUERRERO & al. (2000): Actores sociales de la flora medicinal de Mexico. La recolección de plantas medicinales en la Colindancia de Puebla y Guerrero. – 23 pp., Instituto Nacional de Antropología e Historia, Mexico D.F. (Serie Patrimonio Vivo 2).


□32.00, ISBN 3-8047-1775-6.

This book introduces the reader to the fields of ethnobotany and ethnopharmacology and tries to build a bridge between natural sciences and ethnological methods and thinking. While covering also food and poison plants the focus is on medicinal plants. Examples used throughout the book are mostly taken from meso-American studies carried out by the author and his students. 31 boxes with case studies are integrated in the text. In its conservation aspects the book briefly summarizes the recent developments regarding the CBD, some articles of the Convention are quoted in the Annex. References are partly given in the chapters, partly in the back, which is uncomfortable. The four pages glossary of terms should be extended in a future edition. (schp)


Species of high conservation concern, their population status and medicinal use. – Medplant Network News 2: 8-10.


This reference book includes the plants that have current and historic uses as therapeutic agents in the USA. Its main aim is to standardize the use of names in the herbal industry and its users. Primarily it intends to clarify not only the scientific names but also establishes a single and unambiguous common name for each of the herbs in trade. The US Food and Drug Administration (FDA) has determined the first edition of this book as a standard reference. The second edition lists 2048 separate species, including 25 fungi and 23 seaweeds. Besides the Standardized Common Name (SCN) potential scientific synonyms and a range of other common names are given, including Ayurvedic names for 300 plants and Chinese names for 500 herbs. (schp)


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**New Medicinal Plant Publication**

**Medicinal Plant Conservation Bibliography**

volume 2

The *Medicinal Plant Conservation Bibliography* systematically reviews about 70 journals and newsletters for papers with relation to medicinal plant conservation issues. Also, other serial and monographic publications are included.

The first volume included references of the years 1990 to 1996. The present, second volume covers the period 1997 to 2000. Volume 2 also contains sporadic references from earlier years. In total, 801 references and 170 reviews, indexed by general, geographic, and toxiconomic keywords, are incorporated.

At the price of US$ 15.00 / GBP 10.00 the *Medicinal Plant Conservation Bibliography*, volume 2 is available through:

IUCN Publications Service Unit • 219c Huntingdon Road • Cambridge • CB3 ODL•
United Kingdom Tel: ++44/1223/277-894 • Fax: ++44/1223/277-175 • E-mail: info@books.iucn.org

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