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Certifying certification:

can certification secure a sustainable future for medicinal plants, harvesters and consumers in India?

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Front cover photograph: Medicinal plants in an ayurvedic hospital herb garden.

Photograph credit: © WWF-Canon/Mauri Rautkari.

CERTIFYING CERTIFICATION:

CAN CERTIFICATION SECURE A SUSTAINABLE FUTURE FOR MEDICINAL PLANTS, HARVESTERS AND CONSUMERS IN INDIA?

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Kunbi tribe member using a medicament made from madar, or swallow-wort, *Calotropis* sp., India. The plant is reported to be efficacious in cases of chronic eczema, but has many other applications.

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During the course of research for this project, I interviewed 28 representatives of key stakeholders and communicated through post and email with fifty others. The stakeholders included certification and product-labelling organizations, for example the Bureau of Indian Standards; Quality Council of India; the Forest Stewardship Council (FSC); the International Federation of Organic Agriculture Movements (IFOAM); Fairtrade Labelling Organizations International (FLO); NGOs, for example WWF India; research organizations, for example the Indian Institute of Forest Management (IIFM) and The Energy and Resources Institute (TERI); medicine companies, for example Shree Dhootapapeshwar Ltd, which produces ayurvedic medicines; associations of industries, for example the Ayurvedic Drug Manufacturers' Association (ADMA) and the Environment Management Division of the Confederation of Indian Industries (CII); traders and government agencies, for example the National Medicinal Plant Board; the Ministry of Environment and Forests (MoEF); the Central Pollution Control Board; the Department of Indian Systems of Medicine and Homeopathy; Chhattisgarh Forest Department, etc. It would be practically difficult to mention all the persons who contributed by name so, without naming each person, I convey my warm thanks to all of them for their co-operation and help in research.

In the final phase of the project, a Consultation on Certification of Medicinal Plants to discuss the draft research findings of the project was organized on 22 August 2003, in New Delhi. The 12 participants included representatives of government agencies, research institutes, industry and industry associations, accreditation and certifying agencies and NGOs. I am heartily thankful to all of them for sparing time to participate in the Consultation and making useful contributions to the research.

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Pushp Jain
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EXECUTIVE SUMMARY

India is home to an amazing diversity of plants, with over 46 000 plant species recorded to occur there. Many of these species are used for medicinal purposes, with approximately 760 known to be harvested from the wild for use by India's large herbal medicine industry. There is concern, however, that collection methods for many if not most of these species are destructive, and wild populations declining as a result. TRAFFIC India research from 1998 to 2000 demonstrated that destructive and unsustainable collection, use and trade were the major threats to several important Indian medicinal plant species, despite various regulations in that country aimed at protecting plant resources.

Believing it was imperative to look for alternative approaches to securing the sustainable use of India's medicinal plant resources, TRAFFIC explored the potential use of certification as a tool to promote sustainable harvest and trade in medicinal plants destined for India's domestic markets. Research on the use of certification within India, with a particular emphasis on the application to wild medicinal plant species, was initiated in early 2002 through the generous support of the Rufford Foundation. The primary focus was on "independent, third-party certification" schemes, i.e. those where a party independent of those to be certified confirms that certification standards are met. Information was collected through interviews with 28 individuals representing a range of stakeholders, including representatives of certification organizations, industry, government agencies and non-governmental organizations (NGOs). In addition, a literature search was conduced within India and via the internet.

A report containing research results and resulting recommendations was reviewed by a specially convened Consultation on the Certification of Medicinal Plants in August 2003. The consultation was attended by 12 representatives of the major stakeholder groups, including government agencies, research institutes, industry and industry associations, accreditation and certifying agencies and NGOs. Meeting participants discussed TRAFFIC's research findings and recommendations and provided additional insights and recommendations concerning medicinal plant management and certification in India.

Types of certification for medicinal plants

Many medicinal plant species in India occur in forest areas and, along with other non-timber forest products (NTFP), fall within the scope of certification schemes aimed at "sustainable forest management". Other prominent types of certification scheme relevant to medicinal plants relate to ensuring organic, fair trade and quality standards and are applied both to raw materials and production methods.

- The best-known certification scheme for **sustainable forest management** is that of the Forest Stewardship Council (FSC). In the 10 years of its existence, FSC has established itself internationally as the main third-party standard-setting and accrediting agency for this type of certification. While thus far primarily applied to timber, FSC includes medicinal plants and other NTFP within its remit. According to FSC, sustainable forest management is "environmentally appropriate, socially beneficial, and economically viable management of the world's forests". As a "certifier of certifiers", FSC authorizes, bestows credibility upon and monitors certification bodies working to FSC standards. Given the importance of NTFP in forest ecosystems and growing evidence of unsustainable harvests and trade, FSC and related institutions have been developing certification criteria for NTFP.

- **Organic certification** may be applicable to both cultivated and wild-harvested medicinal plants and has most

frequently been applied to plants used in food and beverages, such as herbal teas, herbs and spices. The International Federation of Organic Agriculture Movements (IFOAM), an NGO, and regional and national governments such as those of the European Union, the USA and Japan are among the major players globally in organic certification.

- **Fair trade certification** for plant products is currently concerned almost exclusively with handicrafts, tea, fruits, nuts and other plant products that are not normally consumed primarily for medicinal purposes. The main purpose of this type of certification is to achieve social goals, e.g. to improve the position of poor and marginalized producers in the developing world. Fairtrade Labelling Organizations International (FLO), an NGO, is the main international body developing and certifying compliance with "fair trade" criteria. FLO lists 18 "national initiatives", members of FLO authorized to certify products as meeting FLO standards and award the FLO logo. The International Fair Trade Association (IFAT) is another important global network of fair trade organizations. It supports and works closely with FLO.

- Numerous standards have been developed for assessing and **ensuring the quality** of medicinal plants (raw materials), their processing and end products. For example, in India, Good Manufacturing Practices (GMP), required under a 2000 amendment to *India's Drug and Cosmetic Act, 1940*, are aimed at ensuring quality control in the making of products from medicinal plants. The International Organization for Standardization (ISO), a widely recognized international standardization body, also establishes quality standards. ISO standards with a bearing on medicinal plants include the ISO 9000 series (for management systems) and the ISO 14000 series (for environmental management).

Application of certification in India

While there is some independent certification of fair trade and organic standards for medicinal plants in India, this is largely restricted to teas and other plant products more usually associated with the mainstream food and beverage industry. Several schemes exploring certification options for sustainable forest management were found to be underway or recently completed in India. Two of these were undertaken by the Indian Institute of Forest Management (IIFM), others by WWF-India and one by the Chhattisgarh State Forest Department. No independent, third-party process for certifying the sustainability of medicinal plant production within India was identified during the course of research. However, a review of the wider certification climate in India provided important lessons for the future application of certification to medicinal plants and other NTFP.

There are several government certification schemes focusing on product quality, environmentally friendly and organic production. Over 1100 products have been certified for product quality standards by the Bureau of Indian Standards and 16 000 licences issued to companies meeting these standards. Certification for quality management and environmental management according to ISO has also been adopted. The Bureau of Indian Standards has adopted the ISO 14000 series as national standards for environmental management and has carried out product management certifications according to the ISO 9000 series. In 1991, the Government launched the 'Ecomark' scheme aimed at certifying and awarding a special product label to goods meeting specific environmental standards. This scheme has been unsuccessful, with very few companies participating, the Ecomark label having very low consumer recognition, and consumer demand for 'environmentally friendly' products currently thought to be low.

Some independent certification schemes are taking root in India, notably in the context of "fair trade", particularly with regard to certain exported items, such as tea, and rugs. FLO has certified 23 companies in India

as operating in accordance with its Fairtrade Standards and IFAT has several member companies in India. Similarly, IFOAM has 29 members and eight associates in India certifying production according to organic standards. As in the case of "fair trade", organic certification appears geared primarily toward export markets. WWF-India is conducting a feasibility study into the potential for group certification for an association of small-scale farmers of medicinal plants, with organic farming as one of the objectives, and has also examined the potential of applying certification to wood carvings.

Assessment of current practices for medicinal plant harvests and trade, which derive from a long tradition within India, indicate that, even if the market conditions were ripe for third-party certification, the complex, informal and often opportunistic nature of the trade would not be conducive to it. Comparison of practices for collection and trade of medicinal plants in India with NTFP management requirements according to FSC Principles and Criteria revealed a wide gap between current management approaches, harvest and trade and FSC-type standards.

Conclusions and recommendations

- Independent third-party certification programmes within India are aimed primarily at ensuring the quality of products in trade. Environmental concerns are generally given lower priority and most often linked to reducing the negative environmental impacts of industry. At the time of this research, there were no programmes in place to provide independent certification that medicinal plants had been produced in accordance with sustainability standards. Instead, certification for medicinal plant harvests and trade in India has thus far been limited to a small number of fair trade and organic certification schemes chiefly for products more usually associated with mainstream food and beverages, such as tea, and frequently aimed at export markets. This seems likely to reflect the generally low consumer demand for 'environmentally friendly' products within India, and the structure of medicinal plant harvests and trade.

- Despite what would initially appear to be a poor market for certified products within India, there is a growing interest there in further exploring and pursuing certification for medicinal plants, including from within government and industry. This could reflect in part the recent requirement that Indian manufacturers adopt Good Manufacturing Practices for production of plant-based medicines, which has implications for tracing the source of raw materials used, as well as concerns regarding declines in supplies. Participants in the August 2003 consultation recommended that a working group be formed to explore development of national certification standards. It was stressed that these should take into account environmental and social concerns, and that they be developed in line with international standards, but with a view to researching, understanding, developing and customizing standards for conditions in India. Other recommendations emerging from TRAFFIC's research and the consultation include the following:

- A national, multi-ministerial and multi-disciplinary working group on certification should be established to explore further the potential to establish certification schemes for medicinal plants. Such a group should be organized in consultation with internationally-recognized certification bodies and recognize that any process to develop standards will require several stages, including development of interim standards, field testing and refinement;

- NTFP should be included within the certification study programme of the Indian Institute of Forest Management;

- Experiments to measure management of selected medicinal plants - high-value species, traded in high

volumes, nationally and internationally - against some key international standards and criteria for forest management should be undertaken in some forest management divisions, particularly in States like Chhattisgarh and Uttaranchal, which have declared themselves "herbal States". Similar assessments should be made with regard to third party chain of custody, organic, fair trade and quality certification, with a view toward measuring progress toward international targets and, possibly, the eventual setting of national standards. A review should also be made of the potential for group certification of small cultivators.

- "Good collection practices" should be developed for medicinal plants, preferably at the species level, with a priority placed on those taxa for which destructive collection is reported. Development of such practices might be linked to elaboration of the World Health Organization "Good Agricultural and Field Collection Practices" and the revised WHO/IUCN/WWF Guidelines on Conservation of Medicinal Plants, currently in preparation. Such practices should also take into account work done thus far by FSC and associated certifiers. Associated efforts are needed to organize harvesters into co-operatives or societies and to implement the practices by providing motivation, training and incentives;

- "Good sourcing practices" should be developed for industry. Industry associations could take a lead in the development of good sourcing practices, with the support of the Department of Indian Systems of Medicine and Homeopathy and the National Medicinal Plants Board, and the collaboration of other stakeholders;

- The potential to link the Good Manufacturing Practices requirement (under the *Drugs and Cosmetics Act, 1940*) to a requirement that medicinal plant materials should originate from sustainable and legal sources should be explored; and

- Programmes to increase the awareness of stakeholders (particularly forest managers and members of industry) of criteria for sustainable management of medicinal plants should be implemented, so that such criteria can be adopted in resource management as far as possible.

BACKGROUND AND INTRODUCTION

India is one of the 12 mega-biodiversity countries of the world (World Bank, 1996). So far, over 46 000 plant species have been recorded there (MoEF, 2002). Ethnobotanical investigations in tribal areas, part of the All India Co-ordinated Research Project on Ethnobiology (AICRPE), revealed that the tribal peoples in the areas investigated had specific knowledge about the uses of over 8000 species of wild plant (Anon., 1999a). According to the Foundation for Revitalisation of Local Health Traditions (FRLHT), 881 species are currently used in industry for production of herbal products and around 60 species are imported, about 60 species are cultivated and about 760 species are harvested from the wild. Thus around 90% of medicinal plant species used industrially in India are collected from the wild. More than 70% of the plants collected from the wild involve destructive harvesting (Anon., 2003a).

From January 1998 to December 2000, TRAFFIC worked on a project funded by the *Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung* (BMZ), through a Funds in Trust Agreement with WWF, the conservation organization. The project, entitled *Securing the Future of Medicinal Plant Resources*, had four programme elements, one of which - "Motivating Actions to Sustain the Medicinal Plant Resource of the Indian Sub-continent" - was executed by TRAFFIC India. During research for the project, TRAFFIC India observed that unsustainable and destructive collection, use and trade are the major threats to several important medicinal plant species in India. This is in spite of the fact that various mechanisms and programmes for the regulation of plant harvest or trade are in place in India. These include, for example, lists of plants banned from harvest or subject to regulated harvest in forests in many States of India; a list of plants banned from export; trade controls for certain species of flora under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and programmes such as the Joint Forest Management Programme of the Ministry of Environment and Forests of India, for the protection and sustainable use of forests. Thus, it seems imperative to look for alternative approaches to ensure sustainability of medicinal plant resources.

Since the early 1990s, various certification schemes have been developed the world over to identify and promote goods meeting specific quality controls, environmental and/or social criteria. As well as establishing a set of standards, these schemes seek to promote their widespread recognition by both the public and industry. One well-established certification scheme, and perhaps the most relevant international certification scheme with regard to the conservation and trade of medicinal plants, is that of the Forest Stewardship Council (FSC). Established in 1993, FSC describes itself as "an association of members, consisting of a diverse group of representatives from environmental and social groups, the timber trade and the forestry profession, indigenous people's organizations, community forestry groups and forest product certification organizations from around the world", with the shared objectives of supporting "environmentally responsible, socially beneficial and economically viable management of the world's forests" (Anon., 2003b). FSC establishes environmental and social criteria, chain of custody requirements and a 'third-party' compliance mechanism - in other words, compliance with FSC standards is monitored by FSC-authorized agencies that are themselves independent from the businesses or areas being certified. FSC-certified products are allowed to carry the FSC logo, which enables consumers to distinguish them from other products. Although most of the products certified according to FSC standards have so far been wood (including paper) products, a small, but increasing, number of non-timber forest products have also been certified. Yerba maté *Ilex paraguariensis*, a plant used to produce a traditional tea popular in Argentina, Brazil, Paraguay and Uruguay, was recently certified according to FSC standards by the Institute for Forest and Agricultural Management and Certification (Imaflora) in Brazil, for example (Anon., 2003c). Several reviews of certification initiatives for non-timber forest products have been produced - see, for example, Pierce, *et al*., 2002; Walter, 2002 and Walter *et al.*, 2003.

As a logical follow-up to earlier work by TRAFFIC India, TRAFFIC developed a project to explore the usefulness of independent, third-party certification as a tool to promote sustainable use of medicinal plant resources in the context of India's domestic market. Project research was initiated in early 2002 and was completed in mid-2003. This report presents the results of the research.

The report sets out in brief an explanation of the concept of certification for medicinal plants, its aims and categories. It briefly reviews the status of certification of medicinal plants in India before reviewing the status of certification, in general, in India, in order to draw lessons from this. The report measures existing practices for medicinal plant harvest and trade in India against some of the salient criteria for certification of sustainable forest management in use globally and, finally, the proceedings of a consultation on certification of medicinal plants, held as part of the research for this project, are presented before conclusions and recommendations from the project are made.

METHODOLOGY

A sample literature search of three important libraries (those of the National Institute of Science Communication (NISCOM), WWF-India and The Energy and Resources Institute (TERI), in Delhi) during May and June 2002 resulted in the finding of only a very limited amount of relevant material. During subsequent research, however, the author received some useful documents, for example, the report of the Indian Institute of Forest Management's workshop on developing criteria and indicators for sustainable management of forests in India (Anon., 1999b); the summary of the proceedings of a workshop on the relevance of forest certification in India, organized by WWF-India, in 2001 (Anon., 2001a); information on Ecomark, a scheme for the labelling of environment-friendly products in India (Anon., 1997); and an issue of *Parivesh*, a quarterly newsletter on environment issues, published by the Central Pollution Control Board of India (Anon., 2001b).

Internet searches uncovered useful information on international certification for sustainably managed forests and forest products and on certification in general, both in the Indian and global contexts.

During the course of research, numerous contacts were made with stakeholders, particularly outside Delhi. Twenty-eight interviews were conducted with representatives of key stakeholders, including:

- ***certification and product-labelling organizations***, for example, the Bureau of Indian Standards and Quality Council of India;
- ***NGOs***, for example, WWF-India;
- ***research organizations***, for example, the Indian Institute of Forest Management (IIFM) and The Energy and Resources Institute (TERI);
- ***industry***, for example, Shree Dhootapapeshwar Ltd, a pharmaceutical company;
- ***associations of industries***, for example, the Ayurvedic Drug Manufacturers' Association (ADMA) and the Environment Management Division of the Confederation of Indian Industries (CII);
- ***traders***, for example, M/s Om Prakash Vijay Kumar
- ***government agencies***, for example, the National Medicinal Plants Board, the Ministry of Environment and Forests and the Department of Indian Systems of Medicine and Homeopathy.

Finally, a draft of this report was reviewed by the 12 participants at the specially convened Consultation on Certification of Medicinal Plants, held on 22 August 2003 at the International Development Research Centre (IDRC), New Delhi and their comments were heeded and used to modify the contents of the report, as appropriate.

Within the context of this report, "certification" is taken to mean "independent, third-party certification".

The term "non-timber forest products" (NTFP) has been used in preference to the (sometimes interchangeable) term "non-wood forest products", except where referring to particular research or documentation that uses the latter term.

TYPES OF CERTIFICATION FOR MEDICINAL PLANTS

Quality assurance is an important factor for consumer confidence and certification schemes of various kinds for quality control have been in existence for decades. Additionally, certification programmes are evolving the world over with the objectives of ecological, social and economic sustainability. Certification in the context of natural resources broadly focuses on these considerations and, in many cases, certification programmes are for more than one of these purposes. "Sustainable forest management" as the goal of key timber certification programmes, for example, is often concerned with an application broader than the purely ecological. The Forest Stewardship Council (FSC), the globally recognized standard-setting and accrediting organization for sustainable forest management, expresses its goal as the promotion of "environmentally responsible, socially beneficial and economically viable management of the world's forests" (Anon., 2003b). Thus, "**sustainable forest management**" is the most appropriate description for this combined set of aims and this category of certification. Other main categories of certification for medicinal plants - **organic** and **fair trade** certification and **certification for quality** - are briefly described below. These categories of certification scheme also often have multiple aims, in addition to their primary aim (for example, fair trade schemes are often also concerned with environmental protection). For each category of certification, international standards have been developed.

- **Sustainable forest management certification.** This type of certification applies to NTFP, of which medicinal plants are a category. It addresses issues related to the health of the ecosystem; ecological harvesting activities and sustainable harvest levels; biodiversity; soil and water conservation; conservation of ecologically high-value areas; restriction on the use of genetically modified organisms (GMOs) and bio-accumulative, toxic and resistant substances; and the minimizing of waste. In several cases, it also addresses environmental pollution and social considerations, as is the case with FSC certification.

  Several organizations are involved with this type of certification for medicinal plants. Pierce *et al.* (2002) list 11 organizations concerned with certification of what they term "ecologically sustainable" forest management in their *Annotated Collection of Guidelines, Standards and Regulations for Non-timber Forest Products and Botanicals.* These organizations include FSC and other certification schemes which FSC itself approves (certifies), for example, SmartWood (a programme of the Rainforest Alliance, USA), the Skal International Forestry Certification Programme (an international inspection and certification organization based in the Netherlands) and Woodmark, the Soil Association's forest certificaton scheme (the Soil Association is a UK-based organization which helps to promote responsible forest management in the UK and worldwide) (Pierce *et al*., 2002). FSC has developed a set of principles and criteria for assessment and certification of forest management worldwide. Its 10 Principles relate to compliance with laws and with FSC Principles; tenure and use rights and responsibilities; indigenous peoples' rights; community relations and workers' rights; benefits from the forest; environmental impact; the adoption of a forest management plan; monitoring and assessment; the maintenance of high-conservation value forests; and plantations (for further details see http://www.fscoax.org/principal.htm). Each Principle is measured according to a set of criteria. All FSC-accredited certifiers follow FSC standards.

One other major player in the context of certification for sustainable forest management is the Pan-European Certification Process (PEFC). This is a voluntary, private-sector initiative that provides independent forest management certification.

For more detail on this type of certification for medicinal plants, see **Sustainable forest management certification - a synopsis of the key criteria..** on the following page of this report.

- **Organic certification**. The Indian system of medicine, ayurveda, has been evolving over the last 3000 years (Sharma, 1996). Since, all medicinal plants used were originally collected from forests, where they grew naturally, the present production of medicinal plants for ayurveda should definitely be organic (Vaidya Balendu Prakash, Dehradun, pers. comm., 6 November 2000). Furthermore, medicinal plants are also used as items of food, such as spices, herbal teas, etc. Thus, organic certification for medicinal plants can be important. Certification programmes concerned to promote organic farming are often also concerned with ecological and social issues.

Credit: Teresa Scarman

Advertisement from a UK sales catalogue for organically produced rose-based treatments and preparations. The photograph (left, centre) shows rose collection in Turkey.

The International Federation of Organic Agriculture Movements (IFOAM) in Germany is a non-governmental, international membership organization, founded to provide a platform for global exchange and co-operation in organic agriculture (Anon., 2003d). As such, it is an umbrella organization, setting global standards for organic products and accrediting organic certifiers on an international scale. Many national organic certifiers are IFOAM-accredited - for example, Bioland e.V. (Germany) and the Organic Crop Improvement Association International (OCIA) (USA).

At regional or national level authorities such as the European Union (EU) and the US and Japanese Governments, prescribe organic standards for production and trade (*EEC Regulation no. 2092/1991,* the *National Organic Law* and the *Japanese Agricultural Standard of Organic Agricultural Products* relate, respectively). In some countries, the government agencies responsible for organic standards, for example the EU or the Agricultural and Processed Food Products Export Development Authority (APEDA), in India, are also accrediting agencies for certifiers of organic production, according to national or regional standards, (i.e. they "certify the certifiers").

- **Certification for social reasons - fair trade**. Fair trade certification exists for plant produce, such as nuts, fruit, tea and honey, some of which may be used medicinally. This category of certification scheme addresses issues such as respect for the rights of local communities, tribals and indigenous people; workers' rights; compensation for use of indigenous knowledge; child labour, etc. The collectors of medicinal plants in India often do not get fair returns for their labour because of the informal and unorganized nature of the trade. Fair trade schemes are also often concerned to promote other objectives related to sustainability and development, such as improvement of product quality, increased environmental sustainability of activities (Anon., 2003e).

There are numerous initiatives promoting fair trade. Fairtrade Labelling Organizations International (FLO) is an international body developing fair trade criteria for certain products. FLO lists 18 "national initiatives", members of FLO authorized to award its logo (the FAIRTRADE mark) to products which meet its internationally recognized standards of fair trade (Anon., 2003e). The International Fair Trade Association (IFAT) is another global network of fair trade organizations. It has over 200 members from more than 50 countries and supports and works closely with FLO (A. Palmer, IFAT, *in litt.*, 15 October 2003).

- **Certification for quality**. Numerous standards have been developed for assessing and ensuring the quality of medicinal plants (raw materials), their processing and end products. These include Good Manufacturing Practices (GMP) standards, for example, as set out in a regulation introduced in India in 2000, to assess facilities and processing procedures, quality control and validation of methods used, to ensure the proper preparation of materials. Similarly, the Code of Ethics and Business Conduct of the American Herbal Products Association (AHPA) contains standards for quality and safety in the manufacture of herbal products, a demonstration of the industry's willingness for self-regulation. The International Organization for Standardization (ISO), an NGO, provides the means for international standardization for specifications and criteria to be applied globally, by consensus, in a particular industry or business sector (Anon., 2003f). ISO standards with a bearing on medicinal plants include the ISO 9000 series (for quality management) and ISO 14000 series (for environmental management) (Pierce *et al*., 2002).

In addition to the areas of overlap between types of certification already referred to, other objectives also cross-cut several certification programmes. The promotion of local processing and value addition, to pass on increased benefits to local people, are examples. Certain requirements are common to different types of third-party certified operations too, and these will usually include:

- a need for economic sustainability, in order to ensure the viability of an operation, so that it can meet environmental and social costs, and the recurring costs of certification itself.
- a need for fair assessment and auditing, in order to ensure the standards set are met.
- a need for continuous improvement in meeting the standards set.
- a limited period of validity for certification licences. SmartWood, for example, which describes itself as "the oldest and most extensive certification program in the world" (Anon., 2003g), grants certification for periods of five years, with provision for annual and/or random monitoring. After the expiry of the validity period, reassessment is carried out and the certification renewed, if appropriate.
- Last, but not least, a company certified by one of the established, independent certification schemes is expected to be law-abiding, fair, and managed professionally.

Sustainable forest management certification - a synopsis of the key criteria relevant to medicinal plants

Most of the programmes for certification of forest management focus on wood and wood products, but some address the subject of medicinal plants within the category of NTFP. Since NTFP form an important part of forest ecosystems and may be subject to an increasing amount of unsustainable trade and use, several certification programmes are exploring the potential and usefulness of certification for this category of products. At one point (1997) FSC had developed an 11th draft Principle, pertaining to NTFP, but this was not adopted and currently FSC approves NTFP, including medicinal plants, for certification on a case-by-case basis (Pierce *et al.*, 2002). FSC policy states that an FSC certifier must first develop national guidelines for the assessment of NTFP management, before undertaking certification of the same (Walter Smith, Senior Technical Specialist,

Credit: © WWF-Canon/Edward Parker

The mark of the Forest Stewardship Council (FSC) spray-painted onto stacks of processed timber.

SmartWood, Rainforest Alliance, USA, pers. comm. 4 June 2003). Operations already granted FSC certification for NTFP include producers of Chicle *Manilkara zapota,* Yerba maté *Ilex paraguariensis* and maple *Acer* spp. syrup.

The FSC has schemes for group certification (in this case certification of a group of forest/plantation properties under the stewardship of a single independent legal entity) and for certification of chain of custody, for companies that manufacture, buy, sell, or distribute certified forest products. These schemes, too, may be adapted for NTFP in future.

The certification agencies SmartWood and the Soil Association have recently made attempts to incorporate NTFP management and harvest in their research and programmes (Laird and Pierce, 2002) and generic guidelines for assessing sustainable management of NTFP have been developed and published by experts associated with the Rainforest Alliance, an organization that seeks to protect ecosystems by implementing better business practices for conservation. These guidelines, contained in *Tapping the Green Market: Certification and Management of Non-Timber Forest Products* (Shanley *et al.*, 2002) are the most detailed available for considering certification of a forest management unit for sustainability, where the focus is on NTFP harvest only. In cases where certification focuses on both timber and NTFP, FSC's Principles and Criteria are applicable. SmartWood's *Non Timber Forest Products Certification Addendum* to its *Generic Guidelines for Assessing Forest Management* (Anon., 2000a) provides specific guidance on the application of FSC Principles and Criteria to NTFP management systems. Along with these generic guidelines, certain species-specific guidelines may also be required.

Finally, Mallet and Karmann (2000) find the following simplification of FSC categories of assessment useful in measuring the sustainability of all types of production systems.

- Management plan, monitoring, evaluation;
- Biodiversity conservation;
- Tenure and customary use rights;
- Safe and healthy working environment;
- Economic viability.
- Ecological harvesting and management activities;
- Regulating the use of chemicals;
- Fair returns, adequate benefits;
- Impact on local and indigenous communities;

REVIEW OF THE CERTIFICATION ENVIRONMENT IN INDIA

Review of certification for medicinal plants in India

Among those interviewed, only a few people were found to be fully aware of the ecological, social and other standards associated with certification schemes, and the complex processes involved in establishing certification.

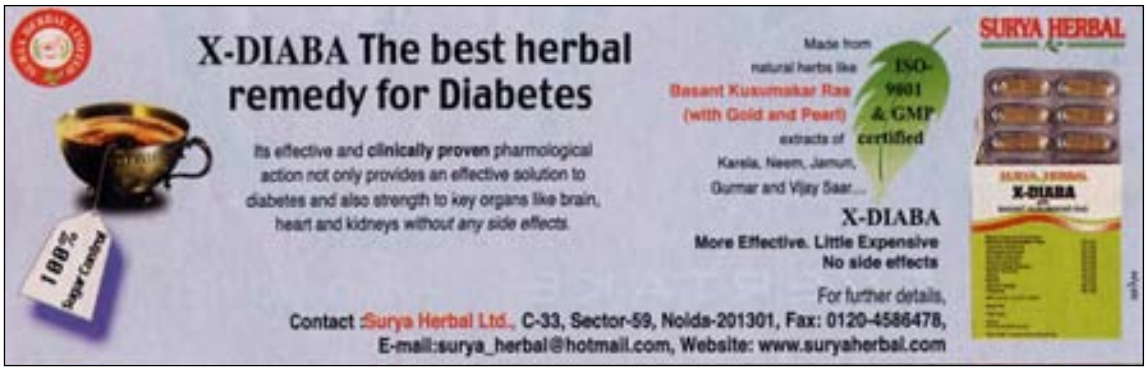
No independent, third-party, certification process for sustainable use of medicinal plants in India were identified in the course of this research. There are some instances of other types of independent certification for plants, some of which could loosely be termed medicinal. Certain tea producers in India have been certified according

to fair trade standards, for example, and there is a growing export market for certified organic produce from India, including tea, honey, rice, pulses and spices. The domestic market for organic products is reported to be limited. No herbal industry in India is reported to have certification for environmental standards. There is, however, increasing concern to ensure the quality of medicinal plants among all stakeholders. There have been recent moves towards co-ordinating oversight of several aspects of medicinal plant production in India, as outlined below.

The Department of Indian Systems of Medicine and Homeopathy (DISM&H) of the Government of India set up a National Medicinal Plants Board (NMPB) in 2000. The objective of setting up the Board was to have an agency responsible for co-ordination of all matters related to medicinal plants, including the drawing-up of policies and strategies for conservation; proper harvesting; cost-effective cultivation; research and development; and the processing and marketing of raw material, in order to protect, sustain and develop this sector (Anon., 2002a). Mr R.B.S. Rawat, Chief Executive Officer of the National Medicinal Plants Board, agrees that sustainability is the "need of the hour". He is in favour of forest management certification becoming a reality (pers. comm., 22 July 2002), but currently the focus of the Board is to facilitate cultivation of 32 priority medicinal plant species.

In the interests of scientific standardization and uniformity in the use of medicinal plants, pharmacopoeial standards for 258 single plant drugs have been evolved so far by scientists working in the Pharmacopoeial Laboratory of Indian Medicine, and duly approved by the Ayurveda Pharmacopoeia Committee and Government of India (Anon., 2003h). Additionally, medicinal plant remedies prescribed in classic literature on Indian systems of medicine have been in use for centuries. Regarding quality certification, Dr R.U. Ahmad, Director of the Pharmacopoeial Laboratory of Indian Medicine, states that "It has been the practice that the drugs of the Indian systems of medicine are not certified on the basis of laboratory tests/trials, etc. and their pharmacological activity as claimed on the label of the product is not proven under the purview of the *Drug and Cosmetic Act*, *1940*, owing to non-availability of drug-testing laboratories and other facilities prevailing in the country" (Ahmad and Sharma, 2002).

A Good Manufacturing Practices (GMP) regulation was introduced in June 2000, as Schedule 'T' of the *Drug and Cosmetics Act*, *1940* (the main regulation for the medicinal and cosmetics industry). The aim of GMP is quality control in the manufacturing of standardized herbal medicines, with the implication that quality raw



A herbo-mineral preparation sold in India, containing Basant Kusumakar Ras, an ayurvedic formulation, Karela (Bitter Gourd) *Momordica charantia*, Neem *Azadirachta indica* and Jamun (Ram's Horn) *Gymnema sylvestre*. The capsules are manufactured by Surya Herbal Limited, reported to be the first ayurvedic ISO 9001-certified company, and the product also has Good Manufacturing Practices (GMP) certification.

material (mainly medicinal plants) should be used. Implementation of GMP is mandatory for every phyto-pharmaceutical industry, but mechanisms to enforce GMP are reported to be weak.

The main emphasis of GMP is on ensuring that:

- raw materials used in the manufacture of drugs are authentic, of prescribed quality and free from contamination;
- standards of premises and equipment are satisfactory;
- adequate quality control measures are in place; and that
- products for sale are of acceptable quality (Ahmad and Sharma, 2002).

Credit: TRAFFIC India

Medicinal plant material displayed at the medicinal plant wholesale market in Delhi

It should be noted that medicinal plants are not covered under the product quality certification scheme of the Bureau of Indian Standards (BIS) (Mr. Harcharan Singh, Additional Director General (Marks), BIS, pers. comm., 21 January 2003), nor under the environmental and quality eco-labelling scheme, Ecomark, (Dr M.Q. Ansari, Scientist-in-Charge, Ecomark, Central Pollution Control Board, pers. comm., 31 May 2002), because they fall under the purview of *The Drug and Cosmetics Act, 1940*, which is expected to regulate this.

As there are thus far no third-party certification schemes for medicinal plants in India, it was therefore decided to review other certification schemes for environmental, quality, social and other standards in India, in order to draw lessons from these.

Review of certification, in general, in India

Certification schemes and initiatives related to the sustainable management of forests

The Forest Stewardship Council (FSC)

According to the FSC website, India had 175 ha of forest certified for sustainable management by an FSC-accredited body in April 2002 (Anon., 2002b), but it seems that the certification was not renewed for the company concerned because, during a later visit to the same website (23 May 2003), no such certification was reported in India (Anon., 2003c). In addition, three FSC chain of custody certifications, for two tools manufacturers and a handicraft manufacturer, were reported from India (Walter Smith, pers. comm., 3 June 2003).

The Bhopal-India Process: an Indian initiative for the development of criteria and indicators for sustainable forest management

In the absence of a framework to provide feedback on the direction of changes taking place after the implementation of the *National Forest Policy, 1988*, the Indian Institute of Forest Management (IIFM) therefore took the initiative in developing criteria and indicators for sustainable forest management at the national level by launching the Bhopal-India Process in 1998. A national workshop was organized in January 1999 by the IIFM, in collaboration with the State Forest Department of Madhya Pradesh and the Madhya Pradesh State Minor Forest Produce (Trade and Development) Co-operative Federation, based in Bhopal. Following the workshop, a base set of national-level criteria and indicators for assessing sustainable forest management in India was formulated. Discussions at the meeting led to the identification of eight national-level criteria and 51 draft indicators applicable at the national level for Indian forest management, to be adopted according to a three-tier hierarchical structure (Anon., 1999b).

Bamboo certification

The IIFM is carrying out a project, supported by the Directorate of Handicraft, Government of India, for exploring the potential for certification of cane and bamboo at three sites in the north-eastern region of India. As part of this process, a Bamboo Certification Workshop, was held in Agartala, Tripura, India, 2-3 July 2003. The project may lead to FSC "chain of custody certification" for bamboo and cane handicraft products of the region (Dr Manmohan Yadav, IIFM, Bhopal, *in litt*., 1 September 2003).

Credit: IIFM

Dr Manmohan Yadav, Co-ordinator of the Indian Institute of Forest Management (IIFM), addressing the Bamboo Certification Workshop, July 2003.

WWF-India: exploring the relevance of certification to the wood-carving industry and non-timber forest products in India

A study of the potential to apply certification to NTFP in India was initiated following a workshop entitled the *Relevance of Forest Certification in India,* organized by WWF-India in November 2001. During the workshop, representatives of industry presented various case studies on certification. The case studies revealed a widespread lack of information on the concept of certification. This could be because of the low demand for certified products from any national or international agency, resulting in a low-level of curiosity in certification among local traders and manufacturing units. It was perceived that there was a need to enhance awareness of certification among the public and stakeholders.

At the workshop, Professor K.C. Malhotra, of the Indian Statistical Institute, Kolkata, recommended that a core group should be constituted to investigate

Credit: Sudipto Chatterjee, Forests and Biodiversity Programme, WWF-India

WWF-India's publication *Relevance of Certification to the Wood Carving Industry in India.*

further the relevance of forest certification in India. During the discussions that followed, the wood-carving industry was identified as a potential sector for certification. It was hoped that this industry would benefit from certification and the sustainable use of resources that this would promote. Cases of unsustainable practice, such as that reported from the Punjab, where Shisham (Sissoo) *Dalbergia sissoo* trees are harvested by private planters after only 10 years in order to earn quick returns, could be eliminated through the use of certification. Further, the encouragement of tree-planting on farm land could be an effective means of reducing the pressure on natural forests that are severely exploited by communities using forest resources for subsistence. In short, it was concluded that certification should be institutionalized, in order to eradicate unsustainable practices (Chatterjee *et al*., 2003).

Credit: Sudipto Chatterjee, Forests and Biodiversity Programme, WWF-India

Certification trainer Walter Smith and participants at a training workshop on certifiction for wood carvings and non-wood forest products, June 2003.

A training workshop to assess the relevance of "introducing principles of certification in the sectors of wood carving and non-wood forest products" was held 2-6 June 2003, in Nagina, Uttar Pradesh. The workshop concluded that there were various issues to be addressed before advancing towards certification of non-wood forest products. The main issues were: economic relevance for the communities involved; a lack of awareness among stakeholders; a lack of knowledge on assessment standards and non-wood forest product certification; and the question of cost. Group certification was identified by the workshop as a possible solution to the problem of prohibitive costs of certification (Anon., 2003i).

WWF-India: group certification for a medicinal plant species

WWF-India is conducting a small scoping exercise to explore the feasibility of introducing FSC-type group certification for approved chain of custody for the medicinal plant Chirayata (or Chiraita) *Swertia chirata*, for gatherers in western Arunachal Pradesh (Sudipto Chatterjee, Co-ordinator, Forestry and Biodiversity Division, WWF-India, *pers. comm*., 28 August 2003).

Credit: Pushp Jain

Chirayata (or Chiraita) *Swertia chirata*, the subject of assessment for certifiction.

CGCERT

Chhattisgarh is a new State in central India, "carved out" of the State of Madhya Pradesh on 1 November 2000. The population of the State is predominantly tribal, comprising approximately 42 tribes. It has 59 772 km^2 of forest, which is equivalent to around 44 % of the total area of the State. Chhattisgarh has declared itself a "herbal State".

The Chhattisgarh State Forest Department organized a one-day *Workshop on Certification of Non-wood Forest products, including Medicinal, Aromatic and Dye Plants*, held on 9 April 2003. The workshop addressed the question of norms for "Fair" and "Average" quality; the issue of quality assurance; forest management as it pertains to certification;

and a proposed certification process for forest management in Chhattisgarh. It was stressed that certification standards should follow international standards and address ecological, social and economical sustainability. Recommendations from the workshop included the setting-up of an autonomous certification agency (Dr R.C. Sharma, PCCF, Forest Department, Chhattisgarh, *in litt*., 5 May 2003) and such an agency has now been constituted under the *Societies Act,* with the name CGCERT. The agency will comprise stakeholder representatives and address the various issues related to certification of non-wood forest products, including medicinal plants (Dr R.C. Sharma, PCCF, Forest Department, Chhattisgarh, *in litt*., 26 August 2003).

Certification for product quality - general

Product quality certification according to Indian Standards - the ISI mark

The Bureau of Indian Standards (BIS) is the sole statutory agency for setting Indian Standards and assessing whether a product qualifies for use of the Indian Standards Institution (ISI) mark. The Bureau of Indian Standards has formulated nearly 17 000 standards - which are categorized as basic standards, product specifications, methods of test and codes of practices - and certified about 1100 products and issued around 16 000 licences (Mr H. Singh, pers. comm., 21 January 2003).

Indian biscuit wrapper marked with the ISI (Indian Standards Institution) logo, certifying product quality in accordance with Indian Standards.

The Government of India stipulates those products for which Indian Standards for quality must always be met. These tend to be products which can affect human safety, the environment and public health, for example, cement, steel, electrical appliances, certain chemicals, pesticides, etc. There are 135 such products (i.e., for which it is mandatory to have ISI certification) and these are identified in different legislative acts of various ministries and organizations of the government (Mr H. Singh, pers. comm., 21 January 2003).

ISO 9000: quality management standards according to the International Organization for Standardization

There is a worldwide movement for installing quality management systems in accordance with ISO standards, as the concept behind this series is quality control at every stage of manufacturing or service, not just in the end-product (Saxena, 1999).

There are about 40 independent, third-party Quality Management System certifiers in India, but several stakeholders interviewed for this study questioned the quality of assessment by many of these certifiers, as no benchmarks for assessment are in use. BIS has carried out around 1100 Quality Management System Certifications (Mr H. Singh, pers. comm., 21 February.2003). One company in India producing ayurvedic medicine, including medicinal plants, has received quality certification under the ISO 9000 series, according to the company's home page (http://www.suryaherbal.com/whats-new.html) (see also page 7).

Certification for agricultural products - AGMARK

Certification of the quality of agricultural and related produce is carried out by the Department of Agriculture and Co-operation of the Indian Ministry of Agriculture. Certification is applied under the aegis of the *Agricultural Produce* (*Grading and Marking*) *Act, 1937,* as amended in 1986. The relevant certification mark is "AGMARK" and there is a standard logo for the same. There are 161 types of commodity covered under the scheme, including fruits, nuts, oils and spices, but not medicinal plants (Anon., 2003j).

Indian mustard oil bearing the AGMARK logo

Certification for environmental standards

ISO 14000: environmental management standards

While the ISO 9000 set of standards is primarily concerned with quality management, the ISO 14000 series is primarily concerned with environmental management and relates to a company's willingness to minimize any harmful effects on the environment caused by its activities, and to achieve continual improvement of its environmental performance (Anon., 2003f).

There are more than 20 certifying organizations in India for environmental management, according to Mr V.K. Mediratta, Secretary General, Quality Council of India, New Delhi (pers. comm., 17 January 2003.). The BIS, after adopting the ISO 14000 series standards as national standards, has launched the Environment Management System Certification scheme, according to which companies may demonstrate their compliance with ISO 14000 standards (Saxena, 1999). The Bureau has made 65 certifications in line with ISO standards for environmental management, according to Mr Seghal, Director of the Environment Management Systems Division of the BIS (pers. comm., 21 February 2003). There are around 700 ISO 14001-certified companies in India (ISO 14001 is the certification standard in the ISO 14000 family.).

Many pharmaceutical industries have certified environmental management, according to various certifying agencies in India, but all these industries are purely chemical-based, according to Ms. S. Arora, Confederation of Indian Industry, Environment Management Division, New Delhi (*in litt*., 31 May 2002).

Ecomark scheme

The Government of India launched an eco-labelling scheme known as Ecomark in 1991. The scheme is intended to allow easy identification of environmentally friendly products by consumers, and the Ecomark label is awarded to consumer goods which meet the environmental criteria specified by the scheme and "the quality requirements of Indian Standards" (Anon., 1997). The criteria for certification follow a "cradle-to-grave" approach, i.e. from raw material extraction, to manufacturing, to disposal.

In an interview with *Making India Green*, an Indian organization promoting sustainable consumption, Mr N.G.Wagle, a consumer activist and member of the Technical Committee of Ecomark, reported that "a licence [had] been granted to Madhya Bharat Paper Ltd., Bilaspur (M.P.) for use of the Ecomark on two types of writing and printing papers". He continued to note that, "out of the 14 product categories across which eco-criteria [had] been formulated for a few hundred consumer goods, after years of effort by representatives of the industry, research laboratories, technical experts and consumer organizations, only two within a single category (paper) sought and got the Ecomark." He used this as an illustration of the fact that Ecomark was "inherently incompatible with rapid changes in the FMCG (fast moving consumer goods) scene" (Wagle, 2003). Concurring with this view, Mr V.K. Seghal, Director of the Environment Management Systems Division of the Bureau of Indian Standards, states that the "major problem with Ecomark is that, besides the environmental standards, there is a requirement for product quality certification also. Thus, the companies have to manage two certification processes, which naturally involves costs. As it is, Ecomark is not popular and nothing has been done to promote the scheme and there are no incentives offered" (pers. comm., 21 February 2003). Ordinary consumers are hardly aware of the Ecomark or of the concept, according to Mr. Wagle. According to him, "Industry opines that the Indian consumer is more driven by price considerations and brand loyalty, rather than the esoteric concept and personal conviction to save the environment" (Wagle, 2003).

Certification for fair trade

The fair trade movement has taken root in India, particularly with regard to the export of certain items, for example tea, carpets, handicrafts and textiles etc. The global leader in fair trade labelling, Fairtrade Labelling Organizations International (FLO), has certified 22 tea companies and one fruit juice company in India (Anon., 2003e). There are many fair trade organizations in India, mainly run by NGOs. The organization Rugmark, for example, provides certification that carpets are not made with child labour and the Indian NGO International Resources for Fairer Trade (IRFT) aims to alleviate poverty and unemployment in India through fair trade, by encouraging and monitoring socially responsible behaviour amongst Indian businesses. The IFAT website lists several member companies in India, IRFT among them (see http://www.ifat.org/memberslists/asiamembers.html).

Certification for organic standards

The Government of India's National Programme for Organic Production (NPOP) and National Accreditation Policy and Programme (NAPP)

The Government of India introduced the National Programme for Organic Production (NPOP), in 2000, which encompasses within its realm various government initiatives to promote, protect and develop the Indian organic movement and install accreditation and certification processes (Anon., 2002c). To promote proper implementation of NPOP, the National Accreditation Policy and Programme (NAPP) was subsequently formulated, with Accreditation Regulations announced in May 2001. These make it mandatory that all certification bodies, whether already engaged, or proposing to engage, in inspection and certification of organic crops and products, should be accredited by an Accreditation Agency (Anon., 2003k). The accreditation and certification programmes took effect from 1 October 2001 and the Government of India has now finalized procedures for organic certification according to Indian standards. The appointed Accreditation Agencies are the Agricultural and Processed Food Products Export Development Authority (APEDA), the Coffee Board, Tea Board and Spices Board, the Coconut Development Board and Directorate of Cashew and Cocoa Development (Anon., 2000c). At present, only APEDA has invited applications for accreditation (Anon., 2003k).

The Accreditation Regulations can apply to exported, imported and locally traded organic products, but currently only organic products for export are legally bound to comply with them. Thus, for example, an agricultural product can only be exported as an "organic product" if it is certified by a certification body accredited by APEDA. Categories covered under the accreditation scheme are organic crop production, organic animal production, organic processing operations, wild products and forestry (Anon., 2003k).

There are 107 certified organic producers in India for the products covered by APEDA and the export of organic products certified by the Authority during 2000-2001 was estimated to amount to INR50 million (approximately USD1 million). At present, there are six organic certifiers accredited by APEDA (Rastogi,2003).

The International Federation of Organic Agriculture Movements (IFOAM) in India

The International Federation of Organic Agriculture Movements describes its goal as "worldwide adoption of ecologically, socially and economically sound systems that are based on the principles of organic agriculture" (Anon., 2003d). There are 29 members of IFOAM in India, some of them with certified organic farming operations, and eight "associates", including APEDA (Nadine Agbore, IFOAM head office, *in litt*., 20 June 2002).

Credit: IFOAM

WWF-India - organic farming group certification

A feasibility assessment of organic certification for a group of small-scale farmers of medicinal plants is underway. A Growers Forum has been formed in the State of Uttaranchal. It consists of 50 small-scale farmers cultivating medicinal plants. One of the objectives of the Forum is organic farming. The members of the Forum have been advised about standards and documentation requirements. A few medicinal plants grown by farmers - for example, Chirayata *Swertia chirata,* Costus (or Kuth) *Saussurea costus,* Kutki *Picrorhiza kurrooa,* Atis *Aconitum heterophyllum,* Himalayan Mayapple *Podophyllum hexandrum* and Aswagandha *Withania somnifera* - have been identified as potential candidates for group certification (Sudipto Chatterjee, Co-ordinator, Forestry and Biodiversity Division, WWF-India, New Delhi, *pers. comm*. 28 August 2003).

Credit: Cal Lemke

Aswagandha *Withania somnifera* is considered one of the best tonic remedies in ayurvedic medicine. It strengthens the body's powers of resistance and is used to reduce stress and build vitality.

Organic production of medicinal, aromatic and dye plants

A South Asia regional stakeholders' workshop entitled *Organic Production of Medicinal, Aromatic, and Dye Plants* was organized and co-sponsored by the Food and Agriculture Organization of the United Nations (FAO); the International Fund for Agricultural Development (IFAD); the International Development Research Centre (IDRC); the Medicinal and Aromatic Plants Program in Asia (MAPPA); and Indian Consultants Associate Pvt. Ltd (ICAP, India) and held in Bangalore, India, from 9 to 12 January 2003. The purpose of the workshop was to finalize a draft project proposal on this same theme, for submission to IFAD and other donors (Anon. 2003j).

Summary and further discussion of the review of the certification environment in India

Research for this project revealed no independent, third-party certification of medicinal plants for ecological, organic, social or quality standards in India, although it was found that greater efforts have been made recently by several agencies, including government departments, research organizations and NGOs, for protecting, sustaining and developing the medicinal plant sector. These efforts include research, cultivation and investigations into quality control and standardized manufacture of herbal medicines. Independent fair trade and organic certification schemes were found to apply to teas and other plant products in India generally categorized as foodstuffs, although they may have medicinal properties.

Government schemes for quality assessment, such as ISI (Indian Standards Institution) inspections and the Agmark scheme are in place. The only eco-label programme in India, Ecomark, is also a programme of the Government of India and agencies of the Government of India are the accrediting bodies for certifiers of organic standards. Involvement of such government agencies in certification does not lend a true third-party dimension to the process. The bulk of ISI certifications are required for 135 products, for which certification is mandatory. Companies going for voluntary ISI or Agmark certifications are reported to have an eye on large institutional buyers, largely government organizations, which may give preference to certified quality products.

Besides government certifiers, there are around 40 private certifiers for quality management systems (in relation to the ISO 9000 series) and around 20 for environmental management system standards (in relation to the ISO 14000 series). Several stakeholders interviewed for this study questioned the quality of assessment by many of these certifiers because there are no benchmarks for assessment. Reportedly, the basic principle on which certifications are assessed is one of commitment from a company for continual improvement in performance.

There is an increasing level of response to certification for environmental management system standards, with more than 700 companies certified for the same in India. However, a study by the Central Pollution Control Board (Anon., 2001b) indicated that many companies fail to meet the relevant environmental standards after certification. Two certification consultants interviewed agreed that this was a problem. Some companies hire certifiers by floating tenders without attaching due importance to the reputation of a certifier. A perusal of the list of industries opting for this type of certification reveals that many of them fall in the polluting-industry category. Some interviewees pointed out that the main reason for companies opting for environmental certification is that this helps them deal with the pollution control enforcement authorities. Some companies certified as meeting environmental standards are reported to perceive an advantage in export markets as a result. The “green” image which is promoted through environmental certification is a consideration with some companies. Presently, no herbal industry is reported to have environmental certification.

Organic certification is gaining popularity in India, but mainly for the growing export markets for organic agricultural and food products. The Government of India, aware of this trend, quickly appointed itself as an accrediting agency for organic certifiers, by enacting a law in 2001. The domestic market for organic products is limited.

Fair trade labelling is popular with some sectors, notably with tea producers in India, particularly with the exporting companies. Fair trade certification is gaining in popularity, owing to the demands of export markets in the West. Purchasers in these markets are concerned to ascertain that rugs and other products from India have not been produced using child labour or other means considered exploitative.

In summary, there are some instances of independent certification in India, but these appear to be mainly for organic and fair trade schemes for products aimed at the export market and of only marginal relevance to medicinal plants (in that they market some plant produce which may have possible medicinal applications). There has been recent government-level involvement in protecting, sustaining and developing the medicinal plants sector, including attention to research, conservation, quality control and standardized manufacture of herbal medicines, but this review of the "certification climate" in India does not reveal a vibrant environment for independent, third-party certification programmes aimed at the domestic market, neither for medicinal plants, nor for other goods.

ASSESSMENT OF MEDICINAL PLANT HARVEST AND TRADE IN INDIA IN RELATION TO SOME SALIENT FSC CRITERIA FOR CERTIFICATION OF SUSTAINABLE FOREST MANAGEMENT

Ninety per cent of the medicinal plant species used by the Indian herbal industry are collected from the wild (Anon., 2003a). The trade is secretive, inefficient, imperfect, informal and opportunistic (Holley and Cherla, 1998). Furthermore, the market is unstable (P.S.S. Ramachandran, Exporter, Tuticorin, Tamil Nadu, India, pers. comm., 20 June 2002).

Credit: Pushp Jain

Rhizomes of Kutki *Picrorhiza kurrooa*, a perennial herb with elongate, stout, creeping rootstock, found in alpine regions. The plant is used mainly as a therapy for liver and lung diseases.

Generally, the raw material gathered from forests by primary collectors is passed to markets or to industry through middlemen and/or regional markets. In between are sandwiched contractors, who bid for the right to collect from specified forests and, in some places, there are co-operatives which manage collection. The supply chain varies from species to species and from region to region. Holley and Cherla (1998) point out that "many, and perhaps most, medicinal plants will not follow an exact path. In some cases, there may be multiple sales from one market-based private agent to another, or else the products may be directly marketed by an agent to the final consumer. In addition, trade activities may move in and out of both formal sector, as well as the legal boundaries at various points of the chain of transactions."

Medicinal plant resources are dwindling and there is a short supply of key medicinal species because the potentially millions of collectors have little incentive or skill to practise sustainable harvest. Moreover, the system followed by some State governments, that of auctioning the rights for NTFP harvests within a specific area, for a specific period, with very little control over the actions of right-holders, fails to eliminate unsustainable harvesting practices and over-exploitation of the resources (Anon. 2000a). Local people exploit forest herbs, particularly those which are more in demand and valuable, without regard for systematic exploitation or sustained yield (Anon., 2002d). Destructive harvest from forests is also reported (Anon., 1999c; Anon., 2000b). This is supported by the statistics that indicate that more than 70% of plants collected from wild are harvested destructively (Anon., 2003l).

Forests in India are divided into management units called "divisions", managed by the Forest Department of the State where they occur. Generally, forest management divisions do not have species-specific management plans but they do have negative and/or regulated lists of species for collection. Often, however, collection of many medicinal plants is made illegally. Poor regulation by State forest departments results in collection, transit and trade of legally protected medicinal plants (Anon., 1999c). There is a general lack of reliable, authentic and comprehensive information on trade, but it is feared that large-scale illegal trade is threatening biodiversity (Anon. 2002j).

A glance at the simplified FSC criteria compiled by Mallet and Karmann (2000), useful in measuring the sustainability of all types of production systems (see page 6), reveals that many of the criteria would be difficult to meet in India, with regard to medicinal plants. These include the criteria relating to management plans; monitoring and evaluation; ecological harvesting and management activities; biodiversity conservation; fair returns and adequate benefits; a safe and healthy working environment; and economic viability.

FSC mandates that its 10 Principles and accompanying Criteria for assessment of forest management, including plantations, are to be followed by FSC-accredited certifiers when assessing applications for FSC certification. Presently, FSC approves certification of NTFP on a case-by-case basis, but the generic guidelines for assessing the management of NTFP in Shanley *et. al.* (2002) emphasize that NTFP "shall be managed in accordance with Principles and Criteria 1-10 of the FSC and (draft) Principle 11 and its criteria". Taking a selection of a few FSC Criteria for assessing forest management (timber as well as NTFP), the situation on the ground in India can be compared, to give an idea of discrepancies between the two (see below).

"**1.5** Forest management areas should be protected from illegal harvest, settlement and other unauthorised activities." **Situation in India**: *Illegal and destructive harvest is reported from most of the forests.*

"**5.1** Forest management should strive towards economic viability, while taking into account the full environment, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest." **Situation in India**: *There has been no scientific auditing of environmental and social costs of production for NTFPs legally allowed for harvest. Revenue generally earned from production goes to government coffers: managers of forest divisions would have to request funds from the government for maintaining the ecological productivity of the forest.*

"**5.6** The rate of harvest of forest products shall not exceed levels which can be permanently sustained." **Situation in India**: *Exceptions apart, inventories of medicinal plants in most forest management divisions have not been carried out and sustainable harvest levels have therefore not been determined.*

Credit: WWF-India

Farmers learning to plant medicinal plants (here *Picrorhiza kurrooa*) in the village of Barsu, Block Bhatwadi, Distt., Uttarkashi, Uttaranchal, India.

"**6.1** Assessment of environmental impacts shall be completed - appropriate to the scale, intensity of forest management and the uniqueness of the affected resource - and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impact of on-site processing facilities. Environmental impacts shall be

assessed prior to commencement of site-disturbing operations." **Situation in India**: *No scientific environmental impact assessment has been carried out for harvest of NTFP.*

"**6.3** Ecological functions and values shall be maintained intact, or restored, including a) forest regeneration and succession; b) genetic, species, and ecosystems diversity; c) natural cycles that affect the productivity of the forest ecosystems." **Situation in India**: *Even if a forest manager desires to maintain ecological functions and values of the forest intact, he may not be equipped with the necessary scientific knowledge. No such expertise is secured with regard to the harvest of NTFP.*

Criterion **7.1** refers to a management plan for the operation in question. **Situation in India**: *In principle, each forest division in India is managed according to a 10-year management plan. Exceptions apart, these management plans largely focus on commercially important timber species and a few very important, commercially harvested NTFP. Generally there are no management plans for medicinal plants.*

"8.2 Forest management should include the research and data collection needed to monitor, at the minimum, the following indicators: a) yield of all forest production harvested; b) grow rates, regeneration and condition of the forest; c) composition and observed changes in the flora and fauna; d) environmental and social impacts of harvesting and other operations; and e) costs, productivity, and efficiency of forest management." **Situation in India**: *No such research and data collections are carried out.*

From the comparisons above, it is clear that there is a wide gulf between the management, trade and use of NTFP in India and FSC's criteria for NTFP certification.

CONSULTATION ON CERTIFICATION OF MEDICINAL PLANTS

A consultation meeting on the certification of medicinal plants was organized to discuss the provisional research findings of the project on which this report is based. A draft of the report was circulated to the participants in advance of the meeting, which was held on 22 August 2003, at the International Development Research Centre (IDRC), New Delhi, India. The 12 participants included representatives of government agencies, research institutes, industry and industry associations, accreditation and certifying agencies and NGOs.

The discussion was facilitated by Mr Manoj Misra, Indian Forest Service (retired), Executive Director, P.E.A.C.E. Institute, New Delhi, and addresses were heard from:

- Mr N.K. Joshi, Director General of Forests, Ministry of Environment and Forests (MoEF), Government of India, New Delhi;
- Mr R.B.S.Rawat, Chief Executive Officer, National Medicinal Plant Board (NMPB), Government of India, New Delhi; and
- Dr M. Karki, Regional Programme Co-ordinator, Medicinal and Aromatic Plants Programme in Asia (MAPPA), IDRC-SARO, New Delhi.

In his presentation, the author explained what the project was about, why it was deemed necessary, and the methodology and strategy used for research. He presented a general review of the international certification scenario, particularly for sustainable forest management for NTFP. He highlighted that programmes such as

FSC, IFOAM, FLO, and others, have management of ecological, social, and economic issues as their objectives. The rigorous process of standard-setting and the independent and third-party character of these certification programmes was stressed and details of FSC's Principles and Criteria and the guidelines for certification and management of NTFP set out in Shanley *et al.* (2002) were provided. A review of the certification environment in India was given, and the conclusion - that there is a lack of a vibrant environment for independent certification in India - was communicated to the meeting.

Credit: Ms Reena Prasad/IDRC

Participants at the Consultation on Medicinal Plant Certification, (clockwise) Mr Manoj Misra, Indian Forest Service, (retired), Executive Director, P.E.A.C.E. Institute, New Delhi; Mr R.B.S. Rawat, Chief Executive Officer, National Medicinal Plant Board (NMPB), Government of India, New Delhi; Mr N. K. Joshi, Director General of Forests, Ministry of Environment and Forests (MoEF), Government of India, New Delhi; and Dr Madhav Karki, Regional Programme Co-ordinator, Medicinal and Aromatic Plants Programme in Asia (MAPPA), IDRC-SARO (International Development Research Centre, South Asia Regional Office), New Delhi.

The presentation of current practice for medicinal plant harvest and trade in India measured against management of these according to the Principles and Criteria of FSC highlighted that the management of NTFP in India is a long way from meeting the FSC standards for certification of sustainable forest management.

The final part of the presentation focused on draft recommendations emerging from the project, which were:

- adoption of best practices;
- the learning of lessons from sustainable forest management standards;
- the improvement of planning and management of forests; and
- the development of national guidelines for medicinal plant management.

Mr Joshi, Director General of Forests at MoEF, stressed in his address that India had a traditional system of sustainable forest management but that the tremendous increase in biotic pressure was putting a strain on forest resources and management. He pointed out that the current working plans of forest management divisions do address management at species level, but the examples he gave related to commercially important tree species (for example, Sal *Shorea robusta,* Teak *Tectona grandis,* etc.) and to soil conservation. He agreed that there was a need for scientific management of forests and the exploring of new ideas. He pointed out that he was "keen on the issue of certification" and had "gone over every word of the draft report". Stating that he felt better informed after reading it and through participation in the Consultation, he concluded that there was "an urgent need to constitute a national working group on certification to look into all aspects of the issue" in India.

Mr Rawat, of the Indian Government's National Medicinal Plant Board, highlighted the need for developing national standards for the certification of medicinal plants. He stressed that World Health Organization draft guidelines on good agricultural and field collection practices for medicinal plants were most comprehensive and

could be reviewed and adopted for India. He agreed with Mr Joshi's suggestion for setting up a national working group on certification and added that it should be multi-disciplinary and multi-ministerial so that convergence of resources would be possible. During the discussion, Mr Rawat pointed out that India was "ready for certification", but that adequate initiatives were not in place.

Credit: Ms Reena Prasad/IDRC

Mr Manoj Misra steering a discussion at the Consultation on Certification of Medicinal Plants, in New Delhi, 22 August 2003.

During discussion, other speakers raised various points: Dr Brindavanam (of Dabur India Limited, a food and pharmaceuticals company) and Dr Madhav Karki (IDRC), noted the Chhattisgarh certification workshop, held in Raipur on 9 April 2003; Dr Manmohan Yadav (IIFM) cited research into certification at the Indian Institute of Forest Management in Bhopal; Mr Sudipto Chatterjee (WWF-India) mentioned WWF-India's scoping exercise into medicinal plant certification; Mr Vijay K. Mediratta (Quality Council of India) alluded to the institutional capacity of the Quality Council of India and Ajay Rastogi (ECOSERVE) spoke on FLO in India.

Participants generally agreed with the draft recommendations of the research. Dr Madhav Karki suggested, however, that "best practices" should be amended to "good practices" and Mr R.B.S. Rawat suggested that there should be no specific reference to any institution for research in certification. Several participants agreed with Mr Joshi's suggestion for constituting a national working group on certification and added that one of the responsibilities of such a working group should be to develop national standards, which Mr Ajay Rastogi and Dr Manmohan Yadav suggested should be "umbrella standards", taking into consideration all ecological, social, institutional and economic issues, and having a holistic approach. Mr Mediratta suggested that national standards should be based on international standards. Several participants suggested the need to involve industry in the process from the very beginning. Dr Haldar pointed out that any standards should be field-tested before adoption. Dr Yadav added that the guidelines of the International Tropical Timber Organization (ITTO) for sustainable forest management should also be considered in the development of national standards.

Mr Sudipto Chatterjee cautioned that, before setting up a national certification programme, it should be assessed how acceptable this would be from a market perspective, since global experience showed that this could be very difficult. He stressed that actual certification should be linked to demand for certified products. Dr Manmohan Yadav suggested that, in case all the principles of sustainable forest management were not possible to adopt in one go, then a phased approach would be useful. Mr Ajay Rastogi stressed that organic certification was becoming complex, with many countries, for example, the USA, Japan and European countries, having their own standards creating the need for certifiers to have accreditation from a variety of sources before they could do business. He questioned the acceptability of IFOAM worldwide and suggested that it would be important to incorporate standards on microbial contamination in any certification plan for medicinal plants, because this was a global concern. Dr Aditi Haldar was concerned about the interests of small farmers. There was some discussion on experimenting with group certification, which could help in cost-sharing, ease of control and

streamlining of practice. Dr Brindavanam, as a representative of industry, assured the meeting that large industries, in particular, would like to procure material from certified operations and would be ready to pay more for such material. He cited research, supported by the Department of Indian Systems of Medicine and Homeopathy of the Ministry of Health and Family Welfare, into supply and demand for 162 medicinal plants, which found that demand for about 62 types of plant constituted 80% of the total demand (for around 400 different plants). He pointed out that plants in high demand should be the first to benefit from research into guidelines for species-specific management.

Additional information from the meeting has been incorporated in other sections of this report, including the Conclusion and Recommendations, where appropriate. The consultation meeting helped in the validation and improvement of the project findings and recommendations.

DISCUSSION AND CONCLUSIONS

No independent, third-party certification of medicinal plants for ecological, organic, social or quality standards has been reported in India, with the exception of a very few instances, mainly of fair trade and organic certification, chiefly for products more usually associated with mainstream food and beverages, such as tea and nuts, destined for export.

The FSC programme provides a good model for certification of NTFP, including medicinal plants, but comparison of medicinal plant collection, use and trade in India with key FSC criteria for sustainable forest management indicates that any process to seek this type of certification for medicinal plants in India would encounter many obstacles. Ninety per cent of medicinal plant species collected in India are taken from the wild, sometimes illegally, and 70% of medicinal plants are estimated to be extracted in a destructive manner. Trade in the plants is secretive, informal, imperfect and disorganized. The chain of transactions from collector to final consumer, through numerous middlemen, including local and regional traders and/or co-operatives etc., is not fully understood and is known to vary from region to region and from species to species. Industry uses many medicinal plants, procuring them from different sources, to make formulations comprising several species. In short, the harvest and trade of medicinal plants currently in India is largely opportunistic and unregulated and certainly there are no national guidelines for assessment of NTFP management in India, as required prior to any certification for medicinal plants according to FSC standards. With the theoretical exception of one or two categories of certification - chain of custody and group certification for cultivated plants - third-party certification for sustainable management of medicinal plants in India is not achievable in the short term.

Even if one hypothetically assumes that FSC-style accreditation of sustainable management of medicinal plants were possible at present in India, no stakeholder - be they collector, middleman, agent, trader, co-operative, or industry - seems to be ready for certification in other ways, not least in terms of cost. As was pointed out by Mr Ranjit Puranik, an important executive member of the Ayurvedic Drug Manufacturers' Association in India, "Certification *per se* is a concept which is well before its time in the current context for the ayurvedic sector, which is dealing with resurgence after a long period of being alternative. Industry is also dealing with the impact of other regulations being brought in to effect, for example, GMP, patent and proprietary licensing norms, etc." (Mr Ranjit Puranik, *in litt*., 21 August 2003). It has been pointed out repeatedly that certification is basically a market-based tool, that is, it enhances marketing potential (Mallet and Karmann, 2000). As far as the domestic market for medicinal plants and herbal medicine in India is concerned, consumers are not even aware of the ecological and social aspects of medicinal plant use and trade, let alone inclined to seek out products certified to be eco-friendly or produced in a socially responsible manner. Progress in certifying products under India's only

eco-labelling programme, Ecomark, has been painfully slow. Therefore, although one participant at the Consultation indicated readiness among some large industries to purchase certified produce, this is of little consequence without consumers ready to pay the extra price for sustainably managed and certified forest products. Research findings indicate that this consumer group is insignificant in India at present - the fact is, there appear to be no drivers for certification. In other words, as Shanley *et al.* (2002) have pointed out, "the scope for certification to promote sustainable and socially responsible practices is thus limited to a select, small number of formalized, internationally-traded non-timber forest product species" at present.

During the course of research for the project, some stakeholders suggested that certification should be promoted through education and awareness-raising among consumers and stakeholders and through incentives for industry, balancing the costs and benefits of certification. However, such strategies are reported to involve very large investment and need to be long-term; markets do not appear to have evolved as quickly as some might have expected in countries such as the USA, despite a significant effort to create them (T. Mulliken, Research and Policy Co-ordinator, TRAFFIC International, Cambridge, UK, pers. comm. 22 April 2003).

There was excitement among some stakeholders, particularly within government agencies, that India may be "ready for certification", perhaps in the sense of being ready to explore the certification process for medicinal plants, with a view to researching, understanding, developing and customizing standards for conditions in India. The suggestion emerging from the Consultation on Certification of Medicinal Plants to constitute a multi-ministerial and multi-disciplinary national working group on certification would seem useful, particularly in working towards the formulation of national standards for the certification of medicinal plants, which it was agreed should be one of the conclusions of the Consultation. In terms of sustainable medicinal plant management certification in India, any national working group established for setting standards should be with the sanction of the FSC and/or other bodies experienced in applying certification standards for this sector. Indeed, it would be beneficial if stakeholders worked with such experienced certifiers to get some forest lands certified before going through the setting of national standards, in order to develop interim standards for assessing forest management. This would provide a track record for analysing the practical application of standards in India, that could then feed into the development, testing and refinement of national standards. This avoids the pitfall of a paper exercise without assessing the application of criteria in the context of India (Walter Smith, SmartWood, *in litt*., 4 September 2003). Certification of medicinal plants for organic, fair trade and/or quality standards in India is also worth exploring. One company producing medicinal plant products has already received certification for quality standards under the ISO 9000 system and organic and fair trade certification exists already in India for plant products in the foods and beverage industry.

To conclude, there can be no doubt that neither management of the forests where most of India's medicinal plants are currently harvested, nor the Indian consumer is yet ready for certification. Can certification secure a sustainable future for medicinal plants, harvesters and consumers in India? The answer is that it is too soon to tell, but not too soon to explore the question further.

RECOMMENDATIONS

- **Develop "good collection practices" for medicinal plants from forests**. Preferably, guidelines should be developed at species level for those taxa for which destructive collection is reported. Efforts need to be made to organize harvesters into co-operatives or societies and to implement the practices by providing motivation, training and incentives.

- **Develop "good sourcing practices" for industry**. Industry associations, particularly the Ayurvedic Drug Manufacturers' Association, may take a lead in developing these, with the support of the Department of Indian Systems of Medicine and Homeopathy and the National Medicinal Plants Board, and with the collaboration of other stakeholders (research institutes and NGOs, for example). Development of such practices might be linked to elaboration of the World Health Organization "Good Agricultural and Field Collection Practices" and revised WHO/IUCN/WWF *Guidelines on Conservation of Medicinal Plants*, currently in preparation.

- **Experiments to measure management of selected medicinal plants - high-value species, traded in high volumes, nationally and internationally - against some key international standards and criteria for forest management (for example, FSC Principles and Criteria and the standards for sustainably managed NTFP in Shanley *et al.,* 2002) should be made in some forest management divisions**, particularly in States like Chhattisgarh and Uttaranchal, which have declared themselves "herbal States". Experiments for assessment of chain of custody certification (for material originating from easily certifiable plantations and legal sources) and assessment of group certification for small cultivators should also be tried. Similarly, experiments to assess the applicability of internationally-recognized organic and fair trade standards to medicinal plants in India, beyond the very marginal range to which they currently apply, should be assessed. In all experiments, third-party assessment would be useful, in order to help the government, NGOs, and project managers measure progress towards international-level targets and, possibly, the eventual setting of national standards.

- **Awareness of stakeholders (particularly forest managers and members of industry) regarding criteria for sustainable management of medicinal plants should be increased**, through the media and meetings, for example, so that they may adopt these in resource management as far as possible.

- **The Indian Institute of Forest Management should include NTFP in its certification study programme**.

- **The potential to link a requirement that medicinal plant materials originate from sustainable and legal sources to implementation of the Good Manufacturing Practices requirement under the *Drugs and Cosmetics Act, 1940* should be explored.**

- **A national, multi-ministerial and multi-disciplinary, working group on medicinal plant certification should be constituted**, to look into all aspects of certification. It would be advisable to constitute such a group and to set its agenda in consultation with internationally-recognized certification bodies, whether for sustainable forest management or organic, fair trade and quality standards. The development of any national standards for certification will need to be a careful and elaborate process, evolving through the stages of development of interim standards, field-testing, and refinement of finalized standards.

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Annex I

List of Participants at the Consultation on Certification of Medicinal Plants at the International Development Research Centre (IDRC), New Delhi, 22 August 2003

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ABBREVIATIONS AND ACRONYMS USED IN, OR ASSOCIATED WITH, THIS REPORT

ADMA	Ayurvedic Drug Manufacturers' Association (Mumbai)
AGMARK	Quality Certification Mark issued by an agency of Ministry of Agriculture
AICRPE	All-India Co-ordinated Research Project on Ethnobiology
APEDA	Agricultural Products Export Development Authority
BIS	Bureau of Indian Standards
BMZ	*Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung*
CII	Confederation of Indian Industries (New Delhi)
DISM&H	Department of Indian Systems of Medicine and Homeopathy (New Delhi)
EMS	Environment Management Systems
FAO	Food and Agriculture Organization of the United Nations
FICCI	Federation of Indian Chamber of Commerce and Industry
FLO	Fairtrade Labelling Organizations (Germany)
FMCG	Fast-moving consumer goods
FSC	Forest Stewardship Council
GMP	Good Manufacturing Practices
ICFRE	Indian Council for Forest Research and Education
IDRC	International Development Research Centre
IFAD	International Fund for Agriculture Development
IFOAM	International Federation of Organic Agriculture Movements (Germany)
IFS	Indian Forest Service
IIFM	Indian Institute of Forest Management, Bhopal, Madhya Pradesh
IMO	*Institute für Marktokologie*, Switzerland
IRFT	International Resources for Fairer Trade
ISI	Quality Certification Mark issued by Bureau of Indian Standards
ISM	Indian Systems of Medicine
ITTO	International Tropical Timber Organization
MAPPA	Medicinal and Aromatic Plants Program in Asia, IDRC, New Delhi
NAPP	National Accreditation Policy and Programme
NISCOM	National Institute of Science Communication, New Delhi
NMPB	National Medicinal Plants Board, New Delhi
NPOP	National Programme of Organic Products
NTFP	Non-timber forest products
PEFC	Pan-European Certification Process
QMS	Quality Management System
SFM	Sustainable management of forests
Skal	An international certification agency with a branch in India
TERI	The Energy and Resources Institute, New Delhi

TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

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