

BEYOND TIMBER: CERTIFICATION OF NON-TIMBER FOREST PRODUCTS

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PREFACE

Forest certification is a market-based instrument that aims to encourage sustainable forest management for the multiple values of the forest, beyond timber to include non-timber forest products and services, social and cultural values and future options. To date, there are about forty-six commercial non-timber forest products for which certification standards have been approved and on-going evaluations of over six more evaluations of some of the original products in new countries and forest types. Thus far, the share of certified timber in the marketplace makes up less than 1 percent of the total forest area and less than 3 percent of the total timber trade value, although it is growing significantly. The share of the commercial value of certified non-timber forest products is even less, as NTFP certification is still in its infancy.

There have been a range of studies of the status of timber and wood product certification and the issues and challenges for moving forward. However, there is much less documentation of the status of forest certification and non-timber forest products that either look at the impacts of forest certification for the sustainability and harvesting of non-timber forest products or at opportunities and challenges for incorporating certification standards for commercially important products into the various certification schemes.

The issues surrounding the certification of forests with significant non-timber forest product values—for both subsistence and commercial use—are complex and varied. Non-timber forest products cover a wide range of roots, barks, stems, exudates, leaves, fruits, flowers, seeds, fungi, invertebrates as well as birds, animals and related products. Some products are extremely important for subsistence use and traditional lifestyles and cultures. Others have high commercial values, some of which may be quite cyclical or volatile, while others may be fairly stable in value. Some products have a very significant measured share of the market—116 traded products generate 7.5 to 9 billion in global trade, while medicinal and cosmetic ingredients generate another \$108 billion.

Demand for these products is changing, with dramatic increases in developing countries where rises in mean income and in population size have created interest in culturally significant foodstuffs, fibers, medicinal plant, and botanical ingredients of cosmetics and other products. There is a mushrooming demand in the developed countries for culturally important non-timber forest products and for products related to alternative medicines and alternative lifestyles. Such trends challenge the traditional economic characterization of NTFPs as inferior, elastic and substitutable, indicating that many products retain stable and growing markets, even in the face of rising incomes and increasing access to synthetic substitutes.

Many products are collected by harvesters who do not have secure access or tenure rights over the forest resource and many products are collected over a non-specific forest area, making area-based certification standards difficult to apply. There are a number of alternative standard-setting processes ranging from wildcrafter standards, organic production, good agricultural practices, fair trade standards and good agricultural practices or validation of manufacturing methods.

Certification processes in tropical forests can be instrumental in raising awareness of commercial timber managers and producers of the interrelationship between timber and non-timber production and sustainability in specific forests and forest regions. This is extremely important for species which have both

wood and non-wood values and markets and to ensure that timber operations do not negatively affect subsistence and commercial harvesting of non-timber forest products from the same forest area. In spite of protective standards, certification of timber can create additional pressures on NTFPs. For example, some tree species widely used for their medicinal barks and exudates in Brazil, and characterized as at risk by ecologists, are currently commercialized as certified timber in the US. Growing interest by timber companies in extraction of not only timber but high-value NTFPs, could either prohibit access of rural collectors to forest products or help NTFP harvesters to broaden their trade opportunities.

This paper tries to provide answers to the following questions:

- How applicable are the forest certification schemes to the requirements and issues regarding the harvesting and management of non-timber forest products? How compatible are the two sets of standards in cases where both types of products can be harvested from the forest?
- What have been the models applied in cases where the harvesters of non-timber forest products are different from those who harvest or have the rights to manage and harvest timber?
- Under what conditions is certification a useful tool for NTFP collectors? In those circumstances when it is appropriate, how can forest certification be made accessible to different types of non-timber forest product harvesters and users, many of whom are small producers?
- Where does the forest certification option fit in with other types of sustainable or just management and harvesting standards?
- What are the broader implications of setting standards for non-timber forest products for industry, governments, communities and small producers?

The experience to date shows both specific opportunities and significant challenges. Knowledge is key—both for generating effective management standards as well as increasing the two-way flow of knowledge between collectors with often highly-developed management practices but poor market information and commercial buyers and industries and government regulators who are often unaware of traditional use and knowledge but who understand and shape the productive market chain. There is a need to better understand the appropriate niche that forest certification can play and provide enabling conditions, to understand and support the alternatives and to respect the knowledge and skills of small producers and harvesters, and to recognize the mutual benefits sustainable NTFP production generates for the resource and for producers and the consumer.

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INTRODUCTION

Non-timber forest products (NTFPs) are critical to rural livelihoods in both temperate and tropical areas. They provide communities with important subsistence resources like medicine, food and shelter, as well as a source of cash income. NTFPs are also part of large regional and international markets, and for centuries products such as spices, medicinal plants, fragrances and resins spurred explorations and sustained trade routes across the globe.

Non-timber forest products (NTFPs) are biological resources derived from natural forests, agro-forestry systems and plantations, including medicinal and edible plants, fruits, nuts, resins, latex, essential oils, fiber, fodder, fungi, fauna and small diameter wood used for crafts. In recent decades, increasing government research and NGO attention has focused on the potential for NTFPs to play an important complementary role to timber and agriculture in rural livelihoods and to contribute to conservation and sustainable management of forests. In the mid-1990s this attention came to include certification of NTFPs.

Certification is a relatively new forest policy tool that attempts to foster responsible resource stewardship through the labeling of consumer products. The premise is that consumers will seek out and support products that are reputedly certified as hailing from well-managed sources. To date, forest management certification has focused on timber products, although some attention is now being given to NTFPs. While many lessons can be drawn from timber certification, transfer of existing timber-based guidelines and procedures to NTFPs is not possible. Non-timber forest resources are a more difficult group of products to certify than timber due to a multitude of factors, including their exceedingly diverse and idiosyncratic nature, and social and ecological complexity. However, in spite of these challenges, opportunities exist to promote sound ecological and social practices in NTFP management and trade (Shanley et al. 2002).

This paper addresses the state of the art in NTFP certification, still in its infancy but rapidly evolving at present. We begin by providing an overview of NTFP certification today, current standards applicable to NTFPs and then compare timber and non-timber product certification. Next, we express concerns regarding the accessibility of NTFP certification and discuss efforts to make certification more accessible to small producers. This is followed by an analysis of NTFP certification through five lenses, ecological, social, economic, legal and technical, using illustrative case studies from Africa, Asia and Latin America. In closing, we describe broader implications of the process of setting standards for non-timber forest products for industry standards, producer guidelines and policy guidance and offer recommendations for policy and practice.

THE VALUE OF NTFPS IN LIVELIHOODS AND TRADE

The most significant value of NTFPs lies in their subsistence uses (e.g. medicine, food, shelter) and trade in local markets. Farnsworth (1985) estimated that 80% of the world's population relies on traditional, largely plant-based, medical systems for their health care needs. NTFPs are estimated to account for as much as 25% of the income of close to one billion people (Molnar et al. 2004). Even in post-industrialized nations such as the USA, NTFPs provide a safety net that allows numerous people to survive in regions poorly

served by the market economy (Emery and Pierce, in press). Forests are a source of food, medicine and shelter to all classes during wartime and famine (Pierce and Emery, in press). NTFPs also play vital roles in local culture, identity, myths, folklore and spiritual practices in every corner of the globe.

At the same time, NTFPs supply diverse industry sectors with raw materials that are used in industrial applications or are consumed as medicines, food, and personal care products. The global trade in NTFPs is estimated to be worth US\$ 11 billion (FAO 1993; Walters 2001). Global sales of botanicals, natural personal care and sports products, and homeopathic remedies alone topped \$45 billion in 2002 (Nutrition Business Journal 2003; see Table 1 for additional examples).

Through harvest, trade or use, NTFPs impact a vast number and range of individuals. For example, Dransfield and Marnokaran (1994) estimate that 0.7 billion of the world's population use, or are involved in, the trade of rattan and rattan products, while bamboo products are used and/or traded by a staggering 2.5 billion people (Nature News Service 2003). But demand for NTFPs is characterized by change. Demand for botanicals in the 1990s in the United States, for example, grew at a rapid pace, but is currently holding steady. During the last two decades the value of rattan exports increased 250-fold for Indonesia and 75-fold in the Philippines (Palis 2004). Species with once significant markets, which had been in decline, have seen demand surge as part of a post-modern revitalization of ancient traditions. These include vegetable ivory, panama hats, crafts, chicle (*Manilkara zapota* latex) for chewing gum and in some cases botanicals (Alexiades and Shanley 2004). Other species once used only by rural populations such as cat's claw (*Uncaria* sp.), sangre de drago (*Croton* sp.), and the fruit of açai palm (*Euterpe oleraceae*) in Latin America (Alexiades 2002), rattan in Africa (Sunderland et al. 2002), fiddlehead ferns (*Matteuccia struthiopteris*) in the US (Pierce 2002b) and kava (*Piper methysticum*) in the South Pacific are now popular with urban elites in their native countries and around the world.

Table 1: Values and Volumes of Select Traded NTFPs

Common name	Scientific name	Origin	Habit, Cultivated/Wild harvested	Plant part used (Use)	Conservation status	Trade data
Brazil nut	<i>Bertholletia excelsa</i>	Brazil, Bolivia, Peru	Tree, wild harvested	Nut (food)	Reduction in forest area but protective legislation exists in Brazil, Peru and Bolivia (Ortiz 2002)	In 1998, in Bolivia US\$ 31 million
Palm heart	<i>Euterpe edulis</i> <i>Euterpe oleraceae</i> <i>Bactris gasipaes</i>	Bolivia, Brazil	Palm, wild harvest and cultivated	Shoot (food)	<i>Euterpe edulis</i> in the Atlantic Forest, Brazil - threatened	In 1998, Bolivia US\$ 12 mill.; Brazil, US\$ 27 mill. (CIFOR 2004)
Maple syrup	<i>Acer</i> sp., principally <i>Acer saccharum</i>	USA, Canada	Tree, wild harvested	Exudate/sap, (sweetener)	Asian long-horn beetle, a maple boring insect, may become a threat. Crown die-back may be result of climate change (Pierce 2002c)	2003 global production of 8 million gallons (USDA 2004)
Rattan	650 species belonging to 13 genera. <i>Calamus</i> sp. is the largest genus with circa 350 species (Sunderland and Dransfield 2002)	Southeast Asia Africa	Vine, wild and cultivated	Vine (handicrafts furniture)	4 of the major traded species are threatened (Sunderland and Dransfield 2002); species-dependent overexploitation in Philippines, Vietnam and Indonesia (Kusters and Belcher 2004)	US\$ 6.5 billion per year (ITTO 1997)
Bamboo	Over 1,000 species from numerous genera	Asia, Africa and South America (forests of the Andes and Amazon)	Woody, climbing and herbaceous species, wild and cultivated	Stem, shoot (construction, furniture, human food, provides shelter and food for endangered wildlife)	One half of the 1,200 woody species are in danger of extinction (UNEP WCMC study 2004)	2.5 billion people trade in or use bamboo; international market over US\$2 billion per year (Nature News Service 2004)
Cork	<i>Quercus suber</i>	Mediterranean - Portugal, Spain, Algeria, France	Tree bark, wild harvested	Bark (stoppers, insulation)	Degradation from grazing, fuelwood collection, agriculture	Annually US\$ 240 million (Moussouris and Regato 2002)

Pygeum	<i>Prunus africana</i>	East, Central and West Africa, Madagascar	Tree, majority wild harvested; some efforts to cultivate	Bark (Medicinal)	CITES Appendix II	Annual market value estimated at \$150 million; annual harvest estimated at 3,5000 metric tons (Cunningham et al. 1997)
Yohimbe	<i>Pausinystalia johimbe</i>	West-Central Africa	Tree, wild harvested	Bark (medicinal)	Secure – but perhaps not as “common” as described (see Sunderland et al. 2002)	120 tons of bark shipped to Europe in 1996 (Simons 1997); yohimbe products worth \$2.4 million in sales in the U.S. in 2002 (Blumenthal 2003)
Ginseng	<i>Panax ginseng</i> , <i>P. quinquefolius</i>	Asia and North America respectively	Herb, wild harvested and cultivated	Root (Medicinal)	CITES Appendix II; UPS “at risk” list	284,000 kg dried cultivated roots and 189,000 kg dried wild roots exported from USA in 2003 at a combined estimated value of US\$ 38.6 million (US ITA 2004)
Sandalwood	<i>Santalum</i> sp.	South Asia	Tree, wild harvested and some cultivation	Wood (essential oil)	Of concern, rare through over-exploitation in the wild	65 tons of sandalwood oil were exported from India in 1990/91 (Coppen 1995)
Butcher's Broom	<i>Ruscus aculeatus</i>	Southern Europe east of Turkey	Shrub, wild harvested with little cultivation	Root (medicinal)	Listed in Annex V9b) of the EC Habitats, Fauna & Flora Directive, threatened in much of its range (Lange 1998)	2000 tons of fresh roots harvested per year in Turkey (Lange 1998)
Rubber	<i>Hevea brasiliensis</i> and other species	Southeast Asia (plantations), South America	Tree, cultivated, some still wild harvested in South America	Latex (industrial applications, mainly tires; vegetable leather)	World demand for natural rubber for tire manufacturing outpaces supply. Asian plantations may be susceptible to pests and pathogens.	World production of natural rubber was 6,850,000 metric tons in 2000 (Bank of Thailand 2004)
Sangre de drago	<i>Croton lechleri</i>	South America	Tree, wild harvested and cultivated	Latex (medicinal)	Secure, but species is patchily distributed and may be under pressure in some areas (Alexiades 2002b)	26 tons of latex shipped to the U.S. in 1998 (Alexiades 2002b)

Notes: UPS=United Plant Savers, CITES=Convention on International Trade in Endangered Species of Flora and Fauna.

Source: Adapted from Pierce and Laird (2003).

CURRENT EFFORTS TO DEVELOP STANDARDS AND CERTIFY NTFPS

Numerous standards applicable to non-timber forest products have been developed in the organic forest management, fair trade, quality control and other sectors (Pierce et al. 2002). Examples of standards that apply to NTFPs include (Pierce and Laird 2003):

- Ecologically responsible forest management standards (e.g. Forest Stewardship Council – FSC);
- Organic standards that ensure pesticide-free agricultural production or wild harvested products from agroforestry systems;
- Fair trade certification programs that assure equitable sharing of profits among producers, workers' rights and decent working conditions;
- Wildcrafter guidelines that outline best harvesting practices for gatherers;
- Good agricultural and collection practices (GACP) guidelines that set standards for proper handling and sanitation of starting materials during harvest, storage and shipping;
- Good manufacturing practices (GMP) criteria that set guidelines for facilities, personnel and processing procedures (i.e. food and herbal dietary supplements); and
- Quality control and methods validation programs that assure the proper preparation of materials, including species authentication, absence of heavy metals and pesticide residue and correct chemical composition in standardized products.

Producers must weigh the costs and benefits of various schemes to determine whether or not a particular set of standards is a good fit for their product, their consumer base and their organizational capacity. For example, a maple syrup producer in Vermont weighed the pros and cons of organic and FSC certification, and ended up expressing a preference for organic certification because of its lower cost, program assistance with product tracking and label recognition (see Box 1). Table 2 provides an overview of the foci, strengths and weaknesses of some of the existing standards for NTFPs, particularly those relating to medicinal plants.

Table 2: Attributes of Various Standards and Certification Programs for Non-Timber Forest Products

Program ? Attribute ?	Wildcrafter Standards	Organic Certification	FairTrade Certification	Ecological Certification	Good Agricultural and Collection Practices	Good Manufacturing Practices	Methods Validation Programs
Emphasis	Guidelines for harvesters	Pesticide-free standards; organic-processing guidance	Assures fair wages and good working conditions	Forest ecosystem assessments	Proper sanitation and handling of herbs	Standards for appropriate facilities and trained personnel	Standards for proper preparation of botanical remedies
Weakness	Difficult to implement; relies on harvesters to be organized or accept organization	Single species orientation; weak forestry and ecosystem standards	Mainly focused on high volume/high value agricultural commodities	No attention to processing or manufacturing stages of production	Little to no ecological or social criteria for sourcing of herbs	No attention to sourcing issues	Overlooks sourcing issues, variable standards and applications
Main Message	Trained or certified ecologically-sensitive harvesters	Pesticide-free herbs	Equitable trade with producers, fair labor conditions	Sustainable forestry and harvesting, healthy forest ecosystems	Contaminant-free starter materials	Clean and safe manufacturing	Botanical medicines produced by standardized methods
Oversight	Voluntary or mandatory guidance	Independent certification to third-party accreditor standards or government standards	Independent verification by third-party certifiers	Independent verification through third-parties	Second- or third-party oversight	Second- or third-party oversight – usually a government regulation	First- or third-party companies and laboratories
Agents	Private companies, associations & NGOs (e.g. Canadian Ethical Wildcrafting Association, United Plant Savers)	NGOs government programs (e.g. Soil Association, Organic Crop Improvement Association, U.S. National Organic Program)	NGOs (e.g. Members of the FairTrade network - Max Havelaar, Fair Trade Canada or groups such as Oxfam)	Certifiers accredited by the Forest Stewardship Council (e.g. SCS, SGS, SmartWood, Soil Association)	Governments, trade associations & international organizations (e.g. the European Agency for the Evaluation of Medicinal Products, the World Health Organization)	Governments and trade associations (in the U.S. for herbal products) (e.g. NSF International, National Nutritional Foods Association)	Internal company programs, independent laboratories (e.g. Indena, Institute for Nutraceutical Advancement, Shuster Labs)

Source: Pierce and Laird (2003).

Box 1 – Maple Syrup Certification in the USA

By Alan Pierce

In January, 2000, SmartWood, an FSC-accredited certification body, finalized a set of maple syrup certification standards in consultation with foresters, maple experts and maple producers (see Pierce 2002c). In February of 2000, the Merck Forest and Farmland Center in Rupert, Vermont requested to have their maple stands (sugarbushes) evaluated under the new guidelines. Merck had already obtained FSC endorsement for its timber operations in 1999, thus the sugaring assessment was an “add-on” certification rather than a holistic assessment of timber and non-timber products.

Merck Forest and Farmland Center is a non-profit organization with a strong environmental education component. Revenues from the timber, farming and sugaring operations supply about 25-33% of the annual operating budget. Merck’s farmlands are organically certified and in 2002, the maple sugaring operation was awarded an organic certificate. Merck staff viewed the attainment of certification as an information seeking process, a method to explore the increasing value of forest and farm products, a way to assess their overall management quality and an avenue to justify management practices with the public.

In 2000, Merck had roughly 1,500 taps spread over an area of about 15 ha. Today, Merck has expanded its sugaring operation to 4,800 taps, installed a brand new tubing system and constructed a new more centrally located sugarhouse. The investment in new equipment and infrastructure was significant and due in part to the attainment of the dual certificates from the FSC and the Northeast Organic Farming Association. Merck’s staff is committed to making the maple operation a showcase demonstration project. Unfortunately for Merck’s educational mission, maple certification has not yet generated a great deal of interest among local landowners, only calls from certification researchers.

When asked to compare the organic certification process with the FSC assessment process, Merck’s staff stated that the organic certification was smoother, less expensive and more rigorous than the forest certification audit, particularly with respect to issues that influence product processing and quality such as lead testing, packaging and batch-tracking. Staff also reported that “green certification (for syrup) has no value right now.” That is, consumers do not understand the relevance of FSC label on the syrup and perhaps have never considered that sugaring and sugarbushes could be unsustainable. Organic certification is considered to provide a marketing advantage, and staff cited statistics from an organic certifier which report that organically certified syrup can realize a premium of as much as \$0.15 per pound more than “conventional” syrup.

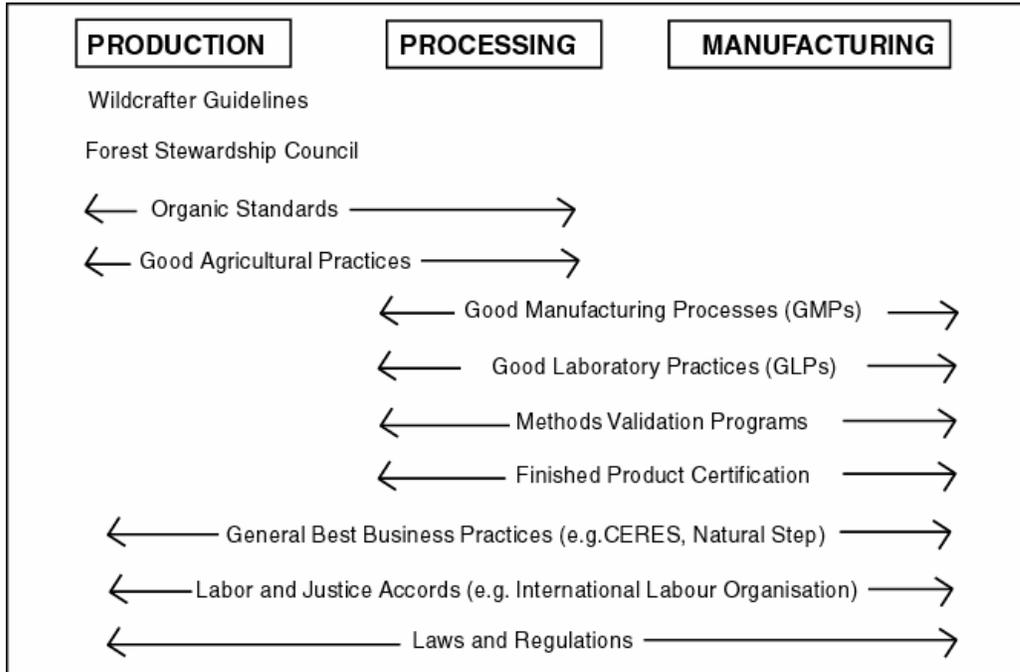
Merck reported that their annual audit costs for FSC endorsement (of both timber and non-timber operations) were \$1,700 while their organic certification (for farm and sugarbush) costs about \$350 per year. Organic certification charges a percentage of final product sales and the annual fee is expected to rise by \$100 or more next year. Comparing the cost of the two systems is difficult with limited information, because the forest acreage is larger than the farm acreage, an FSC assessment is more complex than an organic assessment, and the majority of SmartWood’s fees relate to the timber assessment and not the maple assessment. In general, the cost of the FSC label appears to be far greater than the cost of an organic label. Nevertheless, Merck is proud of its FSC endorsement, and touts its status as the producer of the “world’s first green certified maple syrup” on its website (www.merckforest.com) and on its syrup labels.

Increased collaboration and harmonization is needed between accreditation systems, the bodies that set standards for the standards-setters and “certify the certifiers”, to lower costs for producers and comprehensively address issues of environmental sustainability and equity. For example, organic and forest management accreditors (International Federation of Organic Agriculture Movements – IFOAM and FSC respectively) have very loose guidance documents for non-timber forest products and have allowed accredited

certification companies within their folds to create their own standards on a case-by-case basis. This is due, in part, to a lack of expertise within the accrediting bodies, as well as a tepid commitment to this category of products. However, the lack of an overarching structure for NTFPs within IFOAM and FSC has resulted in the creation of widely varying standards for NTFPs and inconsistent field applications (Pierce and Laird 2003).

To date, few certifiers have attempted to jointly implement standards in the field. An early exception is the case of chicle in Mexico, which was triple-certified (organic, fairtrade and FSC) (Shanley et al. 2002). Increasing demand for joint certification for sustainable forest management and organic production has prompted a FSC-certifier in Brazil, IMAFLORA, to apply to be an accredited certifier of the organic label (IFOAM). In spite of differences in the FSC and IFOAM programs, they realize that joint assessments can reduce the costs derived from two separate audits and can lead to merged guidelines. Development of guidelines and standards can have a range of applications beyond – and often complementary to – certification. These include various wildcrafter guidelines and education programs, individual company policies for sourcing raw materials, industry association codes, best practice guidance documents from international organizations, and national and international law and policy. For example, Good Agricultural Practices (GAP) and Good Manufacturing Practices (GMP) guidelines are important norms within the medicinal plant sector. International accords such as the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) and the Convention on Biological Diversity provide additional standards and checks for trade and management of specific species, particularly those from high biodiversity countries. What distinguishes each of these schemes is their differing focus along the supply chain; some initiatives emphasize production, while others evaluate processing and/or manufacturing (Figure 1). What is common to all of these NTFP-relevant initiatives, however, as well as to FSC, organic and fair trade certification systems, is their embryonic nature. Development of NTFP standards and certification is inchoate, applications of NTFP standards and certification have been few and groups are still learning how to address NTFPs as they proceed (Pierce and Laird 2002).

Figure 1: Major Focus of Standards along the Supply Chain



Source: Pierce, A. and S. Laird (2003).

ECOLOGICALLY RESPONSIBLE FOREST MANAGEMENT STANDARDS

A central focus of FSC certification is ecological sustainability and conservation, so we will address in somewhat more detail the development of ecological standards for NTFPs. Standards in the forestry sector blossomed in the past decade and the concept of certification as a tool to assure consumers that their wood purchases support ecologically sensitive forestry practices is now firmly established (see Pierce and Laird 2003). Recently, forest management certification programs have attempted to address non-timber forest product (NTFP) harvests in addition to timber certification, and organizations such as the Rainforest Alliance and the Soil Association have certified NTFPs including Brazil nuts, maple syrup and chicle (Mallet 2000; Shanley et al. 2002).

THE FOREST STEWARDSHIP COUNCIL AND NTFPS

Given the promise of timber certification, many in the forest conservation communities sought to incorporate non-timber forest products into the type of certification promoted by the FSC. In 1997, an NTFP Working Group produced a draft of Principle #11 to address this category of products, and after a number of years of little attention, NTFPs have once again been brought back into the FSC process through

the work of its accredited certifiers and a case study-based approach. In part, this was due to pressure from southern countries with high biodiversity and large forest dwelling populations, and certifiers working in these regions where NTFPs play an important role in rural livelihoods. The incorporation of NTFPs into the certification agenda also grew from widespread attention given to NTFPs by the conservation and development communities in the late 1980s and 1990s. NTFPs were seen as significant contributors to potentially sustainable local livelihoods and in some cases were promoted internationally to the 'green' consumer (e.g. Clay 1994; Plotkin and Famolare 1992). Most of these early efforts to market NTFPs to international consumers involved brokering and partnerships between northern NGOs and companies and local producers. Certification was viewed as another way to help leverage the buying power of informed consumers and to promote sustainable livelihoods in forest areas.

To date, NTFP certification by the FSC has been conducted on an *ad hoc* basis, following the particular leanings of certifiers, companies and producers. Of the eight accreditation bodies of the FSC, four have carried out NTFP certification: SmartWood, Soil Association, SGS Qualifor and SKAL. NTFPs that have been certified under the FSC umbrella are listed in Table 3.

A majority of the species listed in Table 3 is characterized by a long history of use and meet with comparatively few obstacles to certification. In some cases, centuries-old knowledge on the part of harvesters helped in the development of standards. In the case of chicle, the first NTFP certified under the FSC umbrella, the forest operation was already certified for timber, making NTFP certification relatively simple as it involved the addition of only one product that has been harvested for hundreds of years (Shanley et al. 2002). In the case of maple sugar, experienced harvesters revealed that rapid tap hole closure is one effective indicator of a tree's ability to sustain tapping. Tap hole closure is easy to observe in the field by forest managers and certification assessors and trees showing poor tap hole closure may indicate reduced vigor in trees, poor soils, poor tapping methods or other issues in need of further assessment. The 30 Brazilian medicinal plants certified to date at the Klabin plantation are largely cultivated or weedy herbaceous species and thus easily incorporated into a sustainable management strategy.

Table 3: FSC Certificates Issued for NTFP Harvesting, April 1999 – September 2003

Non-Timber Forest Product	Product Description	Scientific Name	Date of Certification	Country	Certifier
Chicle (latex)	Ingredient in chewing gum	<i>Manilkara zapota</i>	April 1999	México	SW
Maple syrup	Food product (sweet syrup)	<i>Acer saccharum</i>	Aug. 1999	USA	SW
Acai juice Palm hearts	Beverage & food product	<i>Euterpe oleracea</i>	Nov. 2000	Brazil	SW
Oak tree bark	Medicinal/tea	<i>Quercus robur</i>	July 2002	Denmark	SA
Onion leaves	Food	<i>Allium</i> sp.	2003	Denmark	SA
Herbal tea	Beverage (potential market as a medicinal too)	<i>Galium</i> sp <i>Crataegus</i> sp.	2003	Denmark	SA
30 species of plants	Ingredients in cosmetics	30 species	Oct. 2001	Brazil	SW
Brazil Nuts	Food product	<i>Bertholletia excelsa</i>	Oct. 2001	Peru	SW
Venison	Food product	<i>Cervus elaphus</i>	May 2002	Scotland	SGS
Conifer Greens and Christmas trees	Ornamental use	<i>Picea abies</i> <i>Pinus sylvestris</i>	May 2003	Lithuania	SW
Tree seeds	Nursery input	<i>Picea abies</i> <i>Pinus sylvestris</i>	June 2003	Lithuania	SW
Erva Mate	Beverage	<i>Ilex paraguariensis</i>	Sept. 2003	Brazil	SW
Copaiba Oil	Medicine and cosmetic	<i>Copaifera</i> sp.	Nov. 2003	Brazil	SW
Brazil Nut	Food product	<i>Bertholletia excelsa</i>	Feb. 2004	Brazil	SW
Resin Oil	Cosmetic	<i>Protium</i> sp.	Feb. 2004	Brazil	SW
Jarina seed	Seeds for handicrafts	Vegetable ivory	Feb. 2004	Brazil	SW

Table 4: Products for Which Evaluations Are Being Carried out

Non - Timber Forest Product	Product Description	Scientific Name	Starting Date of Evaluation	Country	Certifier
Honey	Food product, Sweetener	n/a	2003	Europe?	SKAL
Christmas trees	Holiday decoration	Evergreen species	2003	Europe	SKAL
Tree foliage	Decorative use	Variety of species	2003	Europe	SKAL
Christmas trees	Trade product out of cultures	<i>Picea abies, Abies alba, Abies nordmannia</i>	2003	Switzerland	SGS
Mushroom	Food product	N/A	2003	Switzerland	SGS
Wild meat	Food product	<i>Capreolo, Cervus et al.</i>	2003	Switzerland	SGS
Honey	Food product	<i>Forest bees</i>	2003	Switzerland	SGS
Açaí palm	Food Product	<i>Euterpe oleracea</i>	2003	Brazil	SW
Buriti	Fruit (food product) and oil for cosmetic product	<i>Mauritia flexuosa</i>	2004	Brazil	SW
Tucumã	Straw for handcrafts	<i>Astrocaryum tucuma</i>	2003	Brazil	SW
Rubber products	Bags and handcrafts	<i>Hevea brasiliensis</i>	2004	Brazil	SW

SPECIES-SPECIFIC GUIDELINES

The diversity in NTFP plant forms and parts used has meant that for high-volume, high-value NTFPs it is often more effective to develop species-specific guidelines. This is the case for maple syrup (see Box 1) and

Brazil nuts (Box 2). The primary reasons for this approach are mainly attributable to the unfamiliarity with NTFP management and assessment. By creating species-specific guidelines, certifiers have been able to justify their NTFP assessments to critics who argue against including NTFPs in accreditation programs. The process of creating species-specific guidelines is labor and capital intensive. It also runs contrary to the spirit of the FSC system, an accreditation system that takes pride in creating rules for forest management certification, not individual forest product certification. The few NTFP-species standards created to date have served as pilot studies and have been useful for pointing out the distinctions between NTFP certification and timber certification. In the future, plant class guidelines (e.g. for roots, leaves, fruits etc.) may be the most sensible approach to NTFP certification. There are hundreds of tree species in diverse tropic forests, yet certifiers do not justify the harvest rate for each timber species in a management plan. A broader approach to NTFP certification may thus be warranted. The case can be made that, with so few NTFPs likely to be certifiable internationally and such a wide diversity, species specific guidelines are essential. In the case of palm heart, for example, certain species of palm can be sustainably harvested while others cannot, necessitating completely different management systems. Certainly, questions about equity in the application of certification could arise if accreditors insist upon the creation of individual certification standards for NTFPs while timber continues to be assessed as an undifferentiated assortment of species.

Brazil nuts may potentially be managed along with timber, and guidelines to achieve this are currently being drafted in Brazil, Bolivia and Peru (SmartWood 2002; see Box 2). Hundreds of thousands of Amazonian residents derive an income from Brazil nuts, and their collection and marketing are responsible for the protection of millions of hectares of forests. Attempts at domesticating Brazil nuts have not been effective, thus forests remain the only viable commercial source of nuts. The organic and environmentally friendly attributes of Brazil nuts may make the product readily certifiable for certain markets. However the social aspects of the industry require close attention (Ortiz 2002).

Box 2 – Developing Guidelines for Brazil Nuts in Bolivia

By P. Pacheco, Center for International Forestry Research, Bolivia

Over a period of 3 years, owners of processing plants, experts, representatives of collectors and small farmers organizations, and others worked on developing guidelines for Brazil nuts led by the Bolivian Council for Voluntary Forest Certification (CFV) and with strong involvement of researchers in the Program of Forest Management in the Bolivian Amazon (PROMAB). In 2001, after eight different versions of standards were reviewed and revised, national guidelines for certification of Brazil nuts were approved by the Forest Stewardship Council. The CFV entity, which was established with some financial support from BOLFOR, assumed the task of approving guidelines to certify timber and non-timber forest products, including Brazil nuts. Stakeholders from the Bolivian Amazon involved in Brazil nut collection thought on one hand that they might gain financial benefits from certification, and on the other hand that certification might stimulate *barraqueros* to comply with social and ecological standards. The expectations of local actors involved in Brazil nut certification were too high with respect to what it could offer. Stakeholders now realize that the process to attain certification was difficult and that even more work will be needed for the imagined benefits to become a reality.

CERTIFYING THE HARVESTER

Most certification systems for NTFPs are area-based programs; they assess forest management units (see Box 3 Good Woods in Kenya). Many gatherers of NTFPs are not landowners, however. Accreditation groups like the FSC have not yet considered more flexible, cost-effective certification systems for gatherers, perhaps modeled after existing wildcrafter guidelines. Such a certification system could focus more on the training and “professionalization” of environmentally responsible gatherers. Issues of tenure and access, management planning and monitoring would be challenging to incorporate into a rigorous certification program for gatherers, but may be possible. Gatherer certification might be a useful first step in instilling the ethics of sound NTFP harvest and provide a valuable complement to area-based NTFP certification programs, much as forester certification is complementary to the implementation of certifiable forest management.

Box 3 – Good Woods in Kenya

By A. Cunningham, People and Plants International

The wood carving industry in Kenya has provided remarkable opportunities to allow poor people to enter the cash economy, but ecological limits to exploitation pose environmental consequences. A major challenge to the Kenyan woodcarving trade is serial exploitation of one indigenous hardwood species after another. Over 50,000 trees are currently cut per year for Kenyan carvings and depletion of ebony (*Dalbergia melanoxylon*) and muhugu “mahogany” (*Brachylaena huillensis*) for woodcarving has spread from Kenya to northern Tanzania in response to market demand (Choge 2002). By the 1990s, 60,000 Kenyan woodcarvers produced commercial carvings, primarily for export, providing household income to an estimated 300,000 dependents (Obunga 1995). On the assumption that market-led demands for ‘Good wood’ carvings would change wood selection practices, the WWF/UNESCO and the People and Plants Initiative (PPI) supported the process of certification. Studies by Kenyan researchers on the economic, social and ecological aspects of the Kenyan woodcarving industry indicated that fast-growing on-farm cultivated species such as neem (*Azadirachta indica*) and *Jacaranda mimosifolia* could offer a viable alternative to wild harvest of slow-growing indigenous species whose population was in drastic decline due to overexploitation to support the wood carving industry.

An assessment of the opportunities and benefits potentially arising from certification offered positive results. First, there had been high international demand for crafts produced in ways that improve local livelihoods while reducing pressure on forests. Second, the Kenyan case was conceived as an important global precedent for sustainable woodcarving and certification. Third, “conservation through cultivation” while “atypical” to the FSC, had been a common strategy characterizing the medicinal plants trade and fiber production for commercial basketry production (Cunningham 1993; Cunningham and Terry 1995). There was no doubt that promoting the substitution of indigenous hardwoods with neem or jacaranda could have major conservation benefits for remaining coastal forests – yet these off-site conservation benefits do not fit into the FSC framework. The problem is that the FSC certification is “site-based” focusing on forest stewardship whereas the ‘Good Wood’ model is “species-based” with conservation benefits derived from neem agroforestry production in the landscape matrix surrounding the last remaining East African coastal forests. NTFPs collected from wide geographic ranges by independent gatherers with no clear title to lands – for example, mushrooms from federal lands in the US – present complexities which the FSC system has yet to address because it is an area-based system and not a product or harvest-based system.

COMPARING TIMBER AND NTFP CERTIFICATION

Timber certification is complex and politically-charged but development of NTFP standards and certification systems has proven to be even more challenging to implement than timber certification (see Pierce 1999; Shanley et al. 2002). This is due to a range of factors, including:

- the wide array of products encompassed by the term “NTFP”;
- the complexity of chain-of-custody systems for NTFPs, which often involves a number of middlemen
- the diverse plant forms and plant parts used (e.g., exudates, vegetative material, reproductive propagules) compared with only trees and stem;
- the wide range of NTFP end uses (e.g. food, personal care products, botanical medicines, handicrafts etc., compared with the timber and pulp market);
- the diversity of applicable certification schemes for NTFPs (e.g., ecological, organic, fair trade, quality control) which will likely necessitate collaboration across schemes to succeed (Jones, McLain and Weigand 2002; Pierce and Laird 2003).

CONTRASTING NTFP AND TIMBER ASSESSMENTS - SOCIOECONOMIC AND ECOLOGICAL ISSUES

Consumer demand for certified timber is more established than demand for non-timber forest products, a diverse and complex group of products that are poorly understood by consumers. For example, while many consumers are aware of sustainability issues surrounding timber, few consumers are aware that many of the medicinal barks, resins and edible nuts sold in international markets are harvested unsustainably, with little benefit to local communities. In addition, development of certification guidelines for timber is relatively straightforward when compared to the development of NTFP guidelines. Design of effective certification guidelines depends upon detailed, species-specific knowledge regarding the density, distribution, regeneration, harvesting and management practices for particular species in particular areas, as well as the plant part being harvested. However, little information of this type is documented, as worldwide forest management has largely been confined to traditional timber extraction, neglecting to recognize other aspects of it. Evaluating a forest for NTFP production is inherently different than for timber production and a new generation of foresters and assessors will be needed. Ideally such personnel should be competent in NTFP management, knowledge of the target species managed, social sciences and various certification systems (organic, Fairtrade, International Organization for Standardization ISO). Training of forest managers and certifiers in the basics of NTFP ecology, use and market value can be an important first step in moving forest management practices towards a more holistic approach (see Box 4).

Table 3: NTFPs and Timber's Relative Potential for Certification

Key issues	Timber	Non-Timber Forest Products
Ecological	<ul style="list-style-type: none"> - existing data sufficient to develop management plans - predictable production/yield - moderately variable quality 	<ul style="list-style-type: none"> - lack of ecological data to design management plans - highly irregular and unpredictable production - highly variable quality
Economic	<ul style="list-style-type: none"> - moderate to high economic return - stable to growing national and international markets - existing demand for certified wood - international markets are growing - in some cases, label is associated with a premium price - certification affordable to many industries 	<ul style="list-style-type: none"> - low economic return - local markets and direct use predominate - unpredictable, niche markets - international NTFP markets subject to 'boom-bust' and substitution - label no guarantee of premium price - certification unaffordable
Social	<ul style="list-style-type: none"> - moderately complex - consumer awareness and demand - civil society initiative - local incentive in temperate forests and some cases in the tropics, triggered by consumer demand - industries possess sufficient organizational capacity, information and power -tenure less of an issue for timber extraction than non-timber harvest 	<ul style="list-style-type: none"> - exceedingly complex - no consumer demand, confusion over labeling of NTFPs - top-down initiative - little to no local incentive for NTFP certification - low-intensity producers lack organizational capacity, information, power -many gatherers have insecure tenure or access to NTFP resources -poor wages/prices for goods and difficult working conditions
Technical issues involved in assessments	<ul style="list-style-type: none"> - straightforward chain of custody - well-established guidelines - clear procedures - industries operate on a more rapid time frame, often have sufficient capacity - ecological standards widely accepted (FSC, PEFC, SFI) 	<ul style="list-style-type: none"> - complicated, lengthy chain of custody, incipient ad hoc guidelines - uncertain procedures - accelerated time frame is often too rapid to build adequate capacity for harvesters - multiple standards apply (i.e. organic, fair trade, ecological) -quality control issues are paramount for edible and medicinal plants, add an extra layer of complexity

Box 4 – Reforming Forestry Training to Include NTFPs: A Case in Brazil

By Andre Dias, CENAFLOR and Carmen Garcia, CIFOR, Brazil

*The Fundação Florestal Tropical (FFT) based in Belém, Brazil, has demonstrated innovative training in forestry, integrating a component of the market value and ecology of non-timber forest products into their forestry curriculum. Collaborating with the Brazilian certification agency, Imaflores and CIFOR, the Center for International Forestry Research, they have developed a module that trains foresters to inventory both timber and non-timber forest products and to consider local values of forests for communities (Shanley and Medina 2005). Similar training of rural communities along Brazilian logging frontiers is being promoted as part of adult literacy training, supported by the National Institute of Land Reform (INCRA) and the federal rural education program *Pronera*. Such training is integral to creating a new generation of foresters, certification assessors and rural leaders who can effectively evaluate which species to extract and which to retain.*

TECHNICAL ISSUES

An NTFP certification assessment follows the same general process, and addresses the same general subject areas, as a timber assessment. However, the focus of an NTFP assessment may differ from a timber assessment, particularly with regard to social issues and management planning. The timing for certification audits may also be more critical for NTFPs than for timber as fruits, some exudates, fungi and herbs have particular harvesting seasons. Areas harvested for timber can be easily monitored post-harvest by looking at basal area, evaluating regeneration, assessing residual stand damage, inspecting road and skid-trail construction and viewing the size and number of stumps left behind. By contrast, assessors visiting areas managed for mushrooms or forest herbs may not get an accurate picture of the resource, its abundance, worker conditions and the harvesting practices employed unless the assessment visit occurs during or shortly after harvest.

Increasing the attention given to non-timber forest products can heighten their visibility to forest product certifiers who might otherwise focus solely upon timber. Heightened awareness of the role of NTFPs in forest use and management could encourage timber certifiers to press for the retention of species more valuable for their non-wood products than for their timber. Optimally, certifiers will recommend that NTFPs are factored into harvest planning and felling operations, silvicultural treatments and management plans.

INTEGRATING NTFPS INTO TIMBER CERTIFICATION

NTFPs need to be more effectively integrated within timber certification efforts which to date have not adequately addressed the interrelationship between these types of forest products. A species-specific appendix for certification of NTFPs from forest areas where timber is the primary product is one approach. A more integrated approach to addressing NTFPs – many with important local uses that are not always recognized – is also required; this would include accounting for NTFPs in management plans and harvesting activities.

Integrated plans would identify species with high subsistence, market and cultural value – species that may be more valuable for their public health or cultural importance than timber (see Box 5).

The Brazilian NGO Imaflora (Institute for Agricultural and Forestry Management) observes that after attaining timber certification, communities in Brazil may seek NTFP certification because the cost to include additional species is much lower and the process less complex to add NTFPs to an operation already certified for timber. In the Southern Atlantic Forest region of Brazil, many environment groups support NTFP certification over timber certification because they do not want to see any further logging in a region which has experienced nearly 95% loss of its original forest cover. In addition, forest communities often have a strong extractivist tradition where NTFPs play a critical role in the portfolio of productive activities. After receiving certification for timber for example, the Brazilian Associação Seringueira Porto Dias, sought certification for copaiba oil production. To operationalize NTFP assessments where timber is already certified, some certifiers simply attach NTFP generic guidelines as an addendum to their timber standards.

Of the 20 (formal, donor-supported) community forestry management initiatives in Brazil, several encompass both timber and non-timber forest products. In the case of Rhondonia's Rubber Tappers' Association (OSR), motivation to develop a management plan may have been driven more by a desire to protect the rubber tree forests to ensure the collection of rubber latex than by income generation. Communities have become involved in part due to a belief that certification will distinguish their enterprises from those of large companies that operate illegally and in a predatory manner (Azevedo and Freitas 2003).

Box 5 – Certified Timber or Threatened Medicinal?

By M. Schulze (UF) and P. Shanley (CIFOR)

Ipê roxo (*Tabebuia impetiginosa*) and Jatobá (*Hymenaea courbaril*) are valuable timber species; ipe roxo is currently marketed in the US as a certified, “green alternative” to mahogany. However, ipe roxo is one of those Amazonian species that is most difficult to manage for sustainable production. First, seedlings are found in very low densities in the forest and second, the rate of growth of the species is relatively slow, one plant may take 100 years to become an adult. Typical extraction removes the majority of adults, leaving too few seed producing trees (Schulze et al. 2005; Schulze 2005). Both species are removed in a predatory manner, regenerating poorly in exploited forests.

The grey bark and the red, watery exudate of Jatoba are used for respiratory problems, as a tonic after chronic illness such as malaria, for flu, bronchitis, worms and prostate cancer. One of the top ten selling medicinal plants in eastern Amazonia, medicinal use of the bark of ipe roxo is widespread among all sectors of society, serving for anemia, gastritis, diabetes and cancer (Shanley and Luz 2003). Besides a high level of subsistence and market sales within the region, ipe bark is exported as a phytotherapeutic to Europe and the United States. Before expanded commercialization of ipe roxo and jatoba as “certified” timber, it is critical to weigh the costs and benefits to public health care in threatening the future populations of these species (Shanley and Medina 2005).

THE IMPACT OF CERTIFICATION ON COMMUNITY-INDUSTRY RELATIONS

Timber certification should generally attempt to minimize the negative impact of timber harvest on locally-important NTFPs, where they are known. However, timber certification can also have unintended consequences on local populations' use of NTFPs, including access to forest resources. As part of ensuring sustainability, certification sometimes requires lands to be placed off limits to local groups; this is often interpreted to include the harvest of NTFPs. A case in Limpopo Province in South Africa demonstrates the negative impact of timber certification on materials used by local women for broom-making (see Box 6). This is not to imply that certification trumps landowner rights. Rather, the landowner has an obligation to act as a good neighbor and recognize traditional gathering rights unless such activities can be clearly shown to be having an adverse ecological impact.

Box 6 – Impact of Timber Certification on Resource Access in South Africa

By S. Shackleton, Rhodes University, South Africa

In the Limpopo Province of South Africa, broom-making of twig and grass provides an important source of income for several hundred poor rural women living in the district of Bushbuckridge. The natural distribution of the two broom species *Athrixia phylicoides* and *Testuca costata* coincide with areas suitable for pine afforestation for the pulp and paper industry. Since access to private farmland is at the discretion of individual farmers, several of the sites where producers have harvested the raw material are wild lands forming part of company-owned estates. Recent interviews revealed that 81% of harvesters found obtaining access to raw material one of their major constraints. Many complained that they no longer have access to areas where they had previously collected or that they feared being arrested.

Interviews conducted with officials from the two forestry companies operating in the area, Komatiland Forests and Global Forest Products, presented different interpretations of the requirements for certification with the Forest Stewardship Council (FSC). Global Forest Products (GFP) was not opposed to providing access to natural resource products on their lands and indeed stated that the conditions for certification required this in terms of the social responsibility obligations. This is encapsulated in their Social Responsibility Self-Assessment program which states that “ongoing attention will be given to encourage employees and other stakeholders to participate in Global Forest Products multiple resource utilization programs with a view to promoting openness, access to resources and opportunities...” However, they tend to give priority to their own employees, dependents of their employees and immediate neighbors and so broom producers from Bushbuckridge are often turned away. The entry permit is free, but is rigorously policed and enforced. People found on GFP land without a permit are removed or requested to obtain a permit unless they are wildlife poachers, in which case they are arrested and handed over to the police.

Komatiland Forests (SAFCOL – or South African Forestry Company) did not appear to have any policies in place specifically relating to the harvesting of broom raw material, and in general authorization to harvest any products was limited. The previous environmental manager for the company mentioned that access to a variety of natural resources had been allowed via a permit system (established under their Environmental Management System), but difficulties controlling this and constant abuse of permits by harvesters (harvesting for longer or taking more than the permit allowed) resulted in them closing all access in early 2002. Adding to this decision was the fact that SAFCOL land was also being used to illegally gain entry to neighboring parkland. The misuse of entry permits and the company's inability to accurately monitor off-take was said to be compromising their FSC certification. The company understood that while certification supports opportunities for natural resource use by local people, this cannot be at the expense of the environment. New models for access were, however, being considered based on more formal contracts with fewer people.

Integrated management of forests for timber and NTFPs is increasingly seen as economically as well as socially desirable. In Brazil the export timber producers Precious Woods and Mil Madeireira are developing partnerships to manage non-timber forest products (Freitas 2003b) (see Box 7). Certification, by providing premiums, market access, and marketing and public relations benefits for companies, can help to make this more the case. In addition, the costs of certifying NTFPs will likely be relatively minor for companies undergoing timber certification, and the process might raise awareness within industry of the pressing livelihood concerns of forest-reliant communities and create innovative mechanisms to ensure mutual benefits.

How certification will impact equity and access to forest resources under different conditions must be fully considered. Instead of leading to increased benefits for communities, interest from industries in certification of NTFPs could lead to private sector appropriation of forest resources that were once the domain of the rural poor (Dove 1993). If not carefully monitored, certification could exclude collectors from independent harvesting and marketing initiatives. Nascent private sector-community initiatives deserve close attention and input from multiple stakeholders. The Forest Stewardship Council's Social Working Group in Brazil has held numerous workshops to evaluate the obstacles and opportunities inherent in certification (see Table 4).

Table 4: Relations between Communities and Industries: Obstacles and Recommendations

Obstacles	Recommendations
Communities lack information regarding their rights in relation to certified industries	<ul style="list-style-type: none"> - Establish obligatory criteria for communities before the public hearing - After forest certification , clarification of industry obligations
Social movement is too fragile to adequately articulate the concerns of forest-reliant communities	<ul style="list-style-type: none"> - Create commissions of NGOs that accompany the process of forest certification mobilizing communities with debates - Create mechanisms of monitoring during the process of certification
Lack of community participation in the public hearings on certification	<ul style="list-style-type: none"> - Create a data base of key entities at the local, state and national levels to ensure broad participation of the public audience in the full process of certification
Social indicators fail to measure all of the social impacts on communities	<ul style="list-style-type: none"> - Refine the social indicators - Review criteria for implementation, monitoring and accountability, including the social costs and benefits to the communities neighboring the certified area
Some non-certified industries feign certification as propaganda and leverage in negotiations	<ul style="list-style-type: none"> - Certifiers need to communicate to surrounding communities if and when a company is certified
Professionals in certified industries have little ability to build relationships with forest-based communities	<ul style="list-style-type: none"> - Greater investments need to be made in developing relationships and communication between industries and communities.

Source: *Certificação Florestal e Movimentos Sociais na Amazonia, Relatório de Seminario FASE, GTNA, IMAZON.*

Box 7 – Integrated Timber and NTFP Management: The Case of Mil Madeireira, Brazil

In Brazil, the FSC working group on social issues has closely monitored the impacts of timber certification on communities; attention is now turning to NTFPs as a number of timber industries have shown interest in expanding their product line to include NTFPs. For example, the timber company *Mil Madeireira* has a list of NTFP species for which they plan to assess the economic potential of leaving these species or some individuals standing for their non-timber use (2004 Almeida, personal comm.). In partnership with an oil industry, Mil Madeireira is using the branches of two species of tree, locally called *loro rosa* and *preciosa*, for the extraction of essential oils. Wood from the opening of logging roads is also being used as firewood. This oil industry is developing a management plan for the collection of a wide range of fruits, oils, wood and bark. With inventories and maps of resources in hand, logging companies could potentially make useful partners for cosmetic and essential oil companies.

Mil Madeireira is evaluating potential financial return, positing that the cosmetic companies should enter with funds to support the necessary research and training and to help to determine how to integrate NTFP extraction in timber operations. Mil Madeireira views this as an opportunity to expand their portfolio of activities, while increasing their economic return and providing alternative sources of income to communities within and around their forest areas. In partnership with the cosmetic company *Natura*, the portfolio of potential NTFP species has grown to include copaiba, andiroba, amapa, preciosa, louro rosa, breu branco, cumaru seeds, brazil nuts, sapuaia and jatoba.

ACCESSIBILITY AND APPLICABILITY OF NTFP CERTIFICATION

A common experience in NTFP certification is the difficulty of marrying a system driven by international scientific and bureaucratic norms with rural community practices and cultures. Because certification guidelines are a concept imposed by developed countries, approaches are often top-down with inadequate community incentives or participation in the setting of standards. In addition to unwieldy administrative burdens, certification poses financial costs that few communities can afford. To date, the most successful NTFP certifications have either been subsidized by donors or by sales of certified timber (see Box 1). In the area of timber certification, a range of steps have been taken to simplify the certification process. These include more flexible rules, less frequent audits and fewer requirements in cases with low environmental risk (Higman and Nussbaum 2002; Weban-Smith et al. 2000; EFTRN 1999). Communities need time to adequately understand certification and to weigh the associated costs and benefits. Following is a list of some of the major challenges facing NTFP certification and a brief discussion of FSC's efforts to address these issues for timber certification. Next, opportunities for rural communities offered by group certification are described and successful examples of NTFP certification in Brazil are presented.

CHALLENGES

- *Inaccessibility of certification to small producers* – Institutional infrastructure and built-in costs are excessive for most small producers and forest communities. Small producers rarely have the funds to cover the direct (e.g., assessment fees) and indirect (e.g., additional investments in management and marketing) costs of certification and annual reevaluations (Robinson 2000).
- *Complex chain of custody* – NTFPs are composed of an enormous variety of products scattered over a wide geographic range with extremely complex marketing networks. Tracing products from source to sale presents substantial difficulties.
- *Lack of capacity to address the topic in the forestry sector* – New experience and species-specific knowledge will be required to undertake a thorough evaluation of candidate NTFP operations. Forest operations and certifying agencies will need the skills of trained individuals familiar with NTFP management and ecology.
- *Philosophical divide between traditional management systems and formalized management* – Highly sophisticated forms of local forest management systems exist; however, to become certified these require formal, rigid and unfamiliar documentation.
- *Fragmented systems for certification* – Competing and conflicting systems of certification (fair trade, ecological, organic) have not been adequately integrated and tend to address distinct segments of the market.
- *NTFP operations receive little or no assistance post-certification* – Certification carries inherent administrative and field-based responsibilities. Adequate monitoring of the resource base, updating management plans, reporting and administrative procedures can create a heavy load for unprepared communities.

THE FSC SLIMF INITIATIVE

FSC's SLIMFs initiative – 'Increasing access to small and low intensity managed forests' – was developed to extend access to certification to community-managed forests (see Box 7). The SLIMFs initiative is actively tackling some of the central problems of certification for NTFP harvesters. The initiative is working to streamline procedures, reduce both direct and indirect costs of certification and recommend a more practical evaluation process for small producers and NTFP harvesters. The initiative recommends that requirements for monitoring and assessment be modified to include shorter, more concise public summaries, a checklist for forest management evaluations, automatic renewal of five-year certificate if annual audits are satisfactory, and fewer audits and peer reviews. Based on the pilot findings, certification bodies would be given guidelines from FSC that regulate implementation of the streamlined auditing approach for SLIMF operations and that describe eligibility criteria to be considered as SLIMFs.

The Brazilian NGO Imaflora (Institute for Agricultural and Forestry Management) reports that before the implementation of SLIMFs, the least costly evaluation for a community seeking joint timber and non-timber certification was approximately US\$ 6,700. After operationalizing SLIMFs, a simple evaluation can cost US\$

1,500. The price differential is due to three factors: a smaller team of auditors (1-2), less time in the field (1-2 days) and a simplified report (1-2 days to complete). Communities requesting certification of NTFPs qualify for SLIMFs. If a community is seeking certification of both timber and NTFPs, the scale (in Brazil <1000 ha) and the intensity of extraction are taken into consideration.

Despite advances in the area of accessibility in FSC timber certification, significant obstacles remain for NTFP certification, as demonstrated by the case of wood carving in Kenya (see Box 8). Management plans, monitoring, unfamiliarity with national laws, uncertain knowledge of market opportunities and other factors can combine to make certification inaccessible to small producers (Markopoulos and Thornber 2000).

Box 8 – Flexible Standards Needed: The Case of Kenyan Woodcarvers

By A. Cunningham and Plants International and S. Schmitt, WWF-UK

Although we considered developing a simple eco-label (2nd party certification) for carved “Good Woods”, we decided to aim for an FSC label for Kenyan “Good Wood” carvings for three reasons. First, we were reluctant to contribute to the proliferation of labels that has posed a problem in “certification” of wood products. Second, we hoped to contribute to changes within the FSC that would result in greater sensitivity for small producers. Third, aiming high for the FSC label would offer a label with widespread brand recognition and ultimately more benefit for carvers in Kenya – and in the longer term, further afield.

The delays, complexities and constraints to achieve an FSC label for carvings meant that no clear ethical choice for woodcarving buyers existed; carvers still had insufficient incentive to switch to ‘Good Woods’ and continued to carve indigenous hardwoods from globally threatened forests. Inadequate enforcement of the ban on cutting hardwoods and illegal trade from Tanzania contributed to the fact that hardwoods were still available cheaply. Nearly 10 years after work on ‘Good Wood’ carvings began, FSC certification (under the new SLIMF system) was achieved in January 2005. Conservation and certification expertise, however, was not enough. It was crucial to work in partnership with organizations such as Oxfam and their partner Kwetu and the Kenya Gatsby Trust (KGT) who brought crucial expertise in farmers’ organization and training and business skill and quality assurance training, respectively. With their help a stakeholder-owned company, Coastal Tree Products, has been set up to market and trade certified carvings and to manage the certification scheme and pay for the certification, marketing and design costs.

It will remain to be seen if FSC certification will be sustained and the farmers growing neem and the carvers remain committed. Despite the relaxation of certain requirements under SLIMF, the reporting and monitoring system required under FSC may still prove impractical for local farmers and carvers to maintain. On a positive note, trying to achieve carving certification has had some non-monetary benefits. First, the neem management plan was acceptable to the Forest Department without excessive bureaucratic requirements. Second, the carving certification experience has led to the formation of a FSC National Steering Committee in Kenya. Third, the certification attempt has highlighted the lack of business skills and quality assurance systems of co-operatives, leading to the partnership with KGT. Fourth, it has stimulated engagement at forestry policy level, such as proper enforcement of logging ban and recognition that carving adds higher value and more jobs per cubic meter of wood than any other wood use in Kenya. Finally, it has encouraged carving certification efforts in other woodcarving countries, such as India.

GROUP CERTIFICATION: IMPROVING THE ACCESSIBILITY OF CERTIFICATION FOR RURAL COMMUNITIES

Communities can most effectively participate in marketing of forest products, including certification, when they are organized into groups. Group certification signifies the joining of individual producers into groups such as cooperatives. By joining together ideas, products and skills, small holders can gain greater power when negotiating prices and conditions of sale. They can jointly set up better storage facilities, transportation infrastructure and information networks to monitor prices and to gauge opportunities and risks. Sharing responsibility among producers, small holders can better navigate the arduous requirements involved in certification such as formal management plans, monitoring the resource base and marketing. The case of PhytoTrade's producers association in Namibia demonstrates how markets can be effectively captured by small producers when they are well organized, identify stable markets and, using local knowledge, determine sustainable off-take (see Box 9).

Box 9 – Social Benefits of Certification

By C. Lombard, D. Cole and P. du Plessis, PhytoTrade, South Africa

An example of organic NTFP certification that benefited from investment in improved social organization is that of PhytoTrade (formerly SANProta/CRIAA) in Namibia where producers are part of an association that negotiates with European buyers. Well-substantiated clinical evidence of efficacy, an increase in people suffering from arthritis and increased marketing initiatives by product manufacturers triggered a dramatic increase in sales of devil's claw (*Harpagophytum procumbens*). In 1998/9 export sales from Namibia reached over 600 tons, involving between 5,000 and 10,000 Namibian harvesters in tuber extraction. To combat the problem of unsustainable harvest, donors funded a service-NGO to organize groups of registered harvesters. Harvesters exchanged knowledge about sustainable resource use and voluntarily adopted sustainable resource management practices that they helped to formulate. An exporter signed a contract to purchase all of the Devil's claw produced by the project, paid the harvesters immediately upon delivery and gained access to a reliable premium product (Lombard et al. unpublished).

Conservation impacts of the devil's claw project include recognition of traditional knowledge about sustainable harvesting and extending "best practices" to harvesters who were too young or who did not come from a traditional harvesting background. Conservation practices should help slow genetic erosion, thus allowing for increased diversity that can later be tested in screening programs for desirable traits. Financial success is less certain. Namibia currently captures at most 1% of the N\$10 million trade in devil's claw extracts and the market sector where devil's claw is currently sold does not place a high premium on organic standards. NGOs supporting the harvesters have concluded that unless consumers demonstrate a firm commitment to certification, manufacturers can afford to ignore certified producers.

A case study from Oaxaca, Mexico identifies group certification as a potentially critical component to make certification locally applicable. Researchers working with local wood carving communities predict that without it, "certification will have little potential to promote sustainable harvest for wood carvings and other crafts where groups of artisans rely on intermediates as harvesters" (see Box 10). However, group certification poses challenges as it requires strong organizational and administrative capacity and a bringing together of groups with various institutional arrangements and possibly competing aims (Stewart et al. 2003).

While the “group certification” model is permitting the inclusion of dispersed smallholders and their products, the process is still young and undergoing revision (Pierce et al. 2002).

Box 10 – Potential of Group Certification for Woodcarvers in Mexico

By S. Purata, People and Plants International, Mexico

According to researchers working with communities of artisans and collectors in Mexico, certification of the *Bursera* wood that is used to create colorful, widely sold wooden figures could foster more positive social and economic trends in the Oaxacan woodcarving market. Extractors collect wood, sell it to intermediaries, who in turn sell it to artisans. Therefore, the standard system of forest certification is unlikely to work because the buyers of the wood are village-based artisans and unlikely to pay a premium for certified wood. A certification scheme applicable to a group of carvers whose work can be certified through chain of custody as coming from a sustainable source could command a price premium. This premium could more than make up for the extra cost of certified wood.

ENABLING CONDITIONS

The difficult work and many steps required to attain sustainable harvest of non-timber forest products are often given less attention than the end goal of certification itself. Lack of adequate attention to the many steps and lack of know-how which underlie sustainable harvest can result in a failure not only of certification, but of community forestry conservation initiatives more broadly. The need for less glamorous but workable initiatives has been well captured by Kammen and Dove (1997) in the phrase ‘the value of mundane science’. Conducting long-term forest inventories to determine production/yield, studying regeneration, evaluating species resilience to harvest, assessing realistic market opportunities and strengthening of community organization are necessary prerequisites for sustainable management and marketing of NTFPs. Farmers and forest inhabitants demonstrate resourceful means to collect and deliver market information, assess ecological status, refine management practices and move products towards emerging markets. As the bar held by donors and NGOs rises higher to include health, safety and environmental certification, however, few communities may possess adequate technical experience to tackle the additional workload and arduous administrative requirements that attaining and/or maintaining a label entails.

Partners working with the NTFP-Exchange Programme for South and Southeast Asia (NTFP-EP) have learned that achieving sustainable supply and successful marketing is not a short-term commitment. Working for over a decade, the network has promoted farmer-to-farmer exchanges, facilitating the sharing of appropriate technologies among remote communities. Communities working with the NTFP-EP network on sustainable harvest of rattan cannot yet meet the requirements to attain international forestry certification. While they struggle to attain the necessary foundation, they are gaining an array of other skills and developing other valuable products, such as community monitoring systems, producer harvesting guidelines and forest products for which local labels and locally developed sustainability standards are adequate (see Box 20).

Box 11 – Rattan: Efforts at Group Management, Marketing and Certification

By J. de Beer, Southeast Asian NTFP Exchange Programme, Philippines

In order to encourage the revival and strengthening of sound traditional forest management practices, a group of Benuaq rattan farmers in the Kedang Pahu watershed area got together and established the Rattan Farmers and Craftmakers Association. The association aims to improve the bargaining position of rattan farmers by better marketing and improvement in the quality of raw material. Due to market demand and potential links with industries seeking sustainable sourcing, members of the association reached consensus to strictly define and adhere to sustainable management of rattan. To this end, the Farmers and Craftmakers Association is in the process of developing a system of self-monitoring for the rattan harvest. In the past, Benuaq rattan farmers made rough estimates of mature rattan stocks available in their groves. On the basis of these estimates and demand/price developments, he/she would make decisions on cutting volume of particular species and/or expansion of groves. ‘Self-monitoring’ is seen as a more systematic and precise means to determine potential harvest and sustainable extraction rates. It is also viewed as a cost-effective instrument that relies on the skills of dedicated village-based forest managers.

Annually a resource inventory will be carried out by individual association members to monitor changes in the resource base. Using a standardized format, these changes are reported back to the association. Next, the aggregated information is used to set annual off-take in terms of volume, size and species. On the basis of the harvesting plan, the association’s trading arm can then enter into negotiations with buyers. With help from both community experts in rattan and scientists who study rattan, the community association developed a field manual which offers measurement parameters and simple guidelines to carry out the inventories. The outline of the manual was designed during a participatory workshop with core members. While the Farmers and Craftmakers Association is in the process of fine-tuning methods of measuring stocks, an intensive campaign is underway to share the principles with a wider group of rattan farmers. During the process of disseminating the manual, the team learned that it is not sufficient to merely distribute the manual. Oral elaboration by farmers who either attended the initial workshop or who were involved in field-testing the manual appears crucial.

The association’s trade arm is currently exploring collaboration with a leading European furniture retail company. The company aims at procuring raw materials from sustainable sources. To be able to monitor and influence primary producers (rattan farmers) the company favors short chains of custody between the source of the raw material and supplying manufacturers. Short chain of custody is also favorable for certification, as tracking and tracing of raw materials is more effectively accomplished. This matches the interest of the rattan farmers to become more knowledgeable about the market and its requirements. The Farmers and Craftmakers Association is currently engaged in discussions of rattan labeling with furniture retailers as well as certifiers. A senior officer in charge of raw material sourcing who visited to evaluate the rattan groves and their management was very enthusiastic concluding, “This is a model situation... worldwide we need more of these”. For companies that are under fire from environmentally conscious consumers, such a community-based initiative is welcome relief and a valuable potential source of not only raw material but also credibility.

Efforts are also underway to improve product quality. One of the key issues is to find alternatives for the diesel oil and sulfur currently used for preserving the raw material. In overseas markets there is growing concern about potentially harmful residues which can be found in the end product. This concern is likely to grow when products get explicitly marketed as “green & clean”.

A COUNTRY CASE STUDY: NTFP CERTIFICATION IN BRAZIL

SmartWood's, national affiliate, the Brazilian NGO Imaflora (Institute for Agricultural and Forestry Management and Certification) was the first national certifying body to take NTFP generic guidelines developed by international experts and to revise these to meet local geographical and ecological realities. Working with an interdisciplinary team, they revised the NTFP generic guidelines to be less timber oriented, to meet local realities and to serve both industrial and small producer needs. Imaflora also invested time in informing forest communities and the private sector about the potential of certification. At a workshop entitled "NTFPs and Cosmetic and Phytotherapeutic Industries" industry leaders and harvesters discussed raw material needs, marketing strategies, access issues and the opportunities and obstacles that they face. This August 2002 workshop in the small Amazonian town of Alter do Chão is cited by Imaflora as a key event in raising the awareness of both producers and industries about the market and certification potential for NTFPs (Souza 2004, pers. communication).

Communities as a certifiable group and NTFPs as a class of products both present challenges to the process of certification. Because industries have more resources to devote to certification and greater understanding of the complex framework of standards it is less difficult for them to navigate through the complex framework of standards (Table 5). In 2000, the Brazilian pulp and paper company Klabin, which was already certified for timber, became certified for 40 species of medicinal plants (Table 6). Two other industries became certified for the herb, *Ilex paraguariensis* used in a widely consumed tea. Of the 42 non-timber forest plant products certified by FSC, Imaflora is the certifying agency for 74% (31).

Table 5: Industries Marketing Certified NTFPs in Brazil

Certified Operations	Species
- Klabin do Paraná Produtos Florestais Ltda	- 34 species of medicinal plants
- Ervateira Putinguense Ltda.	- Erva mate (<i>Ilex paraguariensis</i>)
- Indústria Pedro Pizzato	- Erva mate (<i>Ilex paraguariensis</i>)
- Associação Seringueira Porto Dias	- Copaiba oil (<i>Copaifera sp</i>)
- Cooperativa Mista de Produtores Extrativistas do Rio Iratapuru – COMARU	- Breu resin (<i>Protium spp.</i>), Brazil nut and copaiba oil Breu resin
- Associação do Seringueiros da Reserva Extrativista São Luis do Remanso - ASSER	- Copaiba oil, Brazil nut, jarina (<i>Phytelephas macrocarpa</i>) and other tropical seeds

Table 6: Native and Exotic Medicinal Plants of Klabin Pulp and Paper Company Certified in 2000

Trade Name	Scientific Name
1 Agrião	<i>Nasturtium officinale</i>
2 Aipo	<i>Apium graveolens</i>
3 Arnica	<i>Arnica Montana</i>
4 Artemisia	<i>Crysantemium partnenium</i>
5 Avenca	<i>Adiantum cunneatum</i>
6 Barbatimão	<i>Accacia adstringens</i>
7 Bardana	<i>Arctium minus</i>
8 Urucum	<i>Bixa orellana</i>
9 Boldo	<i>Coleus barbatus</i>
10 Carqueja	<i>Bacharis articulata</i>
11 Casca d'anta	<i>Rauwolfia selowii</i>
12 Cavalinha	<i>Equisetum arvense</i>
13 Chapeu de couro	<i>Echinodorus macrophyllus</i>
14 Cipo cabeludo	<i>Mikania hirsutissima</i>
15 Cipo mil homens	<i>Aristolochia triangularis</i>
16 Confrei	<i>Symphytum officinale</i>
17 Dente de leão	<i>Taraxacum officinale</i>
18 Erva de bicho	<i>Polygonum acuminatum</i>
19 Erva mate	<i>Ilex paraguariensis</i>
20 Erva de Sta. Maria	<i>Chenopodium ambrosioides</i>
21 Espinheira santa	<i>Maytenus ilicifolia</i>
22 Eucalipto	<i>Eucalyptus globulus</i>
23 Fel da terra	<i>Erythraea centaurium</i>
24 Gervão	<i>Stachytarpheta dichotoma</i>
25 Goiabeira	<i>Psidium guajava</i>
26 Guaco	<i>Mikania glomerata</i>
27 Maria preta	<i>Solanum nigrum</i>
28 Mentrasto	<i>Ageratum conyzoides</i>
29 Pata de vaca	<i>Bauhinia forficata</i>
30 Ipê roxo	<i>Tabebuia avellanadae</i>
31 Picão	<i>Bidens pilosus</i>
32 Quebra pedra	<i>Phyllanthus sp.</i>
33 Rubim	<i>Leonorus sibiricus</i>
34 Sabugueiro	<i>Sambucus australis</i>
35 Sete sangrias	<i>Cuphea carthagenensis</i>
36 Tanchagem	<i>Plantago major</i>
37 Taquara	<i>Guadua sp.</i>
38 Tenente jose	<i>Picrasma excelsa</i>
39 Umbauba	<i>Cecropia sp.</i>
40 Verbasco	<i>Conyza virgata</i>

In addition to the medicinal plants certified with industries, certification is also underway with various community organizations in Brazil (Table 7). This has been made possible by decreasing the administrative steps, simplifying reporting and customizing standards. To improve cost-effectiveness for community forestry, Imaflora developed a Social Fund for Certification to subsidize assessments of small-scale forest

management projects. Funds to support the fund are drawn from a 3-5% cost added to the costs of certification for private companies. This fund has helped to decrease the cost of certification by 20-40% (Souza 2004, pers. communication). To facilitate communities' access to certification, the social fund is now being applied with the cost reduction associated with access to certification. In addition, a volunteer Auditor's Bank introduces a means for specialists to offer their services at no cost or discount rates (Azevedo and Freitas 2003).

Table 7: Certification of NTFPs Underway at Various Levels in Brazil

Operations in the process of certification	Species
Asociacion Chico Mendes -Acre	Copaiba oil (<i>Copaifera</i> sp.) Seeds of native tree species
Asociacion de los Productores Rurales Seringueiros de Alto Diabinho-Acre	Copaiba oil (<i>Copaifera</i> sp.)
Proyecto de Asentamiento de Extractores	Copaiba oil (<i>Copaifera</i> sp.)
Proyecto de Asentamiento de Extractores Chico Mendes -Acre	Castana de Brasil (<i>Bertholletia excelsa</i>)
Asociacion de los Agricultores Natur Bauern Gruppe -Santa Catarina	Palmito Jussara (<i>Euterpe edulis</i>)
Particular -Claudio Lopo -Bahia	Piacava (<i>Attalea funifera</i>)
Cooperativa de Produtores Agroextratores de la Reserva Extratora de Cajari -Amapa	Tucuma (<i>Astrocaryum vulgare</i>)
Plantas Medicinales -Consórcio Terra Medicinal Sao Paulo	108 medicinal plants
Nedio Luiz Cacciamani -Particular - Ilopolis/Rio Grande do Sul	Erva mate (<i>Ilex paraguariensis</i>)

Source: From *Certificación de productos forestales no maderables (PFNMs) medicinales*. In *Simposio sobre plantas medicinales y aromáticas – una alternative de diversificación de cultivos en las regiones andina y agroindustriales de Colombia*. A. de Souza, Marcelo Caffer, A. G. Freitas and M. A. Voivodic.

CHALLENGES AND OPPORTUNITTES OF NTFP CERTIFICATION

Certification of non-timber forest products requires a base of knowledge regarding the ecology, socioeconomics and legal aspects of non-timber forest products, much of which is undocumented and/or unknown. Therefore, one of the great challenges and opportunities of realizing certification is to document and synthesize what is known. Certification will require a basic understanding of the biology and ecology of the target species. Furthermore, a myriad of complex social and legal issues are present where NTFPs are harvested and used – including tenure, resource access, worker rights and community benefits. The political powerlessness of most NTFP gatherers has marginalized their issues from the scope of political concern. Because few statistics exist to quantify the magnitude of sales of the bulk of locally and regionally traded NTFPs, the large, accumulated economic value of NTFPs goes undetected. Driven by established industrial interests, policies often overlook the socioeconomic and policy interests of forest-reliant people, designing regulations that impede their rights to resources and ability to gain a fair profit in sales.

Certification of NTFPs in the international arena is likely to comprise a viable strategy for only a few of the 'charismatic' forest products with high profiles and significant international markets, such as Brazil nut, chicle, palm heart and rattan, and widely sold medicinals (i.e. cat's claw, yohimbe). Although its application internationally may be limited to a specific set of products, certification has potential to raise consumer and industrial awareness of the conditions under which forest goods are harvested and traded, and to press for increased transparency and improvements in policy and practice.

SUSTAINABLE RESOURCE MANAGEMENT

Determining sustainable harvest levels for NTFPs is difficult and has best been accomplished through years of field observation and experimentation termed 'adaptive management'. Most operations applying for NTFP certification rely upon the principal of adaptive management and set harvest levels based upon observation and experience, supplemented by information gained from monitoring the impact of harvesting over time, what Peters (1996) calls 'successive approximation'. Few operations have the technical expertise, equipment, time and finances to perform more in-depth scientific analyses. Because so little information is available regarding the ecology and management of NTFPs, the process to attain NTFP certification can assist in correcting this, documenting centuries-old practices as well as small holder innovations.

Management planning is the most basic and formidable requirement for achieving certification of an NTFP. Most existing guidance for forest management revolves around timber objectives. Despite their long history of harvesting, there are few examples of good management plans for commercially harvested NTFPs, although increased efforts to develop effective and affordable management regimes are underway (Peters 1996). For example, Brazil nuts have been harvested in Bolivia for over 30 years, but the first Brazil nut management plan was not designed until 1998 under the auspices of the US Agency for International Development Bolivia Sustainable Forestry Management Project (BOLFOR). Many widely collected medicinal herbs have never been included in forest management plans, nor have sustainable planning harvesting regimes been created for their collection.

OPPORTUNITIES

- *Inform consumers and companies* – Certification can provide companies and consumers with a real alternative to the exploitative use of resources and local labor by highlighting the source and practices associated with forest goods.
- *Integrating NTFPs into timber assessments* – A heightened awareness of the role of NTFPs in forest use and management could encourage timber certifiers to press for the retention of species more valuable for their non-wood products than for their timber.
- *Decreasing logging of valuable non-timber species* – NTFP certification can increase awareness of important local and regional values, generate commercial revenues and slow logging of what otherwise are considered 'minor' species.

- *Managing for long-term prospects* – Managing for sustainability ensures the resource for the long-term, avoiding boom-bust phenomenon in resource extraction and providing for local livelihoods in a consistent manner over time.
- *Distinguishing legal gathering from predatory, illegal harvesting* – Guidelines require that products are harvested from legal and sustainable sources, thus discouraging rampant collection and encouraging the private sector to pay more attention to where their raw material is sourced.
- *Training certifiers and forest managers in the ecology, use and management of NTFPs* – Training of forest managers and certifiers in the basics of NTFP ecology and use can be an important first step in moving forest management practices towards a more holistic approach.

CHALLENGES

- *Lack of ecological knowledge* – The ecology of many species is poorly understood making it difficult to determine sustainable harvest levels, techniques or monitoring.
- *Unpredictable resource production* – Many NTFPs are characterized by uneven, unpredictable and inconsistent production. Such natural variation makes reliable and continual sourcing difficult. Volumes required for international markets may exceed production potential.
- *Cost of certification of NTFPs* can exceed that which harvesters can afford.
- *Differences in assessment* – Social and economic considerations from local people's perspectives will need to be included in assessments. To accomplish this, the traditional forestry curriculum will need to be expanded and these changes reflected in forestry training.
- *Chain of custody* – Ensuring ecological sustainability from source to sale is difficult for NTFPs.

ECOLOGICAL BASIS FOR SUSTAINABLE MANAGEMENT

Sustainable and equitable marketing of non-timber forest products depends greatly on the species, its ecology and the degree of management. Although efforts to promote intensified management and cultivation of widely used species are underway, the majority of NTFPs are still collected from wild sources. In India, 95% of the 400 plant species used by the Indian herbal industry are sourced from the wild (Uniyal, Uniyal and Jain 2000). In Germany, 93-98% of the over 1500 medicinal plants traded are harvested from wild populations (Lange and Schipmann 1997).

It is estimated that between 4,000 and 6,000 non-timber plant species are of commercial importance world-wide (Iqbal 1993). Of these, a handful has large export markets and the appropriate ecological and socio-political conditions for certification. It remains to be seen how certification will handle epiphytes, mushrooms and primary forest herbs, particularly when such products are harvested from public lands.

Barks, roots, bulbs and plant exudates such as resins, gums and oleoresins, represent a large portion of commercial wild-harvested forest resources; however, the ecological consequences of harvesting these plant parts remain poorly studied (Cunningham 1993). Most studies entail an insufficient amount of time to gain ecological understanding and focus on species and product types that offer fewer ecological challenges to study such as palms (40% of the 70 reviewed studies) and fruits/seeds/leaves, neglecting valuable and vulnerable species exploited for their exudates, roots and barks (Titkin 2004). Complicating the task of understanding the ecological underpinnings of management practices is that practices may be so subtle and be implemented over such lengthy time frames that they are undetected by outsiders.

When large, international markets place pressure on species, some species may succumb to increased harvesting and become vulnerable, while others sustain continued pressure. Key characteristics of species such as life span, sprouting ability, habitat and capacity to regenerate determine their vulnerability or resilience. Understanding the characteristics of species and their habitats, it is possible to predict responses to elevated levels of harvesting (Peters 1994 and 1996; Cunningham 2000). Root and bark harvest may be particularly problematic, especially from longer-lived species or those without the ability to resprout. By contrast, responsible harvest of reproductive parts – fruits, seeds, leaves or shoots – may pose relatively less risk to species populations (see Box 12). Species must be selected taking into consideration a host of social, ecological and economic criteria.

CHARACTERISTICS WHICH CAN FACILITATE CERTIFICATION OF SPECIES

These characteristics include:

- common and widespread
- quick to reproduce
- use of plant parts more easily managed (e.g., leaves, reproductive propagules vs. roots and bark)
- sustainably harvested over a long-time period
- well-developed market
- interested buyer
- tenure/access issues resolved
- doesn't endanger locally important (medicinal, religious, cultural) plants/sites

Of internationally traded forest products, bamboo, Brazil nut, rattan and palm heart are a few that have been identified as good candidates for certification. Palm heart provides a useful example of the importance of species selection and farmer innovation in sustainable management. Depending upon the species, palm heart may be harvested sustainably or unsustainably. *Euterpe edulis* from which palm heart is extracted in the Atlantic forests of Brazil is nearing local extinction, whereas *Euterpe oleraceae*, a multiple stemmed palm of which eastern Amazonian harvesters may leave stems for future growth, can be harvested sustainably. With growing markets in Europe for certified palm heart and increasing domestic sales of the drink made from palm fruit,

rural producers who manage for both fruit and palm heart have ingeniously devised means of managing the species to produce high quality palm heart and the locally beloved fruit.

Box 12 – Rural Amazonians Devise Way to Manage Palm for Palm Heart and Fruit

The fruits and palm hearts of multi-stemmed *Euterpe oleraceae* are products of both local and international importance from the Brazilian Amazon. The small, purplish açai fruits cut from high in the palm are processed into a nutritious beverage which is avidly consumed by most eastern Amazonians. In 2000, 121 thousand tons of fruit were sold in Brazil generating about US\$ 30 million (IBGE 2002). Palm hearts are harvested from the same species, but are not consumed by harvester families, being targeted to the domestic and international market only. Palm hearts are processed and canned in factories on the banks of the Amazon and are worth about US\$ 120 million annual in domestic consumption and trade (van Andel 2003). To harvest the palm heart, the entire stem is cut down and its crown shaft removed. A palm with a diameter at breast height of 8.5 cm can yield a palm heart of 2 cm diameter palm heart (Johnson 2002). One regulation that is codified for the industry, but not always followed, is the minimum diameter size of the palm heart purchased from harvesters. To increase yield, some palm heart harvesters remove all the stems from a single palm, negating the possibility of fruit harvest. Hired labourers extracting for palm heart companies often harvest all stems for industrial use, while small producers with land rights are more likely to manage for açai fruit. Over-harvesting and harvesting of immature palm hearts have weakened Brazil's position on the world market (van Andel 2003). Rising prices in local and national markets for fruit and increased demand from Europe for certified palm heart have led to increased management of açai for both products. Harvesting palm heart at longer intervals (4-5 years) causes less damage to the natural stands and produces higher palm heart yield. Leaving intact one or more mature stems per cluster increases the vitality of the clump and supplies the extractor with fruit. Because of its frequency and clonal self-regenerative habit, *E. oleracea* is able to sustain a viable industry as long as rotation periods are long enough and producers strictly adhere to their management plans (van Andel 2003).

Adapted from van Andel, T. "First FSC-certified non-timber forest product from the Brazilian Amazon", background paper for Congress on Globalisation, localisation and tropical forest management in the 21st century, Amsterdam, 22-23 October 2003; and Johnson, D. "Palm heart case study" in Tapping the Green Market, 2002.

According to FSC standards, survival of individual plants or the species population is not enough. Plants are part of an ecosystem. They provide food, microclimates and environmental services. Besides assessing the health of the target species, FSC's 'gold bar' standards also invoke assessment of the overall health of the forest and the interrelationship between the target species and its environment. Similar to FSC in this regard, the Analog certification system also views individual species as part of a wider ecosystem (see Box 13).

Box 13 – Forest Garden Product Label: Analog Forests in Sri Lanka

Studies in some tropical countries suggest that a process mimicking ecological succession is practiced in many rural areas where farmers' know-how plays a strong role. Reflecting this, at the Neo Synthesis Research Center (NSRC) in Sri Lanka, a series of experiments were developed to establish forests analogous to the native forest in structure and ecological function containing trees that yielded valuable products. The work demonstrated that if crops in these forests are grown organically, many species of animals and birds that were once confined to forests could move in and establish populations. The first Forest Garden Product Certification inspections occurred in 1987. The crops were coffee and cardamom. From the beginning, this certification system sought to look at biodiversity and system sustainability as fundamentally important performance indicators. During early field trials, developers of the certification system were impressed at the ease which the local communities 'internalized' the information. The ecological information they received explained their daily experience logically.

In Analog forestry, the farmer is certified for a particular land area – and products that the farmer sells from his chemical free land can then carry the 'Forest Garden Product' label. Today numerous villages in Sri Lanka participate in creating analog forests. To become certified, the grower is expected to: understand the management principals involved; prepare a farm plan; complete a farm questionnaire; demonstrate non-use of pesticides or toxins in the agricultural system for at least three years, and be able to maintain a record book for production and crop sales. Inspectors, with at minimum a masters in biological sciences, assess the sites using organic production and social development criteria. Multi-leveled, the system allows for: full certification whereby all requirements are met; transitional certification whereby a farm does not yet have 3 years free of pesticides and artificial fertilizers but is weaning off of them; and de-certification whereby some or all of the land certified may be removed from certification for a prescribed length of time. Growers can also be de-certified for failure to meet the requirements of the production standards or the conditions of the certification contract.

Source: Forest Garden Products Certification Service Products Manual, NeoSynthesis Research Center, Sri Lanka.

SPECIES VS. SITE-BASED CERTIFICATION

An important issue to resolve for NTFP certification is whether the traditional site-based approach of timber certification works for NTFPs or whether a species-based approach is required, given the ecological diversity of products found within a given area (see Box 1). Experience in Kenya with woodcarving suggests that species-based approaches can prove more effective in some cases. Klabin's certified medicinal plants (see below) also raise the question of the most effective way to certify NTFPs.

CERTIFYING CULTIVATED VS. WILD NTFPS

As the wood carving example shows, cultivated species can take pressure off natural forest habitat and contribute to conservation. NTFPs lie on a gradient of management scale from intensive to subtle, neither completely wild harvested nor cultivated. Numerous species still cited as non-timber forest products have moved from being extracted in the wild to being domesticated. Examples include rubber, bamboo, ipecac and pine resin. Brazilian economist, Alfredo Homma's (1992) model posits that most NTFPs are harvested from the wild during an expansion and stabilization stage, but that extractivism eventually declines through either

product substitution or through intensification of the production system, namely cultivation. The case of Kenya woodcarvers supports this thesis (see Box 14).

Box 14 – Wood Carving: Introduced Species Take Pressure off Slow-Growing Indigenous Species

By A. Cunningham, People and Plants International and S. Schmitt, WWF-International

‘Serial exploitation’ of indigenous long-lived hard wood species has serious implications. First, tree felling for carvings has a high impact on forest-dependent animals and East African coastal forest structure. This endangered forest type is one of 200 priority eco-regions and the habitat for endangered endemic species like the Sokoke Scops owl and Golden-rumped elephant-shrew which use hollow trees for nesting or shelter. As most indigenous tree species favored for carving are slow growing, farmers’ incentives to cultivate them are limited. In Kenya, the on-farm cultivation of fast-growing introduced species such as neem (*Azadirachta indica*) and jacaranda (*Jacaranda mimosifolia*) offers a viable alternative to wild harvest and relieves shortages in wood supply. We have termed these two alternative species “Good Woods” promoting them through posters, videos and local language drama. Carved animals from *Brachylaena huillensis* and neem are not easily distinguished by buyers, yet the growth rates of the two species differ greatly. *Brachylaena huillensis* trees reach 40 cm diameter at breast height (dbh) in 100 years (Kigomo 1989). By contrast, *Azadirachta indica* (neem) reach 40 cm dbh in 16-25 years (Lemmens et al. 1995; KEFRI unpublished).

From Cunningham and Schmitt, Certifying woodcarvings: Opportunities and constraints in East Africa, CIFOR NTFP case study.

As NTFP certification proceeds, it will be important to determine where potential candidates are positioned on the management gradient (whether species are cultivated, wild extracted or from a managed source) and if they are natives or exotics (see Box 15). If NTFPs are cultivated, assessments will need to determine whether cultivation or domestication has occurred at the expense of forests or whether management contributes to conserving forest resources. Reflecting the distinction between natural forests and plantations, FSC’s work on plantation standards could yield useful lessons for NTFP certification. Living up to standards in natural forests is more difficult and expensive than for plantations, thus caution will be needed as plantations are generally easier to certify (Ros-Tonen 2004). In Brazil, for example, approximately 2/3rds of the country’s 1.5 million ha of certified forest are plantations, with the remaining 1/3^d natural forest in the Amazon. Success may be due to fewer problems related to land tenure, high level of organization of the plantations sector, good access to information and human and financial resources (Freitas 2003). This example provides a note of warning for NTFP certification as, in most cases of small holder NTFP harvest, few if any of these conditions are met.

Box 15 – Bamboo

As with the term ‘rattan’, ‘bamboo’, refers to a multitude of species at different stages along the gradient of domestication. In China, bamboo plantations and improved natural bamboo stands occupy 4.21 million hectares (Shidong and Chuande 1998 in Maoyi and Xiaosheng 2004). In Anjing county, a center of national bamboo production, bamboo exports have grown exponentially since 1980, starting at that time at less than 5 million and rising to US 56.3 million dollars in 1998, with an estimated 64% of farmers managing bamboo as part of their daily activities (Maoyi and Xiaosheng 2004). In some areas, bamboo crops are guaranteed through application of substantial quantities of fertilizers; it is estimated that, on average, farmers annually apply 200 kg of fertilizers per hectare to bamboo plantations (Maoyi and Xiaosheng 2004). In some areas, forests are cleared to cultivate bamboo. The variable ecological status of bamboo, based on genus, species, habitat and deforestation rates in the surrounding areas, make clear that it is critical to ascertain the status of species populations within the area to be certified. Although some species of bamboo are regarded as having ecological and market potential for certification (Ros-Tonen 2004), details regarding the natural history of particular species are critical to determining sustainability. A recent UN report reveals that up to half of the world’s 1,200 woody bamboo species are in danger of extinction (Nature News Service 2004). Individuals in any one species tend to flower together once every 10-100 years and then die. If a forest is cleared at this time, the bamboo will not grow back. Species that rely almost exclusively on bamboo for food and shelter such as mountain gorillas, giant pandas and lemurs may also face extinction (Nature News Service 2004).

CERTIFICATION OF NATIVE, EXOTICS AND/OR NATURALIZED SPECIES

NTFP certification under the FSC umbrella was originally directed at products derived principally from natural forests to distinguish such goods as contributing to forest conservation and as being separate from agricultural systems. Many commonly produced agricultural products (e.g., cocoa and coffee) were originally forest products that have been domesticated under plantation systems in response to market demand. It is often difficult to classify a species along the cultivated-to-wild continuum, as species move along a gradient between these classifications in both time and space. Close to cities, rural farmers respond to market incentive by investing time in intensification; species which remain unmanaged in remote regions may be intensively managed in peri-urban areas. Such harvesters may increase the density of a species, but it may remain part of a forested ecosystem, such as açai. Other species may present more obstacles to planting, such as Brazil nut, which is still largely collected from forested regions in which it occurs in relatively low densities.

In addition to determining whether NTFPs are cultivated or intensively managed, it is also important to determine which NTFPs are products of native species to the area being certified and which are exotics and/or naturalized. This information is fundamental to understanding whether the act of certification is meaningful from the standpoint of conservation. Thousands of annual and perennial ‘weeds’ feature prominently in pharmacopoeias throughout the world (Stepp and Moerman 2001). Many of these are part of the international trade in botanicals and other products. What does it signify when widespread ‘weed’ species are certified ecologically sustainable as part of forestry operations? Of the list of herbaceous medicinal herbs certified as part of Klabin Pulp and Paper, for example, a handful of species are designated by the company as ‘exotic’ but many of the species on the list are cosmopolitan weed species found throughout the world (see Box 16).

Box 16 – Certification of a Mix of Native and Introduced Phytotherapeutics

By Loana Johannsson Klabin S/A

Klabin pulp and paper has over 85,000 hectares of native forests and commercially planted low-growing vegetation. Since 1984, a program of biodiversity prospecting has inventoried 240 different plant species, 240 of which possess therapeutic potential, 130 of which have possibilities for practical use. Certified by the FSC for their forestry management practices in 1998, in 2001, Klabin's was also certified for NTFPs – phytotherapeutic and phytocosmetic products. The approximately 60 species used per season are obtained through good forest management, supporting phytotherapy for the improvement of community-living standards and company employees and their families. Of the 60 species, 20 are native, (taken directly from the forest) and ten are domesticated native species that require special growing techniques. The remaining thirty species are exotic, having been introduced into the region by settlers.

For NTFP Certification to have conservation significance and to ensure that the message behind labels is clear to consumers, plantation-derived species, exotics and cultivated plants may need to be distinguished from wild harvested, forest-derived goods. The level of social and ecological complexity involved in managing forest species in remote areas with scant transport exceeds that involved in sourcing domesticated species. Furthermore, the time, effort and expenditure to identify and organize the extraction of plants from forest communities far exceeds that of contracting harvesters to collect a crop of planted annual or perennial herbs. The Brazilian cosmetic company Natura offers a useful example. After years of struggling to seek certification for ten Amazonian forest species, certification remains elusive. To reach their goal of sustainability, they have decided to reduce both the number of species and the number of communities with which they work (see Box 17).

MONITORING

Monitoring is one of the most critical components for a sustainable NTFP management system. Monitoring must not only reflect population demographics but a species' response to a particular harvest regime. Monitoring also has to be financially viable. For many NTFPs in high diversity tropical forests, calls for statistically accurate, random plots in NTFP assessment (Wong et al. 2000) are simply not practical in time or money. In their study of rattan inventory costs in Laos for example, Evans and Viengkham (2001) found that a survey precision of <20% was very time consuming and 5-10% was impractical. Local people's knowledge and skills can help solve this problem, but gets away from the "third party" goal of independent certification. While certain tools have been designed to set harvest levels and to help monitor population dynamics post-harvest (Peters 1996; Cunningham 2001; Hall and Bawa 1993), rural communities have generally devised their own methods to monitor the vigor of the plants which they rely upon. Such locally devised systems can provide valuable information to ecologists and forest managers. The case of rattan harvest in Indonesia provides an example of how communities are beginning to systematize their knowledge base regarding sustainable off-take (see Box 21).

Box 17 – Sustainable Use of Natural Products in Cosmetics and Certification

By P. Pommez, Vice President, Ekos, Natura, São Paulo, Brasil

In the late 1990s the Brazilian health care and cosmetics company Natura decided to build a technology platform based on the sustainable use of Brazilian biodiversity. Founded in 1969, Natura's decision returned to the values on which the company was built: social responsibility and a solid innovation process aimed at creating products that promote well being. With 22% of the world's biodiversity and hundreds of indigenous and traditional communities, the interface of such a rich biodiversity and socio-diversity could be an infinite source of knowledge, information and ingredients – if used in a sustainable way. Imaflora, a Brazilian NGO associated with the Rainforest Alliance, helped Natura to implement a certification program based on FSC principles and criteria for the ingredients obtained from extraction.

Lessons learned:

After two years of hard work we are still struggling to have our first ingredient certified. Although it is a concern, we know that the lessons learned are invaluable and are convinced that we are on the right track.

1. We began the *Ekos* line with 10 different ingredients from 10 different communities. We are now limiting the introduction of new active ingredients and are trying to source them from a few communities.
2. In selecting communities we must look for communities with at least a minimum of organization in form of association, co-operative or reserves.
3. Even when communities are organized we need to develop local capability to implement forest management and to help them add value to their work.
4. Remuneration should be based not only by buying the ingredients at a fair price, but also in recognizing local knowledge in the use and/or processing of the ingredients and in divulging their image.

The *Natura Ekos* line has been a commercial success but we have not yet achieved our ultimate goal: to help build a sustainable economy at the local level. The Certification Process as it exists today, whether based on FSC, on IFOAM or FLO addresses – in an efficient and helpful way – only a part of the issue. None of them, in our opinion, integrates in a holistic manner the entire chain of custody: -- from IRATAPURU* to Paris.

*IRATAPURU is an Extractive Reserve where *Natura* obtains Brazilian nut, one of the ingredients used in the *Ekos* line of products.

Box 18 – Community Monitoring of Sustainable Harvests of NTFPs

By J. de Beer, The South East Asian, NTFP Exchange Programme

Monitoring has left the realm of biologists, foresters and scientists. As new demands on forests and user groups have arisen and as resource bases dwindle, local communities are seeking more formal monitoring to guide their management. Incentive to monitor the resource base is driven by many factors. To gain access to resource rights in the Philippines, communities are required by the government to prepare resource management plans. In India, alarm over rapid depletion of the resource base and diminishing production of goods such as tendu leaves and wild mango catalyzed community interest in self-monitoring. In Indonesia, rattan harvesters look toward monitoring to gain recognition and credibility for their age-old sustainable management practices and to serve as a useful foundation for certification. In 2003, members of the Indonesian NGO, SHK Kaltim/RFA visited the FurniCraft Trade Fair, organized by the Indonesian Department of Trade and Industry. There they were exposed to large, industrial markets for handicrafts and learned of the benefit of distinguishing one's product as sustainably harvested and monitored.

While community interest is high, the practical challenges of monitoring the sustainable harvest of NTFPs involve many factors such as the objectives, the skill level of those conducting the monitoring, the level of accuracy and rigor required, and cost. Though certification standards such as those developed by FSC are comprehensive and well thought out, they are stringent and applying them to communities with minimal resources is difficult. Therefore, it is important to explore monitoring methods for communities which are doable and are backed with solid documentary evidence to make those methods credible to the broader public, especially consumers.

Communities within Indonesia, Philippines, Sri Lanka, India and Vietnam are experimenting with self-monitoring systems, catalyzed by a network of NGOs which exchange information and experiences as part of the Southeast Asian NTFP Exchange Programme. Their experiences to date indicate that a great deal of work is needed to formalize and document management and knowledge systems that have a historical basis. Translating what is locally known to the language and style of certification as well as making the language and style of certification understandable to communities is a large task. The question which communities, NGOs and donors need to increasingly ask is: will the benefits outweigh the costs?

SOCIAL CHALLENGES AND OPPORTUNITIES

One of the aims of certification is to incorporate the true social and environmental costs of producing goods, thereby internalizing formerly externalized costs. However, the current economic model is ill equipped to measure not only the commercial but the subsistence, social and spiritual value which forest goods and their collection confer to individuals and communities both in rural and urban areas. Green marketing initiatives have been critiqued on the grounds of producing negative social impacts and few benefits for local people (Dove 1994; Gray 1990). These problems are not only specific to NTFP certification but to markets and market-based mechanisms in general. Colchester (2004) states that the new political, institutional and partnership requirements of market-based schemes do not often link up well with the priorities, institutions or customary systems of decision-making of local communities. Rather than creating more social and financial equity, the changes required to enter market-based conservation schemes may exacerbate division within communities based on class, wealth, gender and power.

However, in some cases, certification may have the potential to validate, reinforce and reward good NTFP management, to provide a buffer in between communities and the international market, and to strengthen social and cultural norms involving NTFP harvest and sale. Opportunities and challenges offered by NTFP certification are listed below.

OPPORTUNITIES

- *Strengthening community forest management* – Certification can elucidate best management practices for NTFPs and develop easy-to-use field guidelines for assessing management efficacy. Certification standards may provide positive models for managers, donors, companies and non-governmental operations.
- *Increasing pride in management* – Smallholders have felt increased pride in their management techniques, which has helped to reinforce customary practices that ensure long-term supply.
- *Improving relationships* – Strategic partnerships between industries and communities can lead to better understanding and improved resource management (see Mil Madeiras case).
- *Promoting consumer education on sustainable forestry and fair trade* – Campaigns will help to increase consumer awareness of the environmental and social conditions in which products are harvested and of the need for sustainable and fair trade models of forest product extraction.
- *Strengthening community institutions* – Certification can help support collaboration and organization among community members (see Box 15).
- *Opening access to new markets* – Certification may allow communities to tap new niche markets for their products, particularly in areas where consumer concern over forest conservation and equity in trade are well developed.

CHALLENGES

- *The need for formal recognition of land tenure or legal rights to resources* – Many NTFP gatherers do not own title to the lands upon which they collect and recognition of gathering rights is a chronic obstacle for NTFP harvesters to attain certification.
- *Lack of organization and power* – Small producers have inadequate market information, legal knowledge, negotiation skills or sufficient level of organization to assert their rights or to assess the pros and cons of certification.
- *Inadequate technical capacity on the part of many producers to meet certification standards* – Administrative and institutional requirements to ensure quality control, marketing and negotiation are important elements of success, yet few communities have the requisite knowledge, capacity and expertise. Community groups find it difficult to meet the volume and quality demands of certified markets.

- *Unrealistically high expectations for producers*– Externally driven, certification is often poorly understood by small producers who often overestimate opportunities and underestimate limitations and obstacles.
- *Difficulty in striking a balance between the need to improve existing working conditions and over-regulation* – Harvester living conditions, levels of education and working conditions are often considered sub-standard.

A primary characteristic of many non-timber forest products is that they are often harvested “under the radar screen;” that is, they are gathered on federal, private and state lands which are often not the domain of the harvester. In many cases, harvesters are either landless poor or own or have use of small plots of property. Since a large portion of NTFP gatherers worldwide do not have secure land tenure – a fundamental prerequisite for the FSC certification scheme – most NTFP gatherers are all but excluded from consideration for certification. In addition, the process of identifying ownership and access often favors the elite and excludes independent gatherers. After land and resources are demarcated for the purposes of certification, the collecting activities of some gatherers may be curtailed or designated illegal, thereby resulting in the loss of access to subsistence and trade goods (Pierce et al. 2003). In Bolivia, in spite of long-term efforts to develop NTFP guidelines for certification, issues regarding land tenure prohibit certification from proceeding (Box 18). Certification’s focus on the land base rather than the harvester may be problematic for many NTFPs. In such instances, more appropriate mechanisms to foster better NTFP stewardship, in addition to land-based certification, may include NTFP harvester training or certification of NTFP harvesters.

Harvesters of forest resources are often poorly organized and powerless, peripheral to economic and political power circles. Some communities have great difficulties in preparing their NTFPs for sale at even simple local or regional markets (Shanley 1999). For such actors, certification requires a marketing sophistication and an institutional and administrative infrastructure that is generally far beyond their reach. Management plans, monitoring, unfamiliarity with national laws, uncertain knowledge of market opportunities and other factors combine to make certification a difficult enterprise for the small producer (Markopoulos and Thornber 2000). Even well-organized harvesters may be reluctant to comply with the additional regulations and oversight required by certification. This is not only because the regulations are anathema in and of themselves, but also because such added oversight involves extra costs and monitoring that may lower or negate their profits or compete with subsistence activities (Pierce et al. 2003).

NTFP harvesters are often seasonal workers. Harvester living conditions, levels of education and working conditions are often sub-standard as defined by labor and education laws. From a rural perspective, rural education and child labor involves the passing on of complex management practices and sophisticated discoveries, many of which are central to their livelihoods and sustainable management. However, according to modern standards, NTFP gathering systems involve child labor, lack of health care, debt peonage, and difficult or dangerous working conditions, posing potentially insurmountable impediments for certification. Formalizing NTFP harvests may change the terms and conditions of labor among gatherers and limit or eliminate access to products and the ability of laborers to maintain independence and control the terms of labor (Emery 2002).

Box 19 – Land Tenure Struggles Inhibit Certification of Brazil Nut in Bolivia

By Pablo Pacheco, Center for International Forestry Research

Although forest certification guidelines for Brazil nuts are now available (see Box 2), it is unlikely that extractors will certify their operations soon. The main factor inhibiting certification initiatives is the existence of competing claims over forest areas throughout the region. In northern Bolivia, *barraqueros*, who have traditionally had de facto rights over forest resources since early last century, compete for land and forest resources with communities of small farmers along roads and rivers as well as with five different groups of indigenous people. Due to uncertainty over land tenure each has laid claim to as much land as possible; indigenous groups claimed 800,000 ha, while *barraqueros* and communities each demanded 3.5 million ha.

Forestry and land regulations approved in 1996 have caused more conflicting claims from small farmers and indigenous communities as the regulations did not seriously consider the legal status of *barracas* in the northern Amazon. To clarify the land rights, in June of 2000, the government agreed to allocate 500 ha plots to small farmers; to title indigenous territories; and to recognize areas historically occupied by *barraqueros* as non-timber forest concessions. Allocation of land rights involves a complex technical process of title regularization implemented by the National Institute of Agrarian Reform (INRA). This process will attempt to determine where the land or territorial rights begin and end for each landholder. Currently in its final stage, it is estimated that this process will title 2 million ha in favor of small farmers and indigenous communities, 2.5 million ha will be granted as non-timber forest concessions to *barracas*, and some other 2 million ha would remain as public forest to be allocated to forest concessions.

Once the land tenure issues are resolved, current national legislation providing clearer forest management guidelines could assist the process of certifying Brazil nut gathering operations. Land tenure agreements among stakeholders could also help to capture the attention of the Bolivian Council for Voluntary Forest Certification (CFV) and stimulate further certification initiatives. Demand for Brazil nuts from overseas green markets might also provide the needed economic incentive to certify operations. Even with these substantial legislative and technical gains, however, it remains unclear whether small farmers will be able to pay for the high costs associated with certification.

In many regions, NTFPs are imbued with cultural and spiritual significance and are linked to a sense of personal, communal or cultural identity. Certification requires that forest operations respect sites of cultural or religious significance such as sacred groves. This provision may need to be extended to certain species used for spiritual purposes. However, the cultural context of NTFP-dependent people is so complex that certification itself will not be adequate to ensure preservation of local traditions, customs and cultures.

Under particular circumstances, certification may provide a platform to raise awareness and spur social change. Nelson et al. (2002) found that ethical trade certification improved pricing as well as weighing and grading transparency among cocoa farmers in Ecuador and had a spill-over impact among adjoining communities and competing companies. In Mexico, small holders report that certification has helped their centuries-old forest management practices to be recognized (Molnar et al. 2003). In Brazil, an attempt by small holders to certify their palm heart production catalyzed interaction among collectors and exchange of useful details regarding forest management practices. Innovative healthcare arrangements between company employees and the Brazilian company Klabin have been implemented, whereby medicinal plant preparations grown and processed on the company's premises are used for the health care of employees (May 2002; Klabin 2002; see Box 16). In Bolivia, national certification standards demand attention to areas like conflict

resolution and community organization and in Brazil, concessionaires have improved worker conditions and compensated local communities (Contreras and Vargas 2002). Certification may be one of the few tools in certain regions that permit harvesters a voice in issues relating to land, labor and resources. As part of the certification process, difficult issues such as worker rights, land tenure and employee health care must be discussed and addressed. In some cases, certification can foster new relationships among timber companies, industries producing NTFPs and communities.

MARKET AND ECONOMIC CHALLENGES AND OPPORTUNITIES

Certification is designed to create incentives for improving forest management systems and allowing producers to access markets and gain premiums for their well-managed products. Through eco-labeling, retailers and consumers can feel sure that products they buy and sell meet standards for ecological sustainability and social responsibility. Increasing numbers of companies are seeking certified sources of raw materials as part of wider efforts to position themselves as socially and environmentally responsible, to secure reliable sources of well-managed raw materials or to enter new markets (Shanley et al. 2002; Freitas 2003a).

As a market-based tool for social and environmental change, certification is dependent upon companies and consumers sharing the common values and goals articulated in certification standards and guidelines. In some cases, this means companies and consumers will need to pay more, and in others they will need to make the additional effort to seek out certified products. European consumers and companies have proved most committed to creating change through the consumption of eco-labeled products, but consumers around the world are increasingly receptive to certified products. Certified products have limited consumer base in countries with widespread poverty where immediate livelihood concerns are a priority. As a result, certification of NTFPs will work best for those products with significant markets in countries with consumers willing to pay a premium to support social equity and environmental sustainability (Shanley et al. 2002). This negates the majority of users and harvesters of NTFPs who use them on a subsistence scale or who market them locally.

OPPORTUNITIES

- *Enter emerging markets* – Globalization is creating niche markets which are potential candidates for certification.
- *Increase the competitiveness of small holders* – Opportunities are created for small holders to meet new consumer demands for “green” and sustainably sourced products and receive higher prices for well-managed raw materials. (see Box 20)

- *Corporate responsibility* – Third-party certification can separate responsible companies from companies who engage in marketing hype, alleviate consumer confusion and reward sound management and marketing).
- *Greater recognition nationally and internationally* – Certification has helped to bring attention to and affirm the sound and sophisticated forestry practices of community based forestry enterprises
- *Donor interest or support* – Donors have shown strong support for certification as a market-based tool to achieve conservation and development objectives.
- *NTFPs feed niche markets with consistent demand for 'new' products* – While the potential to develop new timber markets is limited, and efforts to market 'lesser known' timber species have met with resistance, interest in new foods, medicines, and other NTFP products is significant and growing in some regions.

CHALLENGES

- *Narrow and unpredictable markets for NTFPs (boom and bust)* – Markets for many NTFPs are shallow and inconsistent, with demand changing rapidly, exposing producers to significant risk.
- *Meeting commercial specifications can be difficult* – NTFP producers often have problems meeting marketplace specifications (e.g., for quality control) and volumes. As Jason Clay (1992, p. 306) said of Cultural Survivals work with brazil nuts in Brazil: “We spoke with a large candy company about the possibility of using rain forest nuts in a candy bar. They use 70 metric tons of nuts per eight-hour shift, a year’s production of the Xapuri nut-shelling plant.”
- *Little consumer demand* – Certification of NTFPs is a low priority for most consumers. Raising awareness about the implications of purchasing the wide range of NTFP products – e.g. medicines, resins, fungi, bird’s nests and nuts – requires a great deal of marketing and awareness-raising in consumers.
- *Uneven quality of products* – The quality of NTFPs is highly variable, leading to obstacles in processing and marketing.
- *Inappropriate tool for this category of products* – Only in exceptional cases do NTFPs find their way into international markets that may be receptive to eco-labeling like the luxury food, medicinal herb and floral trades.

The majority of wild harvested goods are consumed by low-income rural families who are reliant on seasonally available wild resources. Invisibility is often an essential characteristic of this informal economy. When reappraised as valuable or “certifiable”, formerly undervalued products, once safely the realm of the poor, are likely to be appropriated by powerful interests such as larger industries and governmental agencies (Dove 1993). As a market-based mechanism, certification can threaten the livelihood strategies of rural people by creating new market demands, making harvesters who formerly operated “under the radar screen” visible,

fueling potential overexploitation of the resource base and imposing permitting systems where none existed before (Pierce et al. 2003; Emery 2002).

In addition to newly created regulations that impede access to forest products, certification has built-in costs that few gatherers and small community groups can afford. Even multinational companies weigh the costs and benefits of certification carefully before committing to such programs and often balk at financial and human resources demands required by certification. Small producers rarely have the funds to cover the direct (e.g. assessment fees) and indirect (e.g. additional investments in management and marketing) costs of certification and annual re-evaluations (Robinson 2000). Donors who provide external financial support for communities to meet certification requirements may create a situation of dependence that proves to be untenable in the long term (Pierce et al. 2003).

While trade in particular forest products is skyrocketing, (botanicals, rattan, crafts and specialty foods) optimistic expectations of higher income, new niche markets and international trade simply have not materialized for many forest products as a result of certification. Certified products frequently occupy niche markets that target well-off consumers who demand a superior and uniform level of quality in their products that are difficult for NTFP harvesters to achieve (Mallet 2001). Market premiums may be low or non-existent, thus giving limited incentive to harvesters to invest in certification.

In part, this may be due to the incipient nature of NTFP certification and over time more benefits will be captured. It may also be linked to the difficulty of tracing the direct financial benefits of labeling. The NGO PhytoTrade in Namibia has successfully become an intermediary commercializing large quantities of devil's club to European nations. Because the manufactured end product – an herbal remedy – contains a mixture of ingredients and small quantities of devil's club, they remain unsure if and how organic labeling of their own ingredient helps.

Many small-scale producers and communities have limited information on new markets into which their certified products will feed and need support to acquire this information. As one Brazilian certifier observed, “community forest management projects often try selling whatever they produce and not the other way around – what the market demands”. NTFP certification, along with other export-driven trade, often benefits primarily larger producers and capitalized community operations through access to new markets and better prices (de Freitas 2003a). For both small farmers and large industries, disappointment can result when demand for price premiums and market access as a result of certification do not always materialize. In Mexico, certification of chicle failed to end a multi-year slump in sales or open new markets. In Southern Africa industry demand for high-quality certified sustainable – but more expensive – material has not been significant (Lombard, Cole and Plessis 2003; see Box 9).

Box 20 – Brazil Nut: Economic Incentives and Obstacles to Developing Certification Guidelines

By Pablo Pacheco, Center for International Forestry Research

Bolivia has one of the largest areas of certified tropical forest for timber production in the world, close to one million hectares. Bolivia has also shown ground-breaking efforts to certify non-timber forest products – specifically Brazil nut. In northern Bolivia, Brazil nuts cover an area of approximately nine million hectares. An important revenue earner with export values reaching \$US 27 million in the last two years (BCB) or 5.3% of the non-traditional exports in 2002, Brazil nut export values have even exceeded those of timber products since early 2000. Brazil nut collection, processing and export historically constitute the main economic activity of the Bolivian northern Amazon and contribute to generate approximately 22,000 direct and indirect jobs (Bojanic 2001). Nevertheless, as in most cases of extractive economies, the processing plant owners get the largest share of the export earnings, while the *barraqueros* (holder or claimant of a rubber states or *barracas*, a unit of forest exploitation yielding various forest products, including Brazil nut) and extractive communities take home a small share, and the Brazil nut collectors receive even lower payment for their seasonal work. With high national revenue and multiple stakeholders involved in the economy of Brazil nut, Bolivia has strong incentives to develop guidelines for NTFP certification.

In addition, labels are not always known by consumers – some producers report that ignorance of the message behind a label – e.g. the case of FSC certified maple syrup (see Box 1) – acts as an obstacle to achieving market access or premiums for their products. The growth in such “green” markets for non-timber forest products has been accompanied by a mushrooming of claims of environmental responsibility by numerous companies. Because sustainable extraction of NTFPs represents a complicated concept, any attempt to promote NTFP certification will require a wide-spread consumer education campaign highlighting the source and practices associated with the collection and processing of forest goods. A result of this campaign could be greater consumer awareness of the environmental and social conditions in which products are harvested and the need for sustainable and fair-trade models of forest product extraction. Such efforts could help to distinguish reputable from companies who engage in unsubstantiated marketing hype, ensure accountability, alleviate consumer confusion and reward sound management.

Other communities have opted to develop local and regional markets for their products, a less arduous and risky path. The NTFP Exchange Programme for South and Southeast Asia offers an example of a group that is attaining national and regional sales with the help of specific technical guidance regarding the marketing of their product (see Box 21)

Box 21 – Local Labeling for “Green” Jam and Wild Honey Boosts Sales

By J. de Beer, Southeast Asian NTFP-Exchange Programme

The NTFP-Exchange Programme for South and Southeast Asia (NTFP-EP) is a regional network which was formed in 1997 to strengthen the capacity of local groups (primarily indigenous peoples and other forest dependent peoples) in Asia to implement activities directed at sustainable forest use and NTFPs. The NTFP-EP distinguishes itself from most other networks by striving to concretely address the practical needs of community groups. The organization facilitates information exchange focused on the interrelated themes of resource management, land tenure, product development and marketing, and assists in building linkages with partners in the Philippines, Indonesia, Malaysia, Vietnam and India. One NTFP-EP-supported initiative worked with villagers in the Philippines to market jams sourced from forest fruit trees. The villagers' fruit jams are now sold in Manila supermarkets and will soon be available in specialty shops in Indonesia. Pastor Rice, who helped to found the Kalahan Educational Foundation initiative states, “we are far from Manila, we cannot do marketing, but we can produce a good end product”. Background forest inventories, product development and adding value in the community ensure the quality and quantity needed to reach national markets. A link with the Upland Trade Marketing Association helped to explore market links and to develop their own label, indicating the fruit is sustainably sourced and processed by a forest-based community. The good taste of the unusual fruit and its local label, have been sufficient to secure high-end marketing.

Another of the NTFP-EP projects, The Honeybee Network, stretches from India to Kalimantan and Suluwesi. Villagers have attended workshops to exchange tips on better processing, filtering, packaging and storage. The various sites are now developing a joint label and are planning on launching “Honeybee Network Honey”, distinguishable by its superior quality and range of flavors. Honey from the Mangrove forests of Palawan, for example, has a hint of salt, while Trigona stingless bee honey from Philippines is sold in tiny bottles as it is used medicinally. The label will convey to the consumer “that there is a serious effort to control what goes in the bottle”. In India, the Honeybee network's partner, Keystone Foundation, found independent third party certification too expensive. Given that most of their honey is sold within India, they have developed local labels for marketing spin-off products such as bees wax candles. Bearing the somber title “Last Forest” the label states that the candle is made from pure bees wax, collected by indigenous honey gatherers of the Nilgiris.

LEGAL AND INSTITUTIONAL CHALLENGES AND OPPORTUNITIES

The legal and institutional framework regulating NTFP use, management and trade in most countries is a complex and confusing mix of measures, overseen by a wide range of (sometimes competing) institutions (e.g., Antypas et al. 2002; Tomich 1996; Wynberg and Laird in press). This framework includes measures directly targeted at conservation of the resource, improved rural livelihoods or broader economic growth in a region tied to the traded species (Deweese and Scheer 1996). These measures operate in conjunction with others that, indirectly, can have equal or greater impacts on NTFP use, management and trade, including taxation, land and resource rights and regulations relating to quality control (Ndoye and Awono forthcoming); Laird et al., in press). At the same time, in many parts of the world, customary laws regulate the management and use of NTFPs with varying degrees of effectiveness, depending upon social, economic and political pressures and change (Wynberg and Laird, in press).

In many countries, the hodgepodge of laws that make up NTFP regulation combine to create confusion and can negatively impact producers and harvesters and make investments in long-term management of species unattractive (McLain and Jones 2001; Ndoye and Awono forthcoming) as is the case with rattan in Indonesia (see Box 22). Certification, as a market-based tool dependent upon formalizing what can be chaotic legal arrangements, has the potential to further alienate local producers and undermine local control over resources important for local communities (Arnold and Ruiz-Perez 2002; see Box 6). It is critical, therefore, that the potential for certification to promote sustainable management and equitable sharing of market benefits be assessed in light of legal and institutional realities. Unintended consequences are far too often the result of interventions seeking to formalize relations in the NTFP trade (Laird et al., in press; Arnold and Ruiz-Perez 2002).

Box 22 – Rattan

Theoretically, rattan has been identified as one of the few, excellent NTFP candidates for certification (Sunderland and Dranesfield 2002). Baseline information is available and in certain sites there is adequate land and resource tenure as well as long-term local knowledge of sustainable management regimes. Indonesia is the largest supplier of rattan in the world, producing close to 80% of world supply. While in the past, most rattan entering world trade has been harvested from wild growing resources, growing numbers of forest communities in East and Central Kalimantan manage complex cultivation systems including rattan which account for an estimated 50% of national commercial production. Between 1988 and 1998, the Indonesia rattan trade was dominated by a cartel system that weakened the position of farmers causing farm gate prices to drop dramatically, damaging their intricate trade networks. Beginning in 1998, the export ban was withdrawn and prices slowly began to improve and farmers became motivated to invest in harvesting and marketing rattan. In May 2004, the export ban was reinstated, thwarting harvester initiative and weakening their position and trade opportunities.

Most critical is the issue of resource and land rights, since a large portion of wild NTFP harvests do not take place on land owned by harvesters and certification can end up excluding local communities. Trends to legally require detailed management plans for the harvest of species should also be tempered by the realities of what communities can produce, or technical assistance for local groups should be built into the regulatory framework (Purata et al. 2003). In Brazil, it is commonly believed that it is easier to get legal permits for deforestation than to get approval for a forest management plan (Freitas 2003). On the other hand, certification has served a positive role in these very areas by bringing to light inequities in resource and land rights, the inappropriateness of some bureaucratic requirements for sustainable management and by catalyzing national and local dialogues on trade and equity issues and amendments in policy related to NTFPs. (see Box 24).

OPPORTUNITIES

- *Certification can strengthen community claims to land and resource rights* – The process of industries applying for certification can offer a platform for neighboring communities to raise sensitive land tenure and resource issues that otherwise have few outlets to be addressed.

- *Certification can provide background and conceptual frameworks* for better policy and can catalyze national dialogues.
- *Growing interest in better NTFP regulation* – In some areas, new measures have already positively impacted producers' livelihoods and species management (e.g., the 1999 Chico Mendes Law in Acre, Brazil; see Box 23).

CHALLENGES

- *Uncertain tenure and access to forest resources* – Certification focuses on land units, not products or harvesters and is restricted to landowners with formal land rights. This excludes those with no legal resource or land rights, which characterizes many NTFP harvesters. The process of identifying ownership and access can favor elites and exclude independent gatherers (see Box 20 - Pacheco).
- *Negative impact on subsistence needs* – After land and resources are demarcated for the purposes of certification, the collecting activities of some gatherers may be curtailed or designated illegal, thereby resulting in the loss of access to locally-important subsistence and trade goods (Pierce et al. 2003; Shackleton, Box 6).
- *Regulatory burdens* – Laws regulating access, use and marketing of NTFPs can already over-burden harvesters. Certification has the potential to exacerbate this problem. The need to regulate trade in forest products must be balanced with the need to make laws realistic and accessible to smaller producers.
- *Adapting to scale* – Standards need to be adapted to fit different scales of land ownership as well as a range of NTFP species. Studies conducted in the United States and Canada indicate that the complexity of products, harvesting rights and forest types requires not one set of standards but a variety of instrument types (Jones, McLain and Weigand 2002).
- *Supporting advances in recognizing rights over traditional knowledge* – Certification must address legal and policy advances in recognizing indigenous peoples' and local communities' rights to control the use of their traditional knowledge, images and resources.

When certification takes place in countries that promote sustainable forest management, participation of civil society and secure land tenure for local stakeholders, certification has proven more effective (Richards 2004). This is the case in Brazil where new measures have positively impacted producers' livelihoods and species management (e.g., the 1999 Chico Mendes Law in Acre, Brazil; see Box 23).

Box 23 – Policy in Support of NTFP Harvesters: The 1999 Chico Mendes Law

In Brazil, the 1999 Chico Mendes Law created an environmental and social subsidy for rubber tappers to favor pro-forest, pro-poor development. The initiative was designed as an innovative financial incentive to help the rural population of Acre, not only tap rubber, but to diversify the base of their extractivist activity using the rubber trails as a natural pathway to a variety of other NTFPs. During a time of decreasing rubber prices, the law has been critiqued on the grounds that it attempts to revive an anachronistic industry. By contrast, the law has also been viewed as a progressive policy to directly pay rubber tappers for environmental services associated with keeping forest cover intact.

This law provides rubber tappers in the state of Acre, Brazil with an additional payment per kilogram of rubber extracted. The payment is in recognition of the environmental services and related economic benefits of retaining forest cover. To receive the monetary benefit, tappers must belong to a producer association or cooperative. The law was created to stabilize extractivist populations by supporting their principal economic activity. Additional goals of the law include:

- To stem rural-urban migration and retain a rural workforce for current and future sustainable forest development
- To promote organization and administrative capacity of rubber tappers and facilitate marketing
- To improve rubber quality through more intensive monitoring and documentation of rubber transactions
- To facilitate documentation and legal authentication of the rubber tapper service required to receive future federal retirement benefits.

Some evidence shows that the law is achieving its desired objectives. Since 1999, when the law was enacted, state rubber production more than tripled. From 1998 to 2001 the number of tappers has increased from 1,480 to 6,154. In addition, 30% of all 87 cooperatives were created since the Chico Mendes Law. The impact of such additional income increase at the household level can be substantial.

Source: Kainer, K., Schmink, M., Leite, A., and Fadell, M. 2003. Experiments in Forest-Based Development in Western Amazonia, Society and Natural Resources, 16:869-886

In the Brazilian context, local and national governance structures attempting to curb illegal logging have also helped timber and NTFP certification to flourish. Governments working with certifiers can make use of the consultations that develop guidelines and can draw upon the final text of guidelines to improve the laws and policies regulating NTFPs. For example, the 20 multi-stakeholder meetings held to develop national certification standards in Brazil helped spur a national dialogue on sustainable forest management, the rights of harvesters and the need for social equity (Viana 2003). Interest in better NTFP regulation around the world has promoted governments, community organizations, NGOs and others to address the poor regulatory framework for NTFPs.

Box 24 – Regulatory Framework Amended for NTFPs – Promoting Community Forest Management and Certification in Brazil

External factors and changes in governance throughout Latin America, specifically Brazil, have contributed greatly to the evolution of certification throughout the region. Pro-poor pro-forest initiatives are helping to lay the legal foundation to allow certification to flourish. The 1992 Earth Summit held in Rio de Janeiro catalyzed pioneers in the private sector to seek environmental sustainable ways of doing business. Some Brazilian industries interested in certification, such as Klabin Pulp and Paper, Ecolog and Natura, demonstrated prior commitment to sustainability and social equity, having built these values into their mission statements, but certification offered an immediate and practical means to put these values into practice. By 1997, the Brazilian FSC Working Group was created, with 18 organizations representing social, environmental and economic interests. During the last two years, Brazil's FSC Working Group, The Brazilian Council for Forest Management (CBMF) has continued to develop standards for Brazil nuts, non-timber forest products in the Atlantic forest and standards specifically for small producers (Freitas 2003a).

Working toward sustainable forest management required negotiations with the federal government and state agencies to alter legislation to facilitate and make community forest management viable. Certain requirements were relaxed regarding documentation as proof of land title and rules for preparing management plans were simplified. In addition, certification standards were adapted to make them more appropriate to community forest management. As part of this process, field trials were conducted in different forest types and development of specific standards for community forest management in the Amazon region (Azevedo and Freitas 2003).

Disputes regarding land tenure have paralyzed some of the sustained efforts to promote certification in Bolivia (see Box 15). Disregard of land disputes has also featured in some certification operations near small-scale landholders bordering forested areas (Johansson et al. 2000), but if done properly, certification can offer communities a means to challenge companies and others regarding land and resource rights. For example, in 2002 the Brazilian pulp and paper company Klabin expanded the management area included in its certification assessment to incorporate local communities; this led to resolution of land tenure disputes while also guaranteeing additional volume of certified material (see Box 24).

Getting the NTFP regulatory framework 'right' is a complex and difficult task, often resulting in unintended consequences. Drawing government attention to NTFP trade can create fewer benefits and less control for local producers and harvesters dependent upon NTFPs for their livelihoods (Arnold and Ruiz-Perez 2002; Laird et al. in press; Purata case study; Wynberg and Laird, in press). On the other hand, better and more visible organization of rubber tappers in Acre, Brazil under a new law has improved earnings and production (Kainer et al. 2003; see Box 23)

Box 25 – Legal and Institutional Obstacles to Certification for Mexican Wood Carvers

By Silvia Purata, People and Plants International

The central valley region of the state of Oaxaca in southern Mexico is the source of carved wooden figures known as *alebrijes*, which are distinguished by their bright colors and intricate patterns. The wood used to carve these figures comes from various species in the genus *Bursera* locally known as copal. Growing demand is leading to increased wood harvesting and resource depletion at ever-increasing distances from the principal artisan villages. As support to a community wood carving initiative, a group of researchers worked with communities to determine sustainable off-take of *Bursera* species. They based their preliminary recommendations on studies of population structure, growth, and harvest trials with various frequency and intensity of off-take. Post harvest they assessed the effect of extraction on the growth and regeneration of remaining trees. For this system to work, however, a number of legal and administrative obstacles need to be overcome and a facilitating policy framework put in place. While the group was able to generate the necessary ecological data through field trials, legal issues presented another obstacle. By Mexican law, any small producer extracting and selling timber or non-timber forest products must have a formal management plan produced and approved by an accredited forester. Bureaucratic and costly delays in the process of approving the management plan took one year. An additional difficulty to overcome is that there is currently no demand for “good wood”. Tourists are unaware and uninformed of any ecological linkage when they purchase their colorful souvenirs from Oaxaca.

Source: Woodcarvings from Oaxaca, Mexico, Purata et al. 2003.

BROADER APPLICATIONS FOR STANDARDS AND CERTIFICATION

As we have seen, NTFP certification offers many opportunities as well as challenges. For a narrow suite of internationally-traded, high-value species, it can offer producers, companies and to consumers a tool to sell and purchase products that are sustainable and equitable. The process of developing NTFP certification can also produce a range of spin-off benefits for the environment and rural people. Development of standards requires a consultation process that in many regions has produced dialogue among government, NGOs, researchers and community groups about the nature of equity in trade and what constitutes sustainable and socially responsible business practices and management of resources. Contentious issues like land and resource rights have featured in these discussions, as has the nature of benefits accruing to different actors along the chain of custody. Attention has been paid to the complexities of ecologically-sound management and the need for social structures that support, rather than undermine, communities involved in trade. The involvement of civil society in the process of developing forest management standards in countries like Brazil, for example, is reported to have empowered marginalized groups and has the potential to impact forestry far beyond certified operations (Freitas 2003b).

The process of developing guidelines and standards for certification can also have a much broader range of applications which are complementary to certification and in many cases more appropriate and effective. These include (Laird and Pierce 2002):

- Wild-harvester guidelines and education programs that work through herbalist, harvester and other groups; examples include the United Plant Savers and Rocky Mountain Herbalist Coalition guidelines in the United States (Rocky Mountain Herbalist Coalition and UPS); similarly, Phytotrade Africa has developed producer guidelines for a wide network of producers across Southern Africa;
- Corporate policies that define what constitutes sustainable management and details ways that harvesters should benefit from the trade;
- Industry association policies that provide general guidance to members about sustainability and equity in trade and commit industry to core principles;
- Best practice documents for international organizations; for example, the World Health Organization recently developed a Good Agricultural and Collecting Practices guideline for member organizations (GAP) that will complement work on Good Manufacturing Practices (GMP) and harvester guidelines worldwide.
- National and international laws regulating NTFP harvest, use and trade; these measures are often catalyzed by national dialogues of the kind certification provokes. In addition to environmental treaties like the CBD and CITES, which rely on this type of contribution, national and multi-national bodies regulating medicinal plants have increasingly shown interest in incorporating sustainability into standards for quality control, good agricultural practice and other areas. For example, the European Union has expressed interest in endorsing wildcrafting guidelines that would become the basis of legislation.

Setting standards for the management, use and trade of NTFPs has catalyzed dialogue, raised awareness and established a floor for acceptable practice associated with species in trade. Certification and each of the above approaches address distinct activities and actors and create change in unique and complementary ways. National and international laws set broad standards for acceptable practice, while corporate and industry association policies target company-purchasing practices, and wild-harvester guidelines provide technical assistance on sustainable harvesting techniques for individual species. Certification is an important part of this whole, offering alternatives to producers, companies and consumers for a group of species in international trade. In addition, by spurring dialogue and drawing attention to the ecological, social, legal and other issues integral to the sustainable and equitable trade in NTFPs, certification contributes in lasting ways to the evolution responsible practices for the harvest of wild plants.

CONCLUSION

“Certification should be seen as an instrument that can promote forest management and not an end in itself. It is a process.”

(Oswaldo C. de Oliveira the Director of the Rubber Tappers Union in the state of Rhondonia, Brazil Seminario Certificação Florestal e Movimentos Sociais na Amazônia 2002)

NTFP certification is a young and developing concept. There exist but a small sample size of certified products and incipient initiatives. The few cases surveyed in this chapter reveal that NTFP certification entails a generally lengthy and sometimes painful learning process. Certification entails a myriad of requirements described in unfamiliar terms and a lengthy, cumbersome format that is conceptually distant from small holders who are the majority of harvesters of NTFPs. Making certification understandable and accessible to small holders is crucial for NTFP certification to become more broadly available. The future of NTFP certification will, in large part, depend upon the future of small holder certification (Molnar et al. 2003). As it evolves, it will be important to gauge and monitor its effectiveness, particularly the mechanisms which are created to make it accessible and flexible for small holders.

A fundamental first step for international certification is to critically evaluate products and forest management operations that may be appropriate for certification. The tool of certification needs particular governance and market conditions to function and cannot be broadly applied to the class of products labeled NTFPs. Understanding that international certification is a tool with limited use for a select group of internationally-traded NTFPs can improve its effectiveness by preventing implementation under conditions where it is doomed to failure. A careful selection process should prevent frustration on the part of participating collectors, industries, donors and NGOs.

Although international certification schemes are an inappropriate tool for the majority of products and small producers, the principals embedded in certification – social equity and environmental sustainability – are values that customary management systems have embodied for centuries. Local harvesters have an intimate relationship with the plants that they rely upon for food, medicine and shelter, testing and adapting management traditions to ensure their supply (Titkin 2004). In the case of chicle, maple syrup and rattan, it is long-held knowledge embedded in local management practices than informs the creation of the most workable guidelines for sustainable management.

The effectiveness of certification will not likely be measured by the number of labels, products or hectares certified but rather by its conceptual influence and the broader initiatives it helps to spawn. Bold redefinition and reassessment of the aims and scope of NTFP certification could make it more useful to a wider range of small holders by focusing on enabling conditions and broader efforts to legitimize and value NTFPs. For example, NGO and research efforts to support sustainable management should help harvesters to document and monitor management practices for not only the charismatic export species, but also for a broader suite of valuable, locally important NTFPs. Forestry operations and forestry training programs could routinely include top-selling and locally valuable NTFPs as part of their inventory procedures. In addition, to generate meaningful and rigorous national statistics on the value of forest products in trade, studies of forest product markets need to be broadened beyond timber to include a full range of widely sold species.

For the majority of products and small holders left out of the current certification arena, it is important to recognize that the goal is not the seal, but sustainable management. Even without pursuit of a label, the promotion of sustainable practices by certification can indirectly add value to local and indigenous management systems – most of which have been ignored and/or undervalued by researchers

Small-intensity harvesters have called certification not a silver bullet, – but a ‘black box’. In many community-based forest management projects, the incentive for certification has not come from NTFP harvesters, but has been top-down, fully financed by donors and industries and implemented by NGOs as a built-in project objective (Amaral and Neto 2002). This is the case even when it is clear that the fit is inappropriate and the timetable an impossibly accelerated one, based on project milestones and donor demands. Redressing certification to avoid such calamities will demand recognition of its limits. It will also demand exploration of more broad-based instruments and locally generated initiatives which will reduce costs and ensure ownership.

The impediments to NTFP certification are many. They include a lack of knowledge about species biology, ecology and management, complex trade chains, unorganized and powerless producers, poor working conditions, illegal or quasi-legal harvest and an inability to pay for certification. Certification systems are still young and evolving and have yet to address the topic in a flexible, practical manner. Few businesses and consumers are open to certification messages, and markets for certified products are narrow. Furthermore, in order to flourish, NTFP certification requires political support, social stability and the existence of strong local institutions. Research to date suggests that species with large, established markets will be the best candidates for NTFP certification and that further education efforts are sorely needed.

Efforts over the last five years to realize NTFP certification in practice have yielded a number of important lessons. Perhaps foremost is the importance of realistically assessing the role that certification can play for this category of products, most of which are consumed on a local basis and are not candidates for market-based tools of this kind. Also important is the need for integration and collaboration among the wide range of standards-setting agencies and certifiers addressing this class of products (e.g. organic, fair trade, ecological, quality-control assessors). And throughout it is critical that NTFP certification, while promoting consistency and credibility, incorporate the complexities inherent in addressing such a diverse set of products and production contexts. Additional critical analysis of research and development directions is required to ensure that market-based incentives for forest conservation, such as certification, do not overshadow other critical rural livelihood issues such as preserving the safety net functions of forests.

RECOMMENDATIONS

ACTIONS THAT FSC AND CERTIFYING BODIES CAN TAKE

Integrate NTFPs into timber assessments

Heightened awareness of the role of NTFPs in forest use and management could encourage timber certifiers to press for the retention of those species which are critical for subsistence livelihoods and local trade as well as those which are more valuable for their non-wood products than for their timber. Game-attracting species are often highly important for local communities and need also be taken into account. Optimally, certifiers will recommend that NTFPs are factored into harvest planning and felling operations, silvicultural treatments and management plans.

Promote realistic assessments of the costs and benefits of certification

International certification schemes will be applicable for only a select number of NTFPs under particular governance and market conditions. For both timber and non-timber forest products, experience suggests that there are both opportunities and limits that need to be carefully considered before setting certification as a goal.

Promote accessible forms of certification and cost-saving measures to include small holders

If standards are to have a suitable and lasting impact for NTFPs, they must be affordable and flexible enough to be applied to the many small-scale traders and producers who provide the bulk of the industry's raw materials. Efforts underway to make certification more accessible and affordable to small-scale producers and rural inhabitants need to be field-tested, revised and integrated into current standards and guidelines for eventual widespread application.

Retrain forest managers and certifiers in forestry that embraces livelihood concerns, including the ecology, use and management of NTFPs

Traditional forest management focusing solely on timber can undermine livelihoods of not only rural forest-reliant communities but also of increasing numbers of urban consumers worldwide who use and trade in forest goods. To effectively manage forests for use by local, regional and national stakeholders, certification programs will need to train a new cadre of professionals to give greater attention to non-timber forest products. Training forest managers and certifiers in the basics of NTFP ecology and use as well as regular inclusion of NTFPs in forest inventories are important steps in moving towards more holistic forest management.

Increase collaboration among various certifying bodies

Most sustainability standards-setting groups lack expertise in issues of importance to manufacturers, such as quality assurance, methods validation, sanitation and active constituent analysis. Industry-produced standards reflect little knowledge of, or attention to, sustainable and equitable sourcing. A free-flow exchange of

expertise between these groups is essential. Experts from industry groups should be invited to attend sustainability and fairtrade standards-drafting committees and vice versa.

Investigate the potential of mutual recognition programs

Few certification initiatives in the NTFP sector offer mutual recognition between programs. It is important to work toward harmonization of standards within accreditation systems as well as cooperation between accreditation groups with overlapping remits to insure consistency of interpretation and application. Greater efforts at achieving mutual recognition between programs may result in cost savings, clearer public messages and a streamlining of standards and applications.

Implement more trial joint assessments

Joint assessments have great potential value, for they can lead to: a) sharing of lessons, assessment methodologies and knowledge in the field; b) potential cost savings for clients who would otherwise have to pay for multiple separate assessments, and; c) the eventuality of mutual recognition between programs or the development of more formalized joint assessment programs.

ACTIONS THAT GOVERNMENTS CAN TAKE

Remove regulatory burdens

Market barriers for NTFPs should be deregulated and access rights, tenorial regimes and responsibilities over NTFPs should be clarified.

Support the establishment of training centers for forest management

The role of such institutes could be enhanced through interdisciplinary curricula and inclusion of key actors and information from the health, education, agriculture and legislative sectors.

Influence corporations

It is necessary to strengthen actions that increase the market pull for certified products both at the corporate and consumer level. Governments need to create regulatory and financial incentives and other due diligence mechanisms to encourage industries to trade in certified products.

ACTIONS THE PRIVATE SECTOR CAN TAKE

Stimulate the creation of local and regional brands

In many instances a local or regional label is appropriate. Locally driven efforts to produce sustainable products merit attention and support.

Assist small producers

Companies can help build capacity within small producer groups to supply the volume and quality required over time and can help build the necessary infrastructure to undertake the certification of products. Companies might consider working cooperatively with suppliers to phase-in certified lines of NTFPs as they become available.

Educate consumers regarding standards for products sourced from forests

Donors and NGOs promoting certification have largely focused on the supply-side of the issue. However, successful certification depends upon an informed and concerned citizenry. Industry groups and NGOs need to adequately educate consumers about pressing issues regarding forest products, such as sustainable and equitable sourcing, quality assurance, safety, efficacy and the importance of standards in addressing these issues. The number of labels on forest products, particularly botanical products is large and growing daily. If consumers are not better informed about standards, standards-setting groups and the distinction between reputable and bogus claims, little will be gained from the current flurry in standards-setting initiatives.

ACTIONS THAT CONSERVATION AND DEVELOPMENT NGOS CAN TAKE

Recognize that the process leading to certification is useful with or without attaining a label

Communities and industries have benefited from frank appraisals of sustainability and equity issues regarding sourcing forest products. Increased documentation and communication between stakeholders involved in NTFP collection and sale can improve management practices and marketing links.

Reevaluate the scope and aims of certification to discover what aspects of the tool may fit

Certification is made up of a complex array of activities and beliefs. While the heavy administrative burden is undesirable and impossible for the majority of low intensity producers, there may be other aspects of the tool of certification that may affirm customary systems while offering new ideas regarding monitoring and management.

Remember that the goal is sustainability

The majority of NTFPs which are inappropriate for international certification can benefit from the attention and value that certification brings to sustainable forest management. For most harvesters of NTFPs, consideration of sustainable off-take is part of informal everyday management practices built on customary systems. Such systems need documentation, testing and validation with or without a label as the outcome. Success should be measured not by the fact of achieving a label but achieving sustainability.

ACTIONS THAT DONORS CAN TAKE

Reduce expectations and consider more broad based solutions

Certification has been strongly subsidized and promoted by private foundations, multi-lateral donors and NGOs. As a sophisticated, specialized tool, it is not widely applicable for the majority of NTFPs or forest enterprises. More broad-based solutions are needed to conserve forests and ensure access to wild resources for the world's poor.

Partner with other efforts to promote sustainability

Certification is one tool among many that seek to address resource management issues related to NTFPs. Producer cooperatives, harvester training programs, direct brokerage and marketing efforts towards domestication of key species and other endeavors will complement or be more practicable in many cases than certification.

Support local and national incentives towards creation of guidelines and sustainable forest management

While international schemes may be too ambitious for many groups, potential applications of certification exist at a gradient of scales. These include initiatives such as national legislation for SFM, state support for farmers markets and locally developed wild harvested guidelines. These initiatives may be born out of a flat rejection of international certification schemes, however, grass roots initiatives, custom fitted to the needs of the particular producer group, can offer important lessons for donors, NGOs and researchers. Rather than being seen as competitors, such initiatives can be viewed locally grown solutions that may use the international concept as a spring board.

Promote consumer awareness

While consumer awareness of destructive logging has been heightened in recent years, few people are aware of or concerned about harmful harvest of other forest products. Many consumers assume that NTFPs are inherently "green" products that promote forest conservation. Multilateral agencies, governments, certifiers and NGOs need to raise public awareness about the ecological and social importance of other forest products and highlight the vulnerability of many currently traded species. Only with strong consumer demand – of the type generated in Europe through widespread campaigns – are companies likely to become proactive in seeking out sustainable sources.

ACTIONS THAT RESEARCH INSTITUTIONS CAN TAKE

Identify the key species under threat

Key species under high demand by the international market that are becoming vulnerable to exploitation need to be identified for study. Long-term data is needed on post-harvest impact assessments to determine the impact of various extraction practices over time. Species under significant threat (including long-lived species

and those of which the bark or root is harvested) should receive priority attention. Some examples of species meriting attention include pau d'arco (*Tabebuia* spp), devil's claw (*Harpagophytum procumbens*), yohimbe (*Pausinystalia yohimbe*) and marapuama (*Ptychopetalum olacoides*).

Identify and value local management systems

Local knowledge of traditional management practices is extremely valuable. Participatory research with local communities should focus on the field-testing of management practices to determine those that promote long-term viability.

Evaluate policies that impact NTFP trade

Critical analysis of policies that enhance or impede sustainable sourcing and trade of forest products can help to make visible the consequences of policies which negatively impact forest product collectors and traders. Research is needed to identify, document and disseminate examples of policies which encourage sustainable sourcing, use and trade of forest goods.

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