Topic 5: Forest certification and rural livelihoods

Certification of non-timber forest products: Limitations and implications of a market-based conservation tool

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SUMMARY

Non-timber forest products (NTFPs) play an important role in rural livelihoods worldwide and recent efforts to certify NTFPs raise questions about the impact of this market based tool on local producers and communities. Drawing from case studies in Latin America, we find that there are many impediments to the successful implementation of NTFP certification. These impediments range from unorganized and powerless laborers to basic difficulties in commercializing NTFPs to undeveloped demand for certified products among businesses and consumers. However, the process of creating NTFP certification standards may create positive ripple effects among producers, traders, companies and policy makers by planting the seeds for a vision of more socially and environmentally responsible management of NTFP resources. We conclude that the ability of certification to indirectly leverage wider social change may prove to be of greater lasting impact to rural livelihoods and NTFP management than mere labeling and marketing.

INTRODUCTION

Hunting and gathering are two of the oldest and most basic relationships between humans and the natural world. Contrary to popular perception, hunting and gathering continue to be widely pursued in rural areas across the globe, particularly within forested ecosystems that provide food, fibers and medicine for subsistence use and for trade. According to the Canadian International Development Agency (CIDA, 1992), non-timber forest products (NTFPs) "are an integral part of the livelihood of the 500 million people who live in or near tropical forests." While this number is likely a low estimate, and does not even reflect the large number of temperate and boreal forest users, it nonetheless provides a good indication of the scale and importance that forest resources play in the lives of rural people.

Over the past two decades, NTFPs have received significant attention for their potential to conserve forests, particularly tropical forests, and, through economic development initiatives, enhance rural livelihoods. Promoting NTFP commercialization as a conservation and rural development tool has proven to be controversial, however. Researchers have questioned the value of creating NTFP extractive reserves (Browder, 1992), the viability of marketing rainforest products (Dove, 1994; Crook and Clapp, 1998; Southgate, 1998), and the wisdom of incorporating NTFPs into rural development strategies (Emery, 1998). Homma (1992) concluded that NTFPs form an unstable economic base for rural people and theorized that NTFP collection pressures bring about one of two fates: over-exploitation and plant population decline, or replacement by systems that offer cheaper economies of scale, principally domestication or synthetic substitution. Homma's hypothesis is not valid when applied to local and subsistence use of NTFPs, however it points to some of the fundamental difficulties in NTFP commercialization, and the incorporation of NTFPs into rural development schemes.

Recently, NGOs and donors have promoted green certification as a market-based tool to support environmentally sensitive production practices in the forest industry. Hundreds of millions of hectares of forests have been certified worldwide for timber production, and groups are now certifying NTFPs. Most western consumers are already familiar with certification at some level through exposure to organic foods, fair trade products, electronic products bearing the Underwriter's Laboratories seal in the U.S. or government food inspection programs. Certification involves audits of merchandise to insure that production and handling processes meet specific standards. Those products that meet certification standards can be labeled in the marketplace, thereby allowing companies to position their products as distinct from a competitor's product and giving consumers a chance to purchase goods that adhere to specific environmental, social or sanitary standards.

A range of certification systems can be applied to NTFPs. Some of the most widely available systems offering consumer labeling of NTFPs include sustainable forest management by the Forest Stewardship Council (FSC), fair trade by the Fair Trade Labelling Organizations (FLO) and organic production by the International Federation of Organic Agriculture Movements (IFOAM). Each of these certification systems has developed its own standards that concentrate on different aspects of NTFP production and trade. Yet innovative efforts exist to integrate different systems are also underway (see www.isealalliance.org). For example, joint assessments to provide multiple labels

wherein assessors from different systems cooperatively implement an audit using the guidelines from their respective systems. This paper focuses on lessons from the Forest Stewardship Council, a certification system which includes environmental, social and economic standards for forest management.

In this paper, we describe some of the specific conditions that are necessary for certification to provide benefits for conservation and rural livelihoods. We do not attempt a systematic evaluation of the complex topic of NTFP certification but rather focus on fundamental social, ecological and economic impediments to NTFP certification and alternative uses of the tool for broader benefit. First, we address the question: To what extent are market based conservation incentives, specifically certification, inherently contradictory to NTFP collection and smallholder management systems? We do this by examining attempts to certify a variety of products by different producer groups. NTFP certification has only been available under the FSC system for half a decade and there are relatively few case studies from which to draw lessons. As the concept is applied over time, some of the hurdles that case studies illustrate may be resolved. Other, inherent contradictions between NTFPs and certification are likely to remain. We believe that these contradictions are often ignored and call for increased consideration by donors, researchers and the conservation community.

Secondly, we ask: What are the broader implications and potential utility of standards and guidelines beyond certification? Because NTFP certification is likely to apply only in specific circumstances, it is important to build on the substantial foundation that has been invested in developing the tool to assess its more subtle, indirect benefits. Such benefits may include, increased industry accountability toward sustainable sourcing, increased harvester awareness regarding the need for a long-term product supply and consumer awareness of conservation issues involved in buying responsibly. It is also important to consider use of the concept of standards and guidelines not only toward acquiring a seal, but also toward reaching the goal of responsible forest management through spin-off tools such as harvester training curricula, producer guidelines, industry association standards, and templates for proposed legislative action.

We first describe fundamental impediments and opportunities in certification, grouped by five principal themes: the products themselves, the rural context, the producers, the certification system and finally, market and financial considerations for producers. We then briefly discuss the implications of certification and standards in the broader context of conservation and rural livelihoods. In closing, we call for a more realistic assessment of the role that certification can play in NTFP and livelihood issues and we urge for better integration between standard setting agencies.

METHODS

This paper draws on a series of research projects that sought to examine the ways NTFP certification and market-based tools to promote social and environmental change might work in practice. The first (1998-2000), explored the feasibility of NTFP certification, and involved drafting generic guidelines and indicators for NTFP certification, developing verifiers by plant class or part, and then field-testing at three sites – Brazil (Palm hearts [*Euterpe oleraceae*]), Bolivia (Brazil nuts [*Bertholletia*

excelsa]) and Mexico (chicle [*Manilkara zapota*]). Species profiles for both temperate and tropical NTFPs from around the world were collected in order to expand understanding of the social, ecological, marketing and technical aspects of certification for a broad range of species (Shanley *et al.* 2002).

To monitor the progress of incipient NTFP certification initiatives, a meeting was held in February 2003 in Belem, Brazil where representatives from NGOs, research institutions and certification organizations from Mexico and Brazil presented case studies of experiences with NTFP certification to date. Participants offered innovative examples of NTFP certification involving small holders, discussed the costs and benefits of NTFP certification and offered recommendations to make it more effective. In addition, individuals from Africa, North America and Asia contributed written case studies on the potential for NTFP certification to contribute to rural livelihoods.

THE PRODUCTS

Non-timber forest products are not ideal certification candidates. Many are relatively low-value goods with small profit margins whose collection and trade systems are not well suited for wide scale commercialization. Those appropriate for certification will be few in number, and likely restricted to well-known species with large markets, e.g. palm hearts, bamboo, rattan, spices, and some medicinal plants. NTFPs used primarily for subsistence, or traded in small, local markets where poverty all but negates the ability of certification to be an effective instrument, will not be good candidates for certification. This does not mean that certification should ignore such products or cannot produce indirect benefits for such NTFPs. To the contrary, forest certification programs need to pay special attention to the subsistence use of forest resources in local communities and seek to insure their continuance. As better NTFP certification criteria are created for the charismatic, export commodities found in international trade, trickle down effects of best management practices may help local gatherers conserve the forest resources they depend upon.

Many NTFPs flow through complex and informal chains-of-custody on their way to market, making tracking difficult and the risk of mixing with non-certified products high. The quality and quantity of NTFPs can also be highly variable, traits considered undesirable in the global marketplace. Investigating markets for Brazil nuts, Clay (1992 p. 306) notes, "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."

Species selection is an important consideration when appraising the potential of NTFP certification. Under the right conditions, certification could help support or revitalize NTFP sectors that have persisted in industrialized nations, such as the maple syrup (*Acer saccharum*) industry in Canada and the USA and the cork (*Quercus suber*) industry in the Mediterranean Basin. NTFP certification of species such as Brazil nut (*Bertholletia excelsa*) may bolster initiatives aimed at conserving large areas of semi-intact tropical forest (Ortiz, 2002). Certification of flagship species in specific sectors, such as wild ginseng (*Panax* spp.) in the botanicals industry, could also help draw attention to resource conservation issues and prompt wider conservation awareness in the private sector (see Robbins, 2002). Species selection alone will not guarantee

success, however, as markets and socio-political settings often influence certification's ability to create positive change.

THE RURAL CONTEXT

The socio-political landscape of rural communities influences NTFP harvest and sustainability as much as the physical landscape. National and local laws that ignore or work against local tenure and management systems can undermine rural livelihoods that are based upon NTFPs by favoring alternative land uses or creating disincentives for NTFP management. As a voluntary, non-binding mechanism, certification has little formal power to influence political and social change, although informally it has fostered change in a few notable cases.

Basic legal and technical factors limit the applicability of certification. 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.

However, local actors and institutions can create a social and political environment that supports NTFP management, and perhaps, the potential for beneficial NTFP certification. In the Mata Atlantica region of Brazil, which has lost more than 95% of its original forest cover, local NGOs have banded together to prevent further forest loss and promote land uses such as gathering of NTFPs that retain forest cover. As a result, IMAFLORA (Institute for Agricultural and Forestry Management), a local Brazilian forest certification organization, is now undertaking nearly twenty certification assessments of NTFP operations in the area. In the northern Brazilian State of Acre, a recent federal law (the Chico Mendes Law) and additional governmental initiatives have helped to promote forest-based development and NTFP management by providing legal, technical and economic assistance to local communities including: subsidizing the price of rubber; promoting applied research to boost rubber production; and guaranteeing a market. Local groups in Acre are now examining the potential for certification to facilitate market access and gain premiums.

Certification has also offered communities a means to challenge companies regarding land disputes, access and property rights. Although non-acknowledgement of land disputes has been recorded during certification operations near small-scale landholders bordering forested areas (Johansson *et al*, 2000), certification can act as a catalyst to begin the process of granting land tenure for collectors where none previously existed. For example, the Brazilian pulp and paper company Klabin extended its management area to third party collectors, thus providing for resolution

of land tenure disputes while also guaranteeing additional volume of certified material (May 2002).

In addition, some certification schemes are catalyzing innovative relationships among timber companies, industries producing NTFPs and communities. Magama, a Brazilian company producing essential and fixed oils, has developed a partnership with the timber company Mil Madeiras whereby they collect wood left behind after timber extraction for the extraction of essential and fixed oils. Magama is also planning to develop partnerships with forest communities – that would not exclude those lacking land tenure. They plan to hire an interdisciplinary team, which will include a forester and sociologist, to conduct research within forest communities and, on this basis, develop a management plan for collection of a wide range of fruits, oils, wood and bark. Products collected from areas with specified land tenure would be potentially certifiable, while those from land lacking land tenure would be sold to buyers not requiring certified raw material.

THE PRODUCERS

Rural residents who rely on NTFPs for their livelihoods are often poorly organized and 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 *et al.,* 2002). For such actors, certification requires a marketing sophistication and an institutional and administrative infrastructure that is far beyond their reach. The technical demands of management plans and monitoring protocols, 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 loath to comply with the additional 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 (Shanley *et al*. 2002).

In cases assessed to date, the social complexity of NTFP operations has been deemed to be more difficult to surmount than the ecological complexity (Pierce, 2002). Harvester living conditions, levels of education and working conditions are often sub-standard. Child labor, lack of health care, debt peonage, and difficult or dangerous working conditions are an intrinsic part of some NTFP gathering systems and pose potentially insurmountable impediments for certification. Formalizing NTFP harvests may also 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).

For persons who live “on the edge”, forest products represent an activity with no barriers to entry and no start-up costs -- only labor and time. 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. 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.

In some cases, however, certification may provide a platform to spur social change and raise awareness. Nelson *et al*. (2002) for example 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. A database of families providing palm heart to a large industry in the region was created as a step to map out sourcing and provide greater visibility of collectors. 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).

Cases of chiclé certification in Mexico, palm heart harvest in Brazil and medicinal plant collection in Namibia demonstrate how, either directly or indirectly, certification can reinforce and strengthen cultural and social norms involving NTFP harvest and sale, validate good management, and provide benefit-sharing agreements between communities and buyers. An example of organic NTFP certification that benefited from investment in improved social organization is that of 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.,* in progress).

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 sold currently 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 (Lombard *et al.,* in progress).

THE CERTIFICATION SYSTEM

Certification of NTFPs will involve a complex web of social, legal, ecological, economic and technical elements, and a range of stakeholders and actors including producers, certifiers, and companies. If even one set of elements, or the concerns and priorities of one group of stakeholders, are overlooked, fatal weaknesses will result. In Mexico, poor market access hobbled Mexican chicle producers' ability to sell certified chicle. In the botanicals industry, the plethora of labels dominating the botanicals and personal care industries has the potential to drown the message of an FSC NTFP label. And ignorance of the vital issue of safety net functions of forests can mean that certification draws labor and resources away from communities, and in the end results in compromised, rather than enhanced, livelihoods.

To date, NTFP certification has been conducted on an *ad hoc* basis, following the particular leanings of certifiers, companies, donors, and producers. Of the eight accreditation bodies of the FSC, three have carried out NTFP certifications: SmartWood, Soil Association and SGS Qualifor. NTFPs that have been certified under the FSC umbrella are listed in Table 1. Efforts are also underway to certify rattan in Indonesia (de Beer, pers. comm.), and woodcarvings in Kenya (Cunningham and Schmitt, in progress) and Mexico (Purata *et al*., in progress).

Table 1. Products certified as of October, 2002 using the FSC label (from Brown *et al.*, 2002)

Product	Use	Scientific name	Country	Funding
Chicle (latex)	Ingredient in chewing gum	*Manilkara zapota*	Mexico	Donor/industry
Maple syrup	Sweetener	*Acer saccharum*	USA	Industry
Palm heart Acai juice	Food Beverage	Euterpe edulis	Brazil	Donor/Industry
Oak tree bark	Incense	*Quercus robur*	Denmark	Industry
Brazil nuts	Food	*Bertholletia excelsa*	Brazil	Donor
Venison	Food	*Cervus elaphus*	Scotland	Industry
30 species of plants	Ingredients in cosmetics	30 species	Brazil	Industry

NTFP management is still in its infancy and is testing different methods of operationalizing the concept during assessments. One fundamental obstacle to implementation is the lack of basic ecological information about NTFP life cycles, reproduction, density and distribution. In addition, critics have voiced concerns that forest certification criteria are too timber-oriented and do not adequately address NTFPs. Concerns have also been raised that forest management assessors are not appropriately trained in managing and assessing NTFPs. Yet these challenges to NTFP certification also point to the need for certain improvements in forest management, including better integration of timber and non-timber production, recognition of the role of NTFPs in rural livelihoods and improved understanding of their ecology and management.

Certification systems have rigidities that can be particularly problematic when applied to NTFPs. For example, a wood carving project in Kenya found it difficult to secure FSC endorsement of their products because the FSC system was ill-prepared to create flexible policies that would allow for exotic trees raised on farms by multiple owners to be recognized as a single production unit. Development of "group certification" models is permitting the inclusion of dispersed smallholders and their products, but the process is still young and undergoing revision. 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 further complexities which the FSC system has yet to address because it is an area-based system and not a product or harvest-based system.

MARKET AND FINANCIAL CONSIDERATIONS FOR PRODUCERS

NTFPs supply the raw materials for a diversity of industries and local and regional markets that are not open to 'green' or 'fair trade' messages. 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. Thus using a formal market-based tool such as certification for goods such as NTFPs, the majority of which are directly used or locally traded in informal economies, presents an immediate incongruity.

Consumers in developing countries, where many NTFPs are gathered, cannot afford the premium that certification implies. To date, only educated consumers in a small number of developed countries have shown interest in eco-labeling. Yet even in such countries, knowledge of certification in the consuming public is limited. A producer of certified maple syrup in the United States reports that the FSC label has provided no additional value to his product because the label is unknown to the majority of consumers, while an organic label has helped his sales slightly (Pierce, in progress). This finding illustrates three drawbacks. First, producers need to thoroughly research the limitations and benefits that a certification program offers for their product. This entails basic economic calculations and projections to determine whether the NTFP resource base will be able to withstand increased demand, whether the market will sustain increased supply and whether buyers will demonstrate a clear preference for certified products. Since markets for many NTFPs are transitory, a certain amount of risk is unavoidable. Second, consumer education by certification organizations, NGOs and others, is necessary if eco-labeling is to foster change in the marketplace and thereby create incentives for conservation. Third, many consumers perceive NTFPs to be "natural", "hand made" or otherwise intrinsically "eco-friendly" (because, conceptually, their harvest rarely precipitates deforestation) and are unlikely to respond to certification unless educated about NTFP sustainability issues.

In the NTFP certification cases surveyed, the promised "premium price", and in many cases market access, have yet to become a reality. For example, in Mexico, certification did not ease the multi-year slump in chicle sales and did not provide the hoped-for market access. Lombard *et al.* (in press) report that in Southern Africa, the botanicals industry has not demonstrated significant demand for more expensive, high quality, certified medicinal plant starting materials for herbal remedies. Incipient cases of NTFP certification to date demonstrate that successful initiatives are subsidized by either sales of another product within the same industry (e.g. timber), or

by donors. The same is generally true for smallholder communities that are producing certified timber. Thus for some products, certification has not yet lived up to its billing as a purely market-based tool but is rather artificially supported by interested parties hoping to influence the wider marketplace of ideas.

However, some forward thinking industries are investing in building direct partnerships with communities to establish reliable and sustainable sources of raw material. This is particularly true in Brazil, in large part due to the educational and technical support offered by numerous NGOs, including: IMAFLORA (Institute for Agricultural and Forestry Management); IMAZON (Institute of Man and the Environment)' and IFT (Tropical Forest Institute). These groups have actively created opportunities to inform industry executives about the benefits of sustainable sourcing, adapted timber guidelines to include NTFPs, worked with ecologists to develop species-specific protocols for sustainable harvest, facilitated bridge-building between scientists, communities and industry executives and conducted market surveys of demand for certified timber (Veríssimo and Smeraldi 1999). Some examples of Brazilian industries which are experimenting with various models of community/industry linkages and certification include: *Natura,* specializing in the manufacture of personal care products, *Croda*, a manufacturer of essential oils and *Magama*, a producer of essential oils.

BEYOND LABELING: BROADER IMPLICATIONS OF NTFP CERTIFICATION

NTFP certification can promote conservation and economic development for smallholders and NTFP harvesters but is likely to succeed only with a narrow suite of species and only within exceptional economic, institutional and political contexts. However, the process leading to certification, including the design of standards and guidelines for sustainable harvest of forest-based products, can yield other potentially important spin-offs, and can help producers, companies, and others take a host of small, intermediary steps toward resource conservation and responsible commercialization of NTFPs.

One of the more valuable products to result from the development of standards to date is producer guidelines. At the local level, where harvesters directly impact plant populations, simple, practical guidelines can help ensure continuity and supply of raw material, and catalyze communication about sustainable management amongst buyers and other producers. For example, SANProta/CRIAA in Namibia have developed guidelines which allow producers to communicate best harvest and management practices to each other. Development of standards can also contribute to building industry association policies, corporate policies, corporate strategies, and other guidelines for sustainably sourced products (Laird and Pierce, 2002a; 2002b). Many NTFP-consuming industries have shown interest in these types of documents, which in some cases could have farther-reaching results than certification and labeling alone – by, for example, creating sector-wide change in attitudes and practices regarding source materials.

International and national level policy processes can also benefit from the development of standards for sustainable sourcing of NTFPs. In addition to environmental treaties like the CBD and CITES, which rely on this type of

contribution, national and international 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. The World Health Organization has also launched a process to develop sustainable harvesting and Good Agricultural and Collection Practice standards for medicinal plants (Pierce and Laird, in press).

CONCLUSION

NTFP certification is a young and developing concept. NTFPs are primarily used by the poor in subsistence and alternative/shadow economies. Certification is a market-based tool rooted in theories and assumptions of the formal, capitalist, international economy. Hence the subject of NTFP certification harbors an internal tension between the needs and roles of the formal and informal economic sectors.

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 also required to insure 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.

NTFP certification may build successfully upon the myriad efforts underway by producer groups, the range of certifiers and accreditors, NGOs, and others, or it might fall victim to the confusion and complexity already evident in this field. Regardless, the movement to set standards for sustainable and equitable production and to build collaboration between producers and the private sector is already catalyzing improved awareness, and possibly practice, on the part of consumers and companies, and helping to inform better NTFP policies and laws. These indirect benefits might in the end prove to be the most significant impact of certification, and will have a lasting impact on the livelihoods of local groups and the management of NTFP species.

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