



Title: Non-wood forest products and income generation...  
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## Requisites for thriving rural non-wood forest product enterprises

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*Some current success stories point up the factors contributing to economic and environmental viability.*

For millennia forests have provided local communities with food, medicine and fibres and with income from trade in these items. Only in the past few centuries has trade in timber and pulp overshadowed these various commodities. Enterprises based on non-wood forest products (NWFPs) have attracted attention for their potential to make forest use more sustainable, both because they extend the range of forest benefits and because gathering and processing activities can be managed by communities near the forest resource, with a greater portion of the end-product revenues returning to those who manage the resource. General discussions of the potential of NWFPs and their international markets have often overshadowed the actual experiences of many community-based enterprises and their success stories, of which several are presented in this article.

### [A market in Malaysia - improved markets are also essential for NWFP enterprises](#)

The main requirements for successful non-wood forest enterprises and sustainable forest management are strong local institutions and clear, supportive national policies (particularly related to land rights and marketing), rather than international markets. Experience suggests that for almost any forest product, international demand alone is more likely to yield only short-term economic gain and to lead to forest destruction.

### NWFP ENTERPRISES TODAY

Although it is still a small fraction of the world trade in timber products, trade in NWFPs is far from insignificant. World trade in medicinal plants alone reaches US\$10 000 million annually (Freese, 1998).<sup>1</sup> Rural economies benefit from the impact of NWFP trade on national economies; for example. Indonesian exports

**of rattan and other NWFPs exceeded US\$134 million per year, and Indian trade is estimated to be US\$1 000 million (Freese, 1998).**

<sup>1</sup> There is no separate trade classification for medicinal plants of forest origin: however, the majority of medicinal plants are harvested from the forest.

**For rural economies and forest management. the great significance of NWFP enterprises lies in regional, national and local markets (see Table 1). The numerous small enterprises involved in NWFPs can foster broader-based economic growth than large-scale timber operations. Earlier this decade in Zimbabwe, such small forest enterprises employed an estimated 237 000 people, compared with 16 000 employed in the country's formal forest industry (Arnold, 1995). Because NWFP harvesting often employs women and minorities to a greater extent than large-scale timber operations, it has potentially greater equity benefits.**

**TABLE 1. Comparison of risks and benefits for markets at different levels**

Type of market	Relative risk to producer	Nature of trade
Local rural markets	Low: low transport costs; market preferences easily accessible	Possibly slow growth; demand for forest products declines as exposure to cheap manufactured products increases
Urban and national markets	Medium: transport costs higher; less information available on market preferences	Potentially fast growth because of urban migration; for traditional products, urban markets can be larger than international ones
Regional markets (neighbouring countries)	Somewhat higher: higher transport costs; more information needed on markets, export-import regulations and tariffs	Potentially strong within regions with shared ecological and cultural features; these deserve more study
International markets	High: frequently requires intermediaries to gain information on product standards; more sophisticated market preferences and international trade rules	Historical tendency to boom-bust sequences of quickly rising demand, followed by swift decline as technologies develop for production of cheaper substitutes

**Source: FAO, 1995a.**

***Some long-standing systems manage non-wood resources by producing products that combine trade and subsistence use. For example, in the late 1800s Sumatran farmers planted local damar (*Shorea javanica*) and native fruit-trees, mainly durian (*Durio zibethinus*) and lansat (*Lansium domesticum*), in their forests (de Foresta and Michon, 1994). The damar's clear resin was exported for use in paint and varnishes, while the fruits were consumed locally.***

***NWFPs are important to industrialized as well as developing economies. Vantomme (1998) notes that in temperate regions pines have been tapped for resins for over two thousand years. Pine nuts, long used in many parts of the world, have become part of gourmet cuisines in Asia, Europe and North America. In the United States' Pacific Northwest alone, trade in non-wood forest resources (Christmas ornaments, mushrooms and other edible products, and***

***medicinal products) reaches at least US\$200 million annually (Hansis, 1998).***

## **FACTORS SUPPORTING SUCCESSFUL NWFP ENTERPRISES**

***Successful enterprises and sectors based on non-wood forest resources and products show a pattern: most involve local incentives, clear rights governing forest use, healthy local institutions and links with stable markets. Emphasis on quality products is also a factor for success (EWW, 1999). Local processing can increase returns through value added, while tapping local knowledge can enhance the production and processing as well as the marketability of products.***

### **Local processing**

***A key to success in NWFP enterprises lies in adding value to the non-wood resource through local processing, which returns a greater portion of the final price to the people who manage the resource (see Table 2). Local processing can preserve items, reduce postharvest losses and enable the product to reach more distant markets.***

***In the Philippines, local processing was essential to the success of the Kalahan Educational Foundation (KEF), a local organization that helped the Ikalahan of north central Luzon gain legal control over their ancestral forest through the Philippines' first community forest stewardship agreement (Rice, 1995), which gave communities an incentive to manage the forest sustainably. KEF provided a forum for establishing local priorities and mechanisms for achieving them. In 1980, KEF members established a food-processing centre and began testing methods for making jellies and jams from forest fruits. The goal was to capture 10 percent of the high-end market in Manila (Rice, 1995). By 1995, the processing centre was providing 150 local families with most of their cash income. A KEF inventory of local wild guava resources on 500 ha of forest reserve at current harvesting levels found few signs of negative impact. The processing effort has in fact encouraged planting of more trees on private farms. The success of this endeavour encouraged KEF to reinvest the profits from the processing centre locally; they were used to build a local health centre and a secondary school.***

### **Improving marketing operations**

***Long and opaque market chains can be an obstacle to NWFP enterprises. However, it should not be assumed that market chains are always inefficient or exploitative; in many instances, intermediaries perform an indispensable service by absorbing short-term risks and by providing access to markets that are hard to enter (Table 3). Community-based enterprises can help local producers take advantage of opportunities to improve market chain operations. In Nepal, the trade in medicinal plants has long involved rural collectors, yielding an estimated US\$10 million in annual income (N.K. Bhattarai, cited in Aumeeruddy, 1995). However, collection was haphazard and frequently illegal, and there were often huge disparities between what collectors and intermediaries received. Uncontrolled harvests and the existence of a black market for the plants had brought several species to the brink of local***

**extinction (LeCup, 1994).**

**TABLE 2. Ways in which forest producers can increase their incomes**

Means	Example
<b>Increase production</b>	
Practise thinning, weeding	Remove competing vegetation
Improve harvest techniques	Harvest more selectively Learn about better equipment use
Improve postharvest storage	Construct ventilated storeroom Dry fruits for shipping
Control pests	Monitor insect damage Use biopesticides rather than chemicals
<b>Increase the product value</b>	
Improve quality	Sort produce by quality grades
Process materials	Assess processing options Install processing facilities Package products
<b>Obtain higher prices for the product</b>	
Organize for greater strength with traders	Group sales to traders at standard prices based on quality
Employ group marketing direct to consumers	Collectively rent transport for taking products to market Obtain credit for members Store product for off-season price benefits

**Source: FAO, 1995b.**

**TABLE 3. Comparison of market intermediaries' role and producers' options in two villages in peninsular Malaysia**

Feature	Village A		Village B	
Products	Coconut, cocoa		Fruits: durian, petai	
Investment to enter market	Overhead, labour		Minimal	
Product price	Relatively fixed		Flexible	
Average selling price (US\$)	Coconut	Cocoa seed	Durian	Petai
- To intermediary	0.06	0.24/kg	0.40	5.60
- Direct to consumer	-	-	1.60	7.20
Marketing channel	Well established		Informal	
Potential for producer to enter market	Low		Good	

**Source: FAO, 1995b.**

***In the remote Jumla district, the medicinal plant jatamashi (Nardostachys grandiflora), which grows in alpine meadows and woodlands, is a major cash earner; its bitter, hairy rhizome yields a valuable essential oil. Several projects have helped communities to enter this industry where market access is***

**difficult. The Humla Oil Project involved local partners in the Humla Conservation and Development Association (HCDA) with the regional Asian Network for Small-Scale Agricultural Bioresources (ANSAB) and EnterpriseWorks Worldwide (an international non-governmental organization [INGO] based in Washington, DC, formerly Appropriate Technology International). The project recognized that community members could gain more control over the jatamashi market by processing their own product, so it established two factories for distilling the essential oil; the factories cost US\$35 000 and were completed in 1996. Collectors sold the roots to Humla Oil for processing. Humla Oil worked with them to map local jatamashi resources and document regeneration of jatamashi and other commercial plants. In the Raya area, this led the community to start a rotational harvesting system. The Humla Oil factories employ ten workers and do business with 590 collectors, who in 1997 gained a total income of US\$24 000. The Humla Oil Project has broadened its operations to include essential oils from other plants, including juniper berries, sugandhawal and sunpati. Its emphasis on quality has allowed its products to enter the large Indian market, and some are shipped to two firms in the United States.**

**Exploring regional markets. Regional markets, serving cultures that share similar product preferences, may offer the greatest return to government research efforts and investment in NWFPs and processing techniques (FAO, 1995b). The following example shows how research that builds from local use can identify regional niches and the potential for sustainable ventures.**

**[A key to increased income is local processing: drying prosopis pods in Cape Verde](#)**

**In the Kékoldi indigenous community of Costa Rica, shopkeepers traditionally sold medicinal tea and medicines made from the wood chips of the bitterwood tree (*Quassia amara*). Harvests involved cutting the trees to metre-high stumps, which could resprout for future production (Ocampo, 1994). Bitterwood attracted the interest of researchers at the Tropical Agricultural Research and Higher Education Center (CATIE), who found that it had commercial potential as a biological insecticide. The researchers found that local demand for the traditional medicine was low enough to permit additional sustainable harvests in the 118-ha area, and accordingly explored techniques for processing the wood chips to make the bio-insecticide for domestic and regional sales. However, the researchers discovered that the amount needed to enter export markets would exceed the level of sustainable harvest in the Kékoldi reserve (Kent and Ammour, 1994) and concluded that supplementary sources would need to be found throughout Central America before the enterprise could proceed.**

**In Thailand, Wanida et al. (1993) explored the potential for processing and marketing catechu (*Acacia catechu*) - a tree native to India - to satisfy traditional Thai demand and also for export to India, where it is a popular chew snack. This study of processing, market and resource management implications, including local use and regional market standards, exemplifies a well-integrated approach to product research and marketing.**

**Alliances for green marketing. "Green marketing" targets the increasing number of consumers who are willing to pay a premium for products that are certified as sustainably produced and environmentally safe. If this premium returns to the producers of the product, it will help defray some of the costs of sustainable management of NWFPs, thereby helping to ensure their economic and environmental sustainability (Freese, 1998). Conservation International in the United States and Social Ventures Network in Europe have forged networks for green marketing, and groups such as Enterprise Works Worldwide (EWW) and the Biodiversity Conservation Network have provided technical and management support services.<sup>2</sup>**

<sup>2</sup> Editor's note: See the article by Dürbeck, for more information on green trade organizations.

### **Support for local knowledge**

**A project in Nepal demonstrated how NWFP enterprises can build on local knowledge and skills. Over the past decade, women's cooperatives in Nepal's eastern Makalu-Barun National Park and Conservation Area developed trade in allo cloth, a traditional product made from giant nettle (*Girardinia* spp.), a tall perennial that grows abundantly there. In 1990, the Nepali Government and the Mountain Institute provided technical support for marketing and business operations for cooperatives in four villages. A marketing study found allo cloth to be promising for sale to high-end tourist markets in Kathmandu. Its tweed look and flexibility make it suitable for a range of market uses from coats and shawls to upholstery.**

**The project fostered private distribution links at either end of the plane journey to Kathmandu. The distributors matched orders to supply and assumed short-term transport costs. A clear price list with acceptable profit margins set for each stage in the market chain helped to prevent exploitation of producers. To ensure continued supply of the giant nettle and minimal disruption of the wild population, the women explored techniques for allo cultivation.**

**The allo enterprise fostered respect for local traditions and knowledge. Traditional product design and household production featured prominently, with the recognition that high-end consumers value the environmental and cultural basis of production if it is presented effectively (Nicholson, 1995).**

### **Policy support**

**A coherent government policy can help enterprises manage NWFP resources and enter nearby markets.**

**Nepal's Community Forest Management programme allows communities to receive a portion of royalty payments for raw materials collected from their lands, which would otherwise go to the central government. This royalty for local management has proved to be a powerful incentive for communities in the area to take on forest management responsibilities (EWW, 1999). The Humla Oil Project described above, for example, has convinced the local district forest office to accept its plan for community-based management of the resource under this programme.**

***In the 1960s, farsighted planners in mountainous Himachal Pradesh, India recognized the advantages of the state's diverse native forest produce. Because of the state's marginal soils, small average farm size and poor access to inputs, field crops had limited potential. However, the planners recognized that a variety of fruits and nuts already harvested by farmers were better suited to the mountain soils. The nearby Delhi market offered good prospects for fruit sales. By promoting fruit production, the state encouraged trade, soil conservation and better nutrition among its rural households. The Directorate of Horticulture gave farmers information on nearby markets and promoted quality control from harvest to packaging, consistent product standards and appropriate infrastructure (such as gravitational ropeways to bring fruit from the orchard to the road). With these incentives, farmers shifted from field crops to more profitable forest species and supplemented wild resources by planting fruit-trees on their own land. The government thus expanded enterprise opportunities and laid a foundation for economic and environmental stability.***

## **CONCLUSIONS**

***The experiences described above and others like them have provided lessons about the elements contributing to successful NWFP-based enterprises. The following five points are central.***

- Support communities through clear land tenure and policy support. Where local groups are well organized and can control forest access, rural enterprises tend to fare better. A clear sense of group identity, cooperative behaviour and established rights to the resource can all help.***
- Start with local markets. Local markets are easier to enter and monitor than foreign markets, which often require heavy capital investment and large product volume and which tend to be vulnerable to product substitution. Enterprises may diversify to larger markets if such diversification is feasible in terms of sustainable harvests, product quality and investment requirements.***
- Focus on quality products and building management and entrepreneurial skills. These elements can be supported through coalitions involving local partners, local and national NGOs and international technical organizations.***
- Support NWFP enterprises through policies facilitating credit and trade. Coherent government policies that support NWFP enterprises are needed, including mechanisms to make credit more available to small enterprises (such as the recognition of stands of commercial tree species as collateral) and the removal of counterproductive price controls. To inspire policy-makers to support rural enterprises with a coherent policy framework, FAO has proposed better accounting of the economic importance of NWFPs, including a system for grouping NWFP trade statistics within existing commodity classification systems (Chandrasekharan, 1995).***

**· Make the most of local knowledge and resources. Maintaining cultural integrity remains an underappreciated element of forest sustainability, particularly in remote communities and upland areas. Researchers in silviculture, marketing and processing should consider the best available knowledge from traditional as well as scientific sources to optimize forest management and the contribution of NWFPs to the lives of rural people.**

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