



**The Role of NTFPs in the Livelihood Strategy of
Rural Communities:
An overview**

1. INTRODUCTION

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1.1 Background

Non timber forest products (NTFPs) form an integral part of the livelihood strategy of rural community in the tropics. At the household level they are used mainly for subsistence purposes such as food, medicine, etc. Moreover, some products are often of economic importance as they are traded locally and even internationally. Besides that, NTFPs have potential to contribute to the conservation of tropical rainforests and participatory forest management (Ros-Tonen, 2000). The cultural and spiritual values of NTFPs are frequently mentioned in the literature. Because of the variety of roles of NTFPs, they have received considerable attention by researchers and policy makers.

At present, there seems to be a global consensus on the importance and inevitable roles of NTFPs. Despite this fact, there are also numerous problems that need to be considered in order to enhance the many positive roles of NTFPs. Among the problems are declining natural stocks, policies uncondusive to environmental protection and poor access to "fair" market.

1.2 Objectives

This essay briefly reviews some important aspects of NTFPs in relation to the livelihood strategies of rural communities. The review comprises the following topics; the use of NTFPs at local (household) level (chapter 2) and the many problems faced by local community in the management and extraction of NTFPs (chapter 3). A model for development of small-scale enterprises is proposed. Throughout critical analysis is presented. Based on the analysis, general conclusions are drawn and some recommendations for the enhancement and development of NTFPs are suggested.

1.3 Limitations

This essay looks at the NTFPs that are extracted from natural forests and those domesticated at the household level (e.g. planted around the house) by rural communities in the tropics. NTFPs that are cultivated on form big estates (e.g. pine and rubber plantations, etc.) are beyond the scope of this essay.

As the title reveals, the analysis is very much directed toward the role of NTFPs in the livelihood strategy of local communities including the commercialization of NTFPs by small-scale enterprises. This means that other issues, such as forest conservation and participatory forest management, are not discussed.

2. NTFPs AND THEIR USE AT LOCAL LEVEL

2.1 NTFPs at glance

NTFPs are defined as all tangible animal and plant products, other than industrial timber, which can be collected from forests for subsistence and for trade (Ros-Tonen, 1995; 2000). In this definition ecotourism is not considered as an NTFP but rather it is seen as a forest service which is a separate category of forest output.

NTFPs take many forms that are useful for households in the rural tropics. They are categorized as follows; edible plants, edible animals, medicinal products, non-edible plant products and non-edible animal products (De Beer & McDermott, 1996). NTFPs can be found not only in the natural forest ecosystems but also in man-made vegetative structures such as forest garden and plantations.

Rural communities in the tropics have used NTFPs for a long time, maybe as long as the history of their settlement. In 1290, Marco Polo mentioned the use of *Caesalpenia sappan* (Leguminosae) for dyes. Europeans in Malaya discovered 'damar'¹ resin in 17th century. Rubber trees were cultivated in Malaysia in 1880 and subsequently in neighboring countries (Hillis 199? cited by De Beer & McDermott, 1996).

In addition to subsistence use, NTFPs play a major role in the household economy. In Java, agroforestry system provide more than 40% of the total calories consumed by some farming families (Christianty, 1986). In Nigeria, traditional home garden contain at least 60 species of trees that provide food products (Okafor and Fernandes, 1986). In many other cases, NTFPs also help people survive hardships (e.g. food crisis, flood, war, etc.).

Peters (1989) argues that the value of NTFPs per hectare is higher than that of timber. This controversial statement has challenged researchers to scrutinize NTFPs even more closely. Peters' statement has received many reactions pro and con. Apart from whether his statement is true or not, the variety of roles of NTFPs is, in fact, undeniable.

2.2 NTFPs and their use at household level

The extraction of NTFPs from natural forests by rural communities is mainly for subsistence purposes. The main actors in NTFP collection are those socially marginal people (e.g. Bagyeli and Bantu people in Cameroon, the Amerindians in Guyana and the Dayaks in Indonesia) (Tonen, 2000). It is often said that the use of NTFPs is associated with poverty.

Those poor forest dwellers are dependent to a greater or lesser degree upon NTFPs to survive (Poulsen, 1982). Forests provide many kinds of plants and animals that are one source of food for rural communities. The importance of many forest foods lies in their protein and vitamin content. Even though most of the forest foods may not be consumed in great quantities in comparison to food staples, they add variety to diets, improve the palatability of staple food and provide essential calories. They are, too, often used as snacks while working in the fields or herding livestock. Moreover, forest foods can offer vital insurance against malnutrition of famine during times of seasonal food shortage or emergencies such as droughts, floods or wars.

¹ The Malay word, 'damar', was adopted into European trade language to signify resin, primarily that produced by the dipterocarps of Southeast Asia.

A number of forest plants are useful for the treatment of ailments (Poulsen, 1982) and they play an important role in the livelihood of rural people, particularly in remote parts of the tropics with few health facilities (Levingston & Zamora, 1983). Rural communities have utilized plants for medicinal purposes for centuries. For instance, King (1996) states that more than five millennia ago people throughout the world were utilizing plants as the basis of their primary medicine including the widely documented Chinese medical system and Indian Ayurvedic medical system. They were traditionally gathered and they still provide main source of medicines in many local areas across the tropics. The medical substances of forest plants are of importance as anti-malaria drugs and for contraceptive purposes, fever treatment, fungal infection, pain, wounds, stomach ache healing, anti-cancer drug, etc. In Indonesia, the plant medicines known as 'jamu'² are widely consumed by nearly 200 hundred million people (King, 1996).

Apart from the food and medical usefulness of NTFPs, rural communities also utilize them house construction, utensils, firewood, artistic or cultural objects, traditional ceremony, etc. Table 1 shows some examples of the uses of NTFPs at household level.

Table 1. Examples of NTFPs collected and used at household level

CATEGORY	EXAMPLES
Food/diet	Nut, variety of forest fruits, edible root, leaves, mushroom, palm, cabbage, <i>Metroxilon sagu</i> , <i>Parkia</i> spp., <i>Mangifera</i> sp., <i>Arenga</i> spp., <i>Caryota</i> spp., birds' nest, honey, fish, pigs, crocodile, insects, etc.
Medicine	<i>Rauwolfia</i> sp (for high blood pressure), <i>Maytenus</i> sp. (for cancer), <i>Solanum margilatam</i> and <i>Dioscaria bulbifera</i> (contraceptive), etc.
Non edible plants	Rattan, bamboo, ornamental plants, extracts, exudates, fibers, etc.
Non edible animals	<i>Apis</i> spp. (bees), <i>Laccifer lacca</i> , <i>Argusianus argus</i> , <i>Sus barbatus</i> , <i>Cervus unicolor</i> , <i>Mautiacus</i> spp., <i>Helarctos malayanus</i> , <i>Macaca</i> spp., <i>Loriculus galgulus</i> , <i>Gracula religiosa</i> , etc.
House construction	Bamboo, rattan, etc.

It is obvious that NTFPs form an important part of the livelihood of local communities. They are useful for many different purposes and are vitally important, especially for the poorest people in remote areas.

2.3 Commercialization of NTFPs

For the past decade, there has been growing awareness of the importance of non-timber forest products (NTFPs), not only for the roles they play in the subsistence economy, but also for their potential and real importance to the national economies of many developing countries. Commercialization of NTFPs is seen as one option for increasing household income of rural communities. Some products have been locally traded and some have reached even wider markets (e.g. rattan, damar, sandal wood, gaharu, etc.).

² Jamu is an Indonesian term referring to a traditional drink that consists of a mix of herbs. Jamu was originated from Java, however, it is now consumed widely by people though out Indonesia.



Figure1. Woman weaving rattan baskets, East Kalimantan, Indonesia
(Photo: L Wollenberg-CIFOR)

In local settings, small-scale enterprises, which are often also home-based, can be found. However, this kind of industry is characterized by its non-continuous (or seasonal) activity. Home-based industry mainly operates during the low agricultural season for making additional income. Unless the activity yields greater economic benefits in comparison to agriculture it will not be the main source of livelihood to rural people. Another problem is the absence of established markets. Most rural communities have little access to market and they are usually highly dependent upon retailers who have better connections with urban areas. The development of small-scale enterprises is even more problematic due to the fact that rural communities lack capital to enhance their production capacity.

In order to stimulate the development of such industry, several factors need to be taken into account. Here, a model of home-based industry development is proposed (see Figure 2).

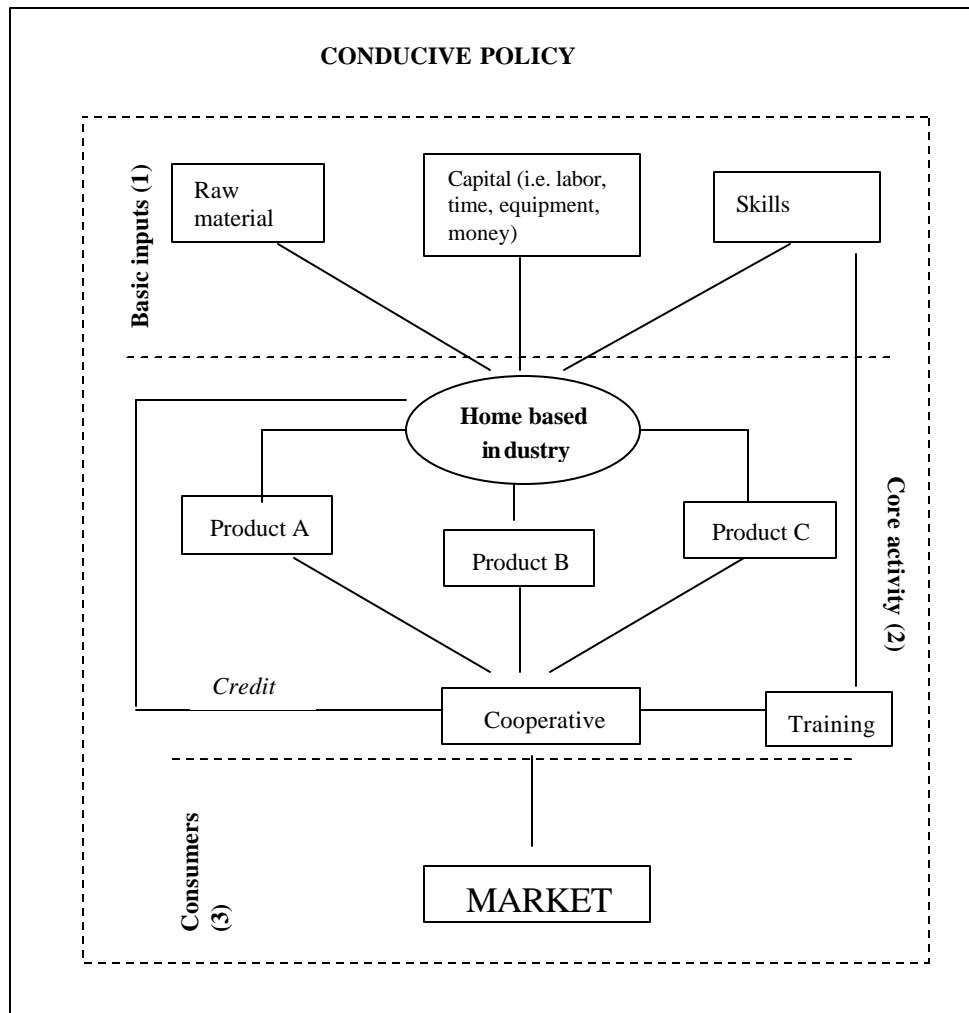


Figure 2. A model for development of small-scale enterprise at local level

This model proposes three stages for achieving well-established small-scale enterprises. The initial prerequisites for such enterprise are: (1) a continuous supply of the raw material from the forests or domesticated sources, (2) capital to run the enterprises such as labor, money, time and equipment necessary in production, and most importantly, (3) the skills of the rural community to produce good quality products according to marked demand.

The next stage is the productive activity. Production must respond to the demand of the market. In this case, quality standards need to be ensured. It is proposed that households produce not only a single product but rather multiple products. The advantage of multiple products is that they are less vulnerable to market saturation. However, this may require more labor and investment too.

The model also suggests that it is much better for the households to establish a cooperative to support the marketing of the products. In the absence of a cooperative, retailers will normally get most of the benefit, because in such situations, producers (on the rural community) will have less power in defining the price because they are price takers while the retailer is a price maker. In order to avoid this unfavorable situation, cooperatives offer a promising alternative. If all producers gather into a cooperative, they become a single entity that can sell their products to many consumers. In this situation, they have more power in determining price (price maker). Moreover, cooperatives may give opportunities for small

credit to their members. Another advantage of a cooperative is that it can offer training necessary to improve the skills of its members, which in turn yields better quality products.

Finally, policy (both at the local and national level) needs to be conducive to support the development of small-scale NTFP home-based industry. Government must stimulate and ensure the existence of this kind of enterprises. In this way, rural poverty may be alleviated.

3. NTFPs AND THEIR PROBLEMS

3.1 Declining resource

In most tropical countries, NTFP collection has been practiced in parallel with commercial timber production. For instance in Indonesia, most of the forests have been leased to private timber concessions. The primary objective of the timber concession is, of course, timber production. NTFPs are mostly collected by the local community living around the concessions.

This situation has led to many conflicts between local communities and forest concessions. One of the causes is the destruction of many NTFP resources by concessions during timber extraction. In Bulungan East Kalimantan, for instance, communities have many grievances toward timber concession operation due to the negative impacts of such operations upon NTFP resources. Many NTFP resources have now diminished in or disappeared from the forest (e.g. gaharu, honey, pig, etc.).

If there is no improvement in the concession operation or legal support for the protection of the NTFPs useful for local communities in the area, concession practices will continue to have negative impacts on the availability of NTFPs in the future. This, indeed, is a serious problem for local communities. Because resources are declining, rural communities become even more vulnerable to food shortage. They will no longer be able to rely upon forest foods during periods of low agricultural yield and hardships.

3.2 Access to market

As described earlier, the problem of NTFP commercialization is access to market. Rural communities do not have sufficient information regarding market demand and price. Therefore they cannot respond adequately to current market trends. Moreover, under the current situation, most of the benefits do not go to the rural community; instead retailers enjoy the most of the benefits.

3.3 Policy

In many tropical countries, government policy for the utilization, management and development of forest resources is primarily concerned with the production of timber (Panayotou, 1991). For the majority of such countries, timber is an important source of foreign exchange. Other commodities are considered to be "minor" forest products or non-timber forest products.

Perhaps the ignorance of many policies is due to the fact that NTFPs are often associated with traditional uses that are not widely known. They are seldom marketed through known channels that would add to a nation's gross national product (GNP) (Panayotou, 1991).

Much evidence shows that the collection of NTFPs by the rural community is perceived as a threat to the logging company. This situation is very unfavorable and unconducive to the management and development of NTFPs, especially those of importance for rural community. Despite the fact that NTFP collection is an essential part of their

livelihood strategy, the rural community has no power to secure their interests. They lack legal support, while on the other hand the logging company has a formal lease agreement with the government. In many cases in tropical countries, rural communities have even lost their control over NTFP. In that situation their livelihood becomes precarious.

3.4 Certification of NTFPs

Forest certification currently focuses primarily on timber products. As we talk about what makes a healthy forest, however, we become aware of a wide array of other marketable products — non-timber forest products. These include plants such as medicinal herbs and floral greens that can be important in assessing the health of the forest. Some of these products may be as valuable as timber off of the same acreage. When we talk about large-scale harvest, similar concerns arise as with timber harvest; how do we ensure that the resource will be there in the future? How do we ensure that the forest and the products within it are still capable of serving other, vital purposes? How do we give the public an opportunity to encourage sustainable harvest?

Conversations have begun about non-timber forest product certification. Many of the issues are similar to timber product certification, but these questions can have very different answers for NTFPs. And there are many more questions, because non-timber forest product certification has aspects particular to smaller plants. Some of the unique issues that NTFP certification must face are tracking, the illicit nature of the industry, and lack of information about harvest sustainability.

Will small-scale enterprise be able to follow such a labelling scheme? What criteria and indicators will be used to assess the sustainability of NTFP production? Given that most small-scale enterprises lack of capital, who will bear the often substantial costs of certification? What are the positive and negative impacts of the certification of NTFPs? These questions are all problematic for the certification of NTFPs.

4. CONCLUSION AND RECOMMENDATION

4.1 Conclusion

Non timber forest products (NTFPs) form an integral part of the livelihood strategy of rural communities in the tropics. They are categorized as follows; edible plants, edible animals, medicinal products, non-edible plant products and non-edible animal products. At the household level, they contribute to subsistence in the following forms; food, medicines, household construction and utensils, etc.

Local communities in the tropics have used NTFPs for a long time, maybe as long as the history of their settlement. Besides for subsistence use, NTFPs play major roles in household economy. Commercialization of NTFPs is seen as one option for increasing the household income of rural communities in the tropics.

This essay suggests three important stages in stimulating a well-established small-scale enterprises: (1) providing adequate basic inputs (i.e. raw material, capital and skills), (2) establishing a good production system and present of a strong institutional support for the effectiveness of production and marketing (e.g. cooperative) and (3) formulating a proper marketing strategy.

Many problems surround NTFPs, among others, declining resources from the natural habitat, unfavorable national policies, access to market, certification issues, etc.

Finally, despite the many problems faced, it is clear that NTFPs have significant alleviate potential to poverty in rural communities through out the tropics. The most critical question is how to stimulate NTFP development in such a way that they can significantly improve the self-reliance of poor people. Only by addressing this question can NTFPs be come an effective tool in poverty alleviation.

4.2 Recommendation

To stimulate the development of NTFPs as a strategy to alleviate rural poverty, it is important to take into account the followings:

1. ***Forestry policy reform***

National forestry policies should be favorable for the development of NTFPs. The main focus should not only toward timber production but also include NTFP production, especially by local community.

2. ***Institutional development at local level***

A strong local institution can contribute to the development of NTFPs. Therefore, it is recommended that development agencies and (local) government play roles in stimulating the establishment of a strong local institution.

3. ***Improving access to market***

Local communities must have good access to market information. They need to know what consumers demand. Development agencies (including NGOs) and local government can play a facilitating role in this regard.

4. ***Integral approach to NTFP production***

As NTFPs from natural forests decline, domestication of economically valuable products becomes more important. Domestication may ensure the sustainability of the flow of the products. This integrated approach (i.e. natural and domesticated) is much better than merely reliance upon the natural habitat alone.

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