Poverty Alleviation and Forest Conservation: The Role of Non-Timber Forest Products

By Manuel Ruiz Pérez

1. Introduction

Structural poverty is one of the most pervasive social phenomena, whose effect is attracting increasing international attention. The definition and assessment of poverty has evolved from a classical income-based measure (the typical below 1$ per day or any other officially established income criteria) to a multidimensional perspective that includes income, health, cultural and social resilience, self-esteem and other parameters (World Bank 2003).

Poverty analysis tends to distinguish between rural and urban poverty, signalling different causes, symptoms and abilities of people to cope within both situations. This has led to different strategies at international level, which tend to focus on primary sector-based activities for rural areas and on providing infrastructure and general skills to enter the secondary and tertiary sectors in urban areas. In both cases, the fight against poverty combines two approaches: a strategic, maximalist approach of eliminating poverty that confronts the structure of the system that generates poverty; and a tactic, poverty alleviation approach that can be easily accepted and carried out within the limits of the system (Angelsen & Wunder 2003). Understanding that the elimination of poverty is the ultimate goal, we concentrate here on the more humble and tractable issue of how to reduce or alleviate poverty especially in rural areas of developing countries, and which has been the focus of our research for over 15 years.

The interest in forest conservation acknowledges the serious pressures on forest, one of the key terrestrial ecosystems, with important global values in terms of climate and biodiversity. Forests are one of the fastest losing ground ecosystems. In order to accurately portray this process we need to distinguish between permanent and temporary deforestation, forest degradation and forest replacement, normally substituting natural forests by plantations (FAO 2001). However, the commonly used statistics are aggregates of these different processes, and there is therefore little possibility for a clear consensus on their real meaning, let alone on their implications and desirability (Matthews 2001, Kaimowitz & Angelsen 1998).

When analysing the pressure on forests we need to separate the direct from the indirect causes (Barbier & Burgess 2001, Geist & Lambin 2001). Concerning the first, we can mention different levels of agricultural activities, from slash-and-burn subsistence to large scale agro-industry; livestock; mining; reservoirs, roads and other major infrastructures; logging and the aggravation through human intervention of some naturally occurring processes like fires, hurricanes, etc. Indirect causes include market pressure and failures (undervaluation of forest goods and services); development plans and tax policies that offer incentives to deforest; land use and tenure conditions that tend to confront the State with traditional property rights; macroeconomic policies such as structural adjustments that force people to depend on forest exploitation to survive and the broad socio-economic context, including population growth, income distribution and external debt.

2. Linking poverty and forests.

There have been three complementary ways to combat deforestation/forest degradation:

- To stop it through the creation of protected areas with different degrees of efficiency and that tend to confront local populations.
- To improve forest management techniques, especially in connection to large scale logging operations.
- To promote a multifunctional valuation of forests that would encourage local actions to protect them.

The latter has the highest potential to combine poverty alleviation and forest conservation, based on two facts: the co-occurrence of forest-rich and economically poor territories in different places – from China to the Congo Basin or the Amazon region – with a clear opportunity to try and find common solutions notwithstanding the debatable causality link and the convergence of the agendas of the conservation and development groups since the 80s (Nepstad & Schwartzman 1992).

This multifunctional valuation is based on three key assumptions (Myers 1988, Panayotou & Ashton 1992, Wollenberg & Inglis 1998):

1. That deforestation is the result of a consistent and pervasive undervaluation of forest goods and services.
2. That increasing the monetary value of forests will make them more attractive than the alternative land use scenarios based on deforestation.
3. That there is a need to develop strategies to add value locally in order to increase the monetary value of forests.

This is the basis of different *'conservation through commercialisation'* approaches that became popular at the end of the 80s with conservation and development groups joining actions to try and capitalise on

the seemingly potential synergies (Evans 1993, Stiles 1994). These approaches could be separated into two complementary groups. On the one hand, the creation of new markets (for example, the promotion of debt-for-nature swaps or the payment for environmental services like water, CO_2 or biodiversity). This has been proposed at various levels – from local to national and international – normally linked to compensation schemes (like the Natural Forest Protection Programme in China, or watershed management agreements in different countries). A number of international initiatives are now ready to be promoted, with the Kyoto Protocol and the associated market for CO_2 emissions standing out as the most promising. As with other innovative proposals, there is always some distance between the theory and reality. Critics of the new market approach stress the difficulty to allocate a market value to intangibles like biodiversity or climate, as well as the real willingness to compensate for global services. Likewise, the issue of national *versus* international sovereignty has been raised.

On the other hand, promoting already existing markets for forest products and services (like timber, NTFPs, biodiversity or eco-tourism) has experienced a thriving and agitated agenda that has had the advantage of the existing experience with such activities. Building on them, frequently more empiricist than well planned actions, has expanded, trying to shorten the path between local producers and their local, national or international markets and to reinforce forest-based local income generation.

3. What role for Non-timber Forest Products?

NTFPs attracted early attention among practitioners and researchers alike, based on the concatenation of three largely untested assumptions:

Even in forest-rich countries, where logging is seen as the most important forest activity, some medicinal plants represent big markets. Pictured is an example from the Congo Basin (Photo by Manuel Ruiz Pérez).

1. That NTFPs are widely distributed, contributing more than timber to forest people's livelihoods (Myers *op. cit.*, Panayotou & Ashton *op. cit.*).
2. That their harvesting is ecologically more benign than alternative forest or non-forest uses (Peters et al. 1989).
3. That increasing their commercial value will contribute to an increased appreciation of forests, therefore contributing both to poverty alleviation and to forest conservation (Clay 1992).

Almost two decades of accumulated experience have now allowed for a more sober and balanced assessment of the potential contribution of NTFPs to the joint conservation-development agenda (see Neumann & Hirsh 2000, Arnold & Ruiz Pérez 2001 for a review). We present some of those issues below.

In connection with the contribution of NTFPs to forest people's livelihoods, the twin questions raised are how much and who benefits. The extent of the contribution ('*how much*') has delved into the analysis of forest dependency and its level (for instance high-low; permanent-sporadic; the role of NTFPs as safety nets). Their real level of sustainable use has also confronted different visions, from a cornucopian, almost infinite availability (Peters et al. *op. cit.*), to limited physical and commercial opportunities (Godoy et al. 2000). Likewise, the discussion on their future potential has spanned from a new El Dorado that would realize their immense potential (Balick & Mendelsohn 1992) to a rather modest and incremental role (Simpson et al. 1996).

One of the frequently repeated statements is that NTFPs benefit mostly the poorest populations (Cavendish 2000). However, with regard to the '*who benefits*' question, some authors have confronted this with the paradox of the appropriation of the valuable resources by the rich, while the poor are being left with the crumbs of the feast (Dove 1993). Therefore, it is important to understand when the poorest benefit from NTFPs, and what types of development opportunities can these forest products offer to local livelihoods. Our research based on 61 case studies of commercial production of a given NTFP has typified three main situations (later on expanded to five) with regard to the role of NTFPs in the household economy as part of the general household

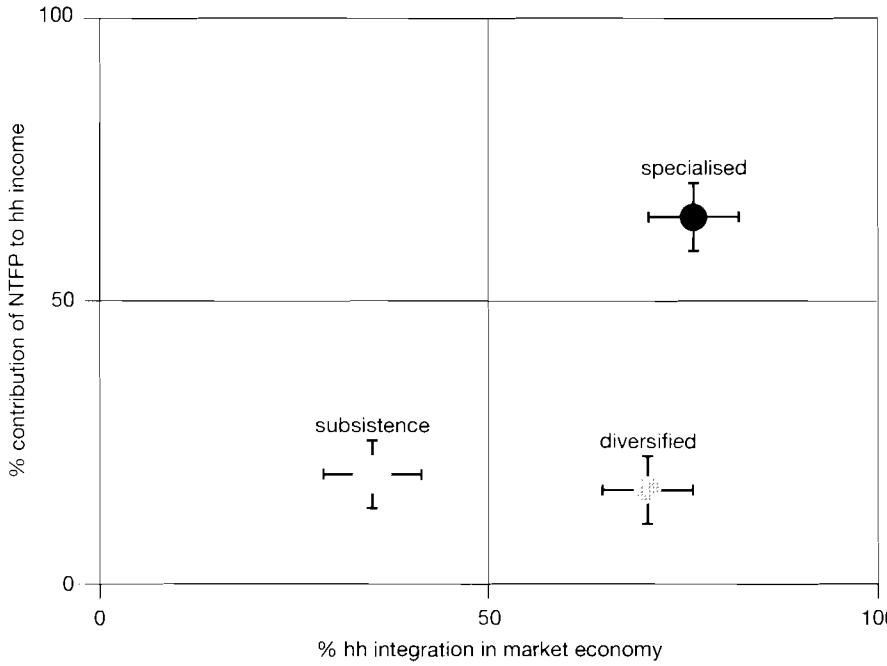

Figure 1: Generalised NTFP based livelihood strategies (hh means household in abbreviated form). The dots represent the mean value for each group; bars indicate the standard deviation of the X and Y axis variables within each group. Modified from Ruiz Pérez et al. 2004a

livelihood strategy (Ruiz Pérez et al. 2004a, Belcher et al. 2005): **subsistence**, with little integration in the market economy, and mainly through the local commercialisation of the NTFPs; diversified, well integrated in the market but relying on a **diversified** portfolio of activities; and **specialised**, also highly integrated in the market and relying to a great extent on the commercialisation of a specialised NTFP (see Figure 1). These strategies can be associated in a general way with regional macro-features in the three main tropical regions (Africa – subsistence; Asia – specialised; Latin America – diversified).

Another important question raised is the balance between farm (or land) and off-farm based income in forest related household economies. Following a generally recognised trend in many countries, forest people's livelihood is increasingly relying on off-farm based activities (Lanjouw & Feder 2001). When the latter represent a good opportunity, the shift from farm-land to off-farm activities tends to be faster in better-off segments of the rural population. In general, we hypothesise (Ruiz Pérez et al. 2004b) that when forest resources offer a good opportunity and a dynamic context this tends to be recognised by the better-off; when it is an average opportunity it is the middle income group that takes most of it; whereas when it is an inferior opportunity in a stagnant context, it is the poorest that will tend to concentrate on them (see Figure 2). This poses the important question of the potential role of NTFPs in rural development and in particular how they can be used for the benefit of the poorest segments of the rural population.

The analysis of the environmental benefits of promoting NTFPs has also advanced several nuances with regard to earlier optimistic assessments. It is generally accepted that NTFP harvesting tends to maintain forest cover, particularly when compared with other alternative land uses (Ruiz Pérez et al. 2005). The effects on biodiversity are variable; NTFP based activities generally maintain a substantial amount of the species naturally occurring, although it certainly affects them, specially those most sensitive to human presence or those which are also collected in parallel with the commercial gathering of the main NTFPs (Peters 1994, Freese 1997, Bennett & Robinson 2000, Ticktin 2004). This extraction can also seriously affect the populations being exploited, particularly in the context of wild gathering and market expansion. The promotion of commercial uses of NTFPs can then be viewed as a double-edged sword, with potential and risks (Redford 1992).

It is worth stressing the potential conflict between short-term and long-term effects. Thus, commercial collection of NTFPs may, in the short term, represent a good strategy for local populations to maintain the forest condition in a state where it will continue to produce a number of subsistence and marketable products. However, the system will only last as long as the alternatives are not perceived as better (Wilkie & Godoy 1996) in the longer term – for instance the money

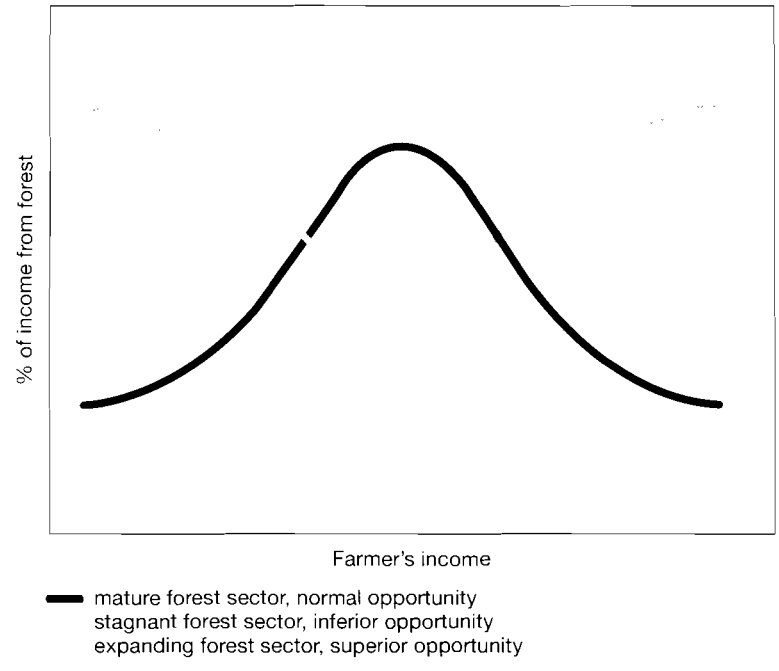

Figure 2: Theoretical model of contribution of forest sector to rural people's income for different forest development contexts. Modified from Ruiz Pérez et al. 2004b.

earned through NTFPs may be invested in other options that may increase the pressure on the forest in the long term. That is the case of savings used to increase smallholders' livestock assets, the acquisition of mechanical saws or the improvement of roads that will have an increased effect on the expansion of agriculture and other commodity-oriented production at the expense of forests.

4. Concluding remarks

Forest populations are not static societies that hinge upon an ancestral way of life. They should be viewed as flexible, dynamic and able to create, adapt and respond to new opportunities. Research has showed that forest based income can sometimes be such an opportunity to improve or to gain access to markets. This role, however, is normally limited and its realization seems to indicate a relationship between relative local social positions and the capacity and resources to take the opportunity of the potential offered (knowledge of markets, possibility to invest in risk, contacts, power relations, time availability, different opportunity costs and ability to cope with these, rights, etc.). While working on this as a development tool two key considerations should be followed: not to raise unrealistic expectations and not to open opportunities in such a way that could increase the level of dispossession of the poor.

Similarly, NTFP based activities could help prevent some of the environmentally worse-off scenarios while allowing for a reasonably good level of forest coverage, biodiversity and forest-related environmental services. However, careful monitoring of individual species under particular pressure, of the risk of increase forest degradation through the expansion of the range of forest activities and areas being exploited, and of the potential trade-offs between short-term *versus* long-term processes should be implemented.

While NTFPs can sometimes be a way to offer development opportunities to poor populations in a forested environment, it can also be a poverty trap that would limit people's options and would risk the future of the forests upon which they live. Applying the general trends observed and lessons learnt to the concrete conditions of each particular case is the real challenge for development and conservation practitioners.