

Jörg Hartmann

**Small Business in
Tropical Rainforest Areas**

edited by:
International Department
Institute of Small Business
Director: Prof. Dr. Wolfgang König

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Göttingen 1993

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I. Introduction

Practical approaches to tropical rainforest (TRF) protection are urgently needed. This paper presents such an approach and aims at establishing its proper context. It argues that small businesses, based on natural resources from the TRF, can contribute to conservation and development at the same time. Rain forests are only one example of the interface between small scale rural development and natural resource management, and the approach taken here may be applicable to other problem settings such as coastal areas, tropical dry forests, arid and semi-arid regions etc. The paper aims at showing that in these ecologically sensitive regions, strong cooperation between rural development planners, natural resource managers, and conservationists is required to produce sustainable outcomes.

In order to avoid a lengthy discussion of definitions, the paper's scope is restricted to extraction and processing of non-timber forest products (NTFP) on a small scale¹⁾. This restriction to 'non-timber' products may be justified because the extraction of commercial timber, frequently for export, is out of reach for most small businesses. In fact, it is often dangerous for them as it damages their raw material base.

Unfortunately, these activities "are usually ignored in the decision-making process about preserving or converting a tropical forest" (Dixon and Sherman, 1990). Establishing their potential contribution to employment, income generation, food security etc. is therefore of utmost importance. To give only one example, small forest-based enterprises accounted for 29% of total industrial employment in Zambia (1985).²⁾

The plan of the paper is as follows. It is first shown briefly how modern environmental economics can be used to evaluate different TRF management options. Sustainable multiple-use management, as the option

1) "[Non-timber] forest products are defined as all the biological material (other than industrial roundwood and derived sawn timber, wood chips, wood-based panels and pulp) that may be extracted from natural ecosystems, managed plantations, etc., and be utilized within the household, be marketed, or have social, cultural or religious significance" (Wickens, 1991, p. 3). Poore and Sayer (1987, p. 6) estimate that "about 15,000 plants currently support some kind of non-timber use."

2) Arnold, Chipeta, and Fisseha (1987, p. 11).

that incorporates the small scale NTFP sector, may frequently be the best option, but institutional reasons prevent it from being applied in the real world. To overcome this problem, cooperation between three groups of decision-makers (rural development experts, forest managers, and conservationists) is deemed necessary. Their perspectives on the sector are examined, and it is shown that they share an interest in promoting the sector. *The concluding chapter therefore discusses indirect promotion through forest policy, direct promotion at the business level, and the difficult problem of implementing this important approach to TRF conservation.*

II. Small Business in the Context of Forest Policies

The economic evaluation of forest policies is a difficult problem. On the one hand, forest lands, as other ecosystems, have several *functions*. These may be defined as possible uses of the environment by mankind.³⁾ Environmental problems arise because not all the possible uses of a certain ecosystem⁴⁾ are available, to a sufficient extent, at the same time. "The environment has an economic aspect when competition of functions occurs ... Competing functions are scarce goods." (Huetting 1991, p. 44).

On the other hand, several different resource management *strategies*, i.e. different sets of physical interventions, are possible. Every resource user implicitly decides for a certain strategy. Thus, 'strategic' decisions are taken at a number of different levels, from the national planning agency down to the peasant household.

The application of a particular management strategy on a particular ecosystem has a number of results which may be ordered by the functions this ecosystem can provide. This helps to illustrate that the effects of a strategy are manifold, and that all the possible uses have to be considered when it comes to comparing several possible strategies. Forestry, for example, has been explicitly defined as the "joint production of wood,

3) The concept of 'functions', relating natural processes and components to human needs and activities, is advocated in Huetting (1991).

4) The relevant unit of analysis may be a watershed area, an administrative district, an area defined by some ecological classification etc.

game, erosion protection, conservation of species, control of water and climate, recreation, and other commodities" (Palo 1987, p. 74). Additionally, the functions that a land area can provide if it is converted from natural forest to other uses, have to be taken into account. These could be as diverse as agricultural production, timber production from plantations, or electricity from hydro-power projects.

Three ideal-type land management strategies in TRF areas can be identified:

- preservation of primary TRF,
- modification by sustainable multiple-use management, and
- conversion to other land uses.⁵⁾

Of these, sustainable multiple-use management is the strategy that allows small businesses based on NTFP to play a role. It is, unfortunately, also the most elusive. It starts from a recognition of the importance and potential value of all the functions of a TRF, or in other words, of an area with the forest cover remaining intact. Only those functions are excluded that require a prior removal of the forest cover. "This implies reasonably sophisticated management of the individual activities and, depending upon the mix of activities ..., no single use can be maximized without constraints being imposed on other uses. A variety of activities can be developed and sustained, however, without foreclosing options to either change the mix and intensity of uses or to alter the overall use to either preservation or conversion" (Hamilton and Snedaker, 1984, p. 116).

The natural properties of particular TRF ecosystems (e.g., nutrient concentration in biomass stocks, soil type, slope, biodiversity) determine what strategy is indeed sustainable. A working definition of sustainability in this context could be that any intervention has to leave the ecosystem's capacity for natural regeneration within a reasonable time span intact. In the language of resource economics, one has to ensure that the resource

5) This broadly relates to the alternatives outlined in Poore and Sayer (1987), p. 28: "to keep the forest intact ...; to manage it as a source of raw material ...; to remove the trees and use the soil for other purposes." Compare also Pearce (1991), p. 240, and in a similar context, Hamilton and Snedaker (1984), p. 109.

remains renewable, which requires that "the ecological processes governing the system are maintained" (Hamilton and Snedaker, 1984, p. 2).

It could be argued that the superiority of sustainable over non-sustainable strategies is self-evident. A different approach is increasingly taken by environmental economists who compare the strategic options with the help of extended cost-benefit-analysis. This approach is, formally, rather simple: the strategy is chosen that maximizes the sum of the values over all possible functions, net of the implementation costs for each strategy. However, in reality the methodological problems as well as the information requirements are huge. Three major steps need to be taken:

- plausible long-run scenarios for each strategic option have to be developed,
- a common denominator for the estimates of physical results is needed, requiring monetary valuation of all the functions,
- distributional issues have to be addressed, as the TRF's functions are used by entirely different groups of people, and any decision on future strategies will influence the distribution of its benefits between these groups. This also requires decisions on the rate at which future benefits will be discounted - a question of inter-generational equity.

Environmental economists generally defend the cost-benefit-approach on the grounds that, "while there are many reasons to conserve biological resources, economic arguments carry the greatest weight with development planners ..." (Dixon and Sherman, 1990, p. xiii). They argue that even if economic valuation techniques are not yet satisfactory, no compelling alternative to extended cost-benefit-analysis is available.

For reasons of space, it is here impossible to discuss valuation attempts for all the functions of a TRF.⁶⁾ Instead, the value aspects of NTFP shall be briefly examined. Their valuation requires

6) For a methodological discussion of valuation, see Dixon and Sherman (1990). Pearce (1991), in his attempt to show the 'total economic value' of a TRF under sustainable management, provides an excellent overview of TRF functions. Compare also Hyde, Newman and Sedjo (1991, pp. 38-45). Ashton (1985, p. 41) has expressed the importance of recognizing all different functions as follows: "Holding exclusively to the conventional criteria for establishing economic land use will almost always increase rural poverty in the medium to long term."

- estimates of the *physical impacts* of extraction (at various levels of intensity) on a number of functions. For example, if extraction could provide a given yield of latex but at the same time had negative impacts on biodiversity or soil protection, this must be taken into account.
- estimates of the *economic value* of materials that can be sustainably extracted from a given area, including marketable as well as subsistence goods. It is helpful to split up the TRFs function "NTFP yields" into some sub-functions, defined from the point of view of direct users: provision of food, fuel, medicines, building materials, implements for household use or as inputs for other activities (agriculture, fishing, hunting, small-scale processing), products for trade etc.

Information on physical impacts of extraction necessarily has to be very specific, depending on the characteristics of the location, the type of materials extracted, and the intensity of harvests. "[In] some places the intensity of use may become so great (often due to the development of a cash commodity value or a village industry) that the forest resource base is damaged ... or the product is overharvested and becomes scarce." (Hamilton and King, 1983, p. 9). Certainly, environmental impacts and physical sustainability of extracting many different and little-known species are difficult to assess. For a long time, these forest products have not been taken serious enough in the science of forestry. Neither is much known about resource management systems of indigenous peoples that have proven to be sustainable in the long run.

Not only physical, but also monetary evaluation of NTFP extraction is replete with difficulties. Some of the questions to be asked are:⁷⁾

- Do local market prices reflect the true social value of a good? In that case, the total quantity collected, whether marketed or not, may be multiplied by price per unit. However, local prices will change if local forest management strategies change, because this will influence the availability of NTFP, the ratio of subsistence to market-oriented production, etc. Urban or export prices may come closer to what one looks for.

7) Cf. the overview in De Beer and McDermott (1989), pp. 145-156.

- If market prices contain costs for collecting, processing and transport, can they really be used to estimate the value of the TRF function "provision of non-timber raw materials"? One could argue that in order not to over-estimate TRF benefits, costs such as shadow wages must be subtracted. However, it is important to consider, one way or the other, all the economic activities depending on NTFP availability, or in other words, all the forward linkages of NTFP.
- How can goods that do not enter markets be evaluated? If substitutes exist, their market prices or production costs may be used. An example for such an opportunity cost approach is to ask, what would it cost the government to provide indigenous communities with adequate health care if medicinal plants are lost through forest conversion? Or, if the extracted good serves as input to other sectors, its value may be determined through the increase in that sector's productivity.

Some empirical valuation results in recent years are encouraging for conservationists. For example, Peters, Gentry, and Mendelssohn (1989) have shown in a straightforward way that NTFP (in this case, fruits and latex) are worth much more than timber obtained from the same one hectare of a Peruvian TRF. Forest management for timber as well as forest conversion are therefore nonsensical. Unfortunately, their analysis overly depends on local market conditions, as they do not allow for a possibly self-defeating mechanism of increasing fruit and latex extraction and sinking prices (a typical fallacy of composition). Further problems include that the proximity to a market and ecological richness of the area may not be representative for other TRF areas. Thus, while one may agree that "comparative economics may provide the most convincing justification for conservation and use of these important ecosystems" (p. 656), more research is clearly needed.⁸⁾

In any case, the value of the TRF as resource base for NTFP is only one of several values that are not mutually exclusive. They can thus be added up to determine the total economic value of a TRF under a sustainable multiple-use strategy. One example of such a more comprehensive, while still not

8) "The practical realization of this theoretical potential depends on the existence of appropriate institutional mechanisms" (May, 1991, p. 9). These are discussed in section IV. Myers' (1988) figures for NTFP values should equally be treated with caution.

all-encompassing, study of a TRF area was undertaken by Ruitenbeek (1989)⁹⁾ in a pioneering analysis of a conservation project in Cameroon. He concluded that this project was, by all standards, a good investment.

From the point of economic evaluation, many TRF conversion decisions in the past have been irrational. It should equally be accepted, however, that "some deforestation is economically efficient in the broadest sense of social optimality" (Hyde, Newman and Sedjo, 1991, p. 1). If systematically applied, an extended cost-benefit-framework should be able to separate good from bad management options. It may also have a somewhat didactic appeal, as it prevents "forgetting" environmental functions in the decision-making process. And it is not an 'ivory tower technique' but highly relevant: "The inability of tropical foresters to suggest ways of valuing the goods and services from the forest, which are meaningful to their colleagues in national treasuries and planning ministries, has been a major factor in the continuing loss of these forests" (Poore et al., 1989).

Similar mistakes in the future must be avoided. Planning agencies must be convinced to approach the land-use problem from a different angle than a private resource user: "[An] analysis done from a *private* point of view (a *financial* analysis) may well give different results from similar analyses conducted from *society's* perspective (*social* or *economic* analysis)" (Hamilton and Snedaker, 1984, p. 110). From the point of view of welfare economics, it is the state's role to make socially desirable, i.e. welfare-maximizing TRF management strategies, also privately advantageous. Private decision makers have to be given signals to inform them of the external costs and benefits of their actions, and incentives to pay attention to these externalities. Without these signals and incentives, they would only consider a part of the TRFs functions. Government intervention may then just make the difference between the adoption of two strategies.¹⁰⁾

9) As discussed in Dixon and Sherman (1990), also referred to in World Bank (1992, p. 152).

10) In order to include as many off-site effects as feasible, we take the tropical state as decision-making unit. However, tropical states will only consider costs and benefits of TRF management that accrue within their territories. International externalities are typically not taken into account. If other countries derive benefits from the preservation of TRF, they have to compensate TRF countries to make these benefits felt in the decision-making process. That this does not happen so far may be seen as failure of other countries' governments. Cf., for example, Leslie (1987, p. 52).

Obviously, this is not what most governments have done in reality. On the contrary, public agencies have all too often been biased towards conversion, regarding TRF as some kind of wasteland to be "developed". Examples for socially irrational government behavior with regard to TRF management abound. An empirically well-established case is the conversion of Brazilian TRF to large cattle ranches.¹¹⁾ The economic activity of cattle raising on these marginal land areas is, by itself, rather uneconomic; only public subsidies have made it privately worthwhile. Thus, not only has the Brazilian government wasted money on the promotion of uneconomic enterprises, it has also subsidized the destruction of the former TRFs functions that come with the conversion to single-use land management for pastures.

Reasons for government failure to induce optimal land-use strategies are generally seen in the realm of political economy. Land-use decisions so far have been treated as a problem of the allocation of natural resources. However, the question of distribution of these resources may be just as important. The different functions of a TRF are used by different groups of people, either geographically or in terms of their position in society. As any management strategy will produce a different 'output mix' of these functions, it also entails a different distribution of benefits and costs between those groups of people. Thus, any of the groups will prefer a different management strategy for a particular TRF area, or even a different national forest policy. A decision on land-use strategies then becomes a question of political, economic and bureaucratic power of the respective groups. The result frequently is a pattern of discrimination among resource user groups that finally leads to conversion of the TRF.¹²⁾

11) Compare Hecht, Norgaard and Possio (1988) or Browder (1988) for this specific question, and for an overview of the Brazilian situation in the 1980s Mahar (1989). "Arguably one-half of the forest destruction in Brazil's Amazonia has been the direct result of government subsidies for livestock production and agricultural settlement" (Hyde, Newman and Sedjo, 1991, p. 37).

12) This may be seen as an example for the general observation that "distribution is not only an *effect* of development but is in many cases a *determinant* of both levels and patterns of development" (Ascher and Healy, 1990, p. 2). For an empirical investigation of the causes of deforestation, cf. Kraemer and Hartmann (1993).

III. The Advantages of the Small Business Sector

This chapter will describe how recognising the contribution of the NTFP sector to various policy goals may help to reverse the pattern of socially irrational land-use decisions. It is the complementarity of the arguments in favor of the sector that gives it a strategic role, as focal point of efforts to overcome the institutional problems that have so far prevented better TRF management. Cooperation between the three groups (rural development experts, forest managers, and conservationists) is often insufficient, but the analysis suggest that all their agendas stand to benefit if they join forces to promote the small business sector.

1. Rural Development

Small units based on forest resources belong to a sector that has in recent years attracted some interest in development research and policy alike, the 'rural non-farm sector'.¹³⁾ These small scale non-agricultural activities are an important and growing component of most rural economies. In these areas, development economists are primarily interested in an equitable growth of income, employment, and linkages to other sectors and regions that result in an improved integration into the national economy. Small non-farm enterprises have shown their potential to contribute to these ends, even if they are frequently hampered by inadequate policies characterized by urban bias, large-scale bias, and a bias towards exclusive orientation on agriculture in rural development programs. The following list provides some specific arguments for an improved treatment of the sector in the development process.¹⁴⁾

Development planners concerned with small enterprise development have generally not given much thought to the natural resource base on which the

13) With garment-making and food processing, forest products processing belongs to the three most important components of the rural non-farm sector in most developing countries. Cf. Arnold, Chipeta, and Fisseha (1987). Most data on the sector do not even include extraction activities or itinerant processing activities such as charcoal production.

14) Cf. Hartmann and Peters (1990) for a comprehensive discussion of the rural non-farm sector.

TABLE 1. Advantages of Small Rural Non-Farm Enterprises in Economic Development

- utilization of labor-intensive technologies that generate relatively much employment at low capital costs, especially for poorer landless households
- mobilization of entrepreneurial potentials and provision of business experience
- seasonal variability of employment in accordance with the agricultural labor demand cycle
- employment and training of low-skilled workers that may not otherwise be mobilized for development
- equalization of rural income distribution, if compared to that resulting from the distribution of agricultural land ownership alone
- potential for diversification of the rural economy and reduction of risks
- contribution to a decentralisation of the economic structure and to a reduction of migration pressure towards urban centers
- utilization of local household savings, combined with a high propensity to reinvest
- processing of scattered local raw materials; without these backward linkages raw material production (in agriculture) or collection (from natural areas) may not be possible
- production of inputs for other sectors, for example implements for agriculture; without these forward linkages, especially the development of smaller farms would be very difficult
- development and diffusion of locally appropriate technologies
- production of inexpensive goods for a poor population, increasing its standard of living
- artisanal production of traditional goods that embody local cultural traditions, as opposed to industrial substitutes
- contribution to a competitive environment, especially as against large urban enterprises
- low pressure on foreign exchange for specific inputs, while at the same time offering some export opportunities

sector depends. Raw material supply is frequently taken for granted or is treated as one possible bottleneck among others.

However, in TRF areas the further availability of raw materials should be seen as an absolutely dominating factor for small enterprise development. No NTFP-based units can exist under either the 'preservation strategy', which prohibits extractive activities, or the 'conversion strategy', which removes NTFP with the forest cover. Consequently, forest modification by sustainable multiple-use management is the only strategy in which the rural small-scale sector can participate, and thus the only one that can mobilise its beneficial development effects. While it might be argued that some small units not dependent on NTFP may be possible under the preservation or conversion strategies, or that these strategies' superiority may allow to compensate those who would normally depend on the availability of NTFP, in most cases this appears to be a strong argument for a multiple-use strategy including NTFP extraction.

2. Forest Management

Natural resource managers are interested in rational and sustainable management of ecosystems such as forests. Rationality is less a question of technical knowledge than to be defined in terms of social needs and wants: "Forestry is not about trees, it is about people. And it is about trees only insofar as trees can serve the needs of people." (Westoby 1967, quoted in Leslie 1987, p. ix). This important orientation should not be lost in the context of NTFP. Falconer (1990, p. 16) puts it this way: "In efforts to promote and develop sustainable use systems, many people are turning to 'alternative' forest products ... The problem ... is the focus on the forest product itself: whether timber, nuts, leaves or any other product ... Programme designs should ... focus on people's *needs* in the first instance; of greatest importance is an examination of the functions the forests serve in that context."

In developed countries, the many functions of forests are increasingly recognized and multiple-use management is common parlance. While modern forestry economics is formally rather difficult, some simple results can be mentioned. For example, if not only timber harvests but also

functions that require the forest to remain intact are considered, the optimal rotation period will be longer, i.e. forest management should be less intensive. It may even become optimal not to harvest timber at all. This was first shown with recreation as the function that requires "a standing forest"¹⁵⁾, but it is equally applicable to NTFP extraction.

If natural resource managers such as foresters adopt an economic framework for management decisions, they will frequently choose the modification strategy as being economically superior. (This appears to be also rational in political economy terms - after all, modification should be the strategy with the highest demand for forestry experts). In particular, they will start to appreciate the difference that the recognition of NTFP and related small business can make - the difference between keeping a forest and losing it. "Forest services need more information which demonstrates the importance and potential benefits of small scale enterprises in broadening the base for adding value to forests" (FAO, 1987, p. 14). They also have to understand that land-use decisions concerning TRF generally take place in a policy environment that discriminates between sectors (i.e. pro cattle ranching and logging, anti extraction)¹⁶⁾ and that private returns in these sectors are not a good indicator for social value. In particular, if they recognize that the small business sector is being discriminated against, and its contribution thus underestimated, they should join forces with development economists to remove these distortions and so to increase the sector's weight in policy decisions.

3. Protection of Nature and Ethnic Groups

Conservationists are primarily interested in the stability of ecological processes and the preservation of biological diversity. They are, however, becoming aware that conservation in the developing world requires offering

15) Cf. Hartman (1976). A formal generalized presentation is given in Snyder and Bhattacharyya (1990). For a short critical discussion, see Hyde, Newman and Sedjo (1991, p. 14).

16) However, the anti-extraction bias may not be true for all NTFP, at all times. In Brazil, natural rubber prices have been subsidized to promote self-sufficiency in this raw material. In 1987, prices were three times the world market price, determined by more efficient South-East Asian producers. Compare Schwartzman (1989) and Fearnside (1989).

alternatives to the poor population. The World Conservation Strategy (IUCN, 1980) has expressed this as follows: "Probably the most serious conservation problem faced by developing countries is the lack of rural development."

It is increasingly questioned whether conservation is best served by strict regulations on small scale activities such as NTFP gathering. Some arguments in favor of their inclusion in management plans are:

- As discussed in section III.1. above, rural small enterprises are important for alleviating poverty and improving the local income distribution. A conservation strategy that promotes these units may therefore reduce poverty-related environmental degradation. Handicraft production based on local natural resources, for example, "represents a constructive alternative to destructive land-use practices" (Kerr, 1991, p. 33).
- A recognition of their NTFP-based activities gives the local population an incentive to participate in resource conservation measures. For example, as conservation ensures that the resource base for small business will be available for a long time and does not have to be exploited, its management by local users will be more sustainable. Also, clearly acknowledging use rights for NTFP may give villagers an incentive to help to enforce restrictions on competing uses such as logging.¹⁷⁾
- Up to a certain level of intensity, NTFP-based activities do not significantly influence a TRF ecosystem structure.¹⁸⁾ Given that the local population needs a certain amount of NTFP, allowing extraction in protected areas or at least in the buffer zones that surround them will spread the intensity of utilization uniformly across protected and non-protected TRF areas. This would increase the likelihood that threshold

17) See McNeely (1988).

18) Colinvaux (1989), in a discussion of the origins of species diversity in Amazonian TRF, states: "[The] Amazon basin has always been a place disturbed ... The result today is a mosaic of gaps, successions and mature forest - and a wonderful assortment of plant and animal species ... The fact that species have accumulated in a place of constant change suggests that the fauna and flora can tolerate some human activity, if the activity is on the order of natural intermediate disturbances that always leave survivors." See also Uhl et al. (1990).

levels, above which the activities might become unsustainable, are not reached in any one area.

Such considerations are increasingly playing a part in the design of so-called Integrated Conservation-Development Projects¹⁹⁾, often sponsored by non-governmental international organizations. In these projects, preservation of an environmentally valuable area clearly is the primary objective, and development is only one means to that end. They generally include

- strengthening park management and/or creating buffer zones around protected areas,
- providing compensation or substitution to local people for lost access to resources, and
- encouraging local social and economic development.

The NTFP sector can be a key to generating benefits for the local people, thus giving them a stake in 'their' protected area. Even if the harvesting component of the NTFP sector has to be restricted, local communities might be compensated by a promotion of the processing component, with more value added per raw material unit. Other small scale activities, for example in nature tourism, may also contribute to a change in attitude towards environmental conservation.

However, the performance of such projects has not always been satisfactory in meeting either their conservation or development objectives. Starting from the premise that a certain area had to be saved quickly, "many of the projects started as small-scale conservation initiatives with only minimal rural development expertise and with uncertain funding sources" (Brandon and Wells, 1992, p. 562). If promotion of small-scale activities such as NTFP-based ones is to be successful, program designers have to make use of the hard-won experiences of several decades of small business promotion. There remains a risk, however, that really successful and well-funded projects induce an inflow of people that in turn threatens the resource base.

19) See Brandon and Wells (1992).

A somewhat similar approach to reconciling conservation and small scale development may be seen in the concept of extractive reserves. These are areas specifically designated for low-intensity use such as extraction of NTFP. This concept, building on self-help organisations of forest dwellers such as rubber tappers, has found much interest since its introduction in Brazil in the second half of the 1980s.²⁰⁾ Approximately 1.5 million people in the Brazilian Amazon depend on the TRF for their living, and some 300,000 on natural rubber extraction. Extractive reserves provide an opportunity to give them stable and self-managed sources of livelihood. Similar forms of reserves with safe and reliable use rights need to be established for indigenous groups such as the Amerindians.²¹⁾

These groups depend on the integrity of the forest for their economic as well as for their cultural survival - many would even say, for their physical survival. "For some forest-dwelling peoples ... who have no access to substitutes for the [NTFP] they have traditionally used or no cash income with which to purchase available substitutes, even [the economic value of NTFP] cannot be quantified in monetary terms. Furthermore, the cultural value attached to these forest products cannot be transferred to substitutes; indeed it could be said that their use is an integral part of a way of life that would vanish with the forest" (De Beer and McDermott, 1989, p. 155). Anybody interested in preserving the cultural diversity of mankind should therefore defend indigenous peoples land rights, because their social, economic, and cultural traditions are inextricably linked to the TRF that they live in.

20) Cf. Schwartzmann (1989). By 1991, more than 3 million hectares had been designated as extractive reserves in Brazil, and similar reserves had been created in Peru and Bolivia (May, 1991, p. 11). Peluso (1992) discusses the concept in the Indonesian context and concludes that "the politics of forest management ... are more conducive to village level extractive reserves than to regional, labour-based organizations [as in the Amazon]" (p. 49).

21) "Both of these grassroots organizations [National Council of Rubber Tappers and Union of Indian Nations] are committed to the improvement of transport, processing and marketing of [non-wood forest products] under local management" (May, 1991, p. 10).

IV. Conclusions for Promotional Policies

1. Forest Policy Reform

In many countries, the political attitude towards natural resources in general, and forests in particular, will also be the most important determinant of the NTFP-based sector's development. If forest policy is neglected or captured by special interest groups, if forest services are understaffed and corruptible, and if conversion of TRF is stimulated by the state, there is little scope for the sector. In such a policy environment, direct promotion of small units to make up for external constraints is frequently called for. However,

- great costs can be incurred if small units are 'protected' from an unfavorable policy environment,
- these costs will cause a restriction to pilot schemes and a lack of broad, country-wide effects, and
- small units will not graduate from the protected status and cannot survive a withdrawal of subsidies.

Consequently, promotion should instead be directed at reversing unfavorable policies in the first place. Forest policy reform has been discussed widely in the past few years. For our purposes, the following crucial points deserve attention.

On the local or project level, a framework capable of improving land-use planning has to be adopted. The multiple functions of forests, including those that do not directly translate into monetary returns, have to be acknowledged and the interests of competing users have to be reconciled as far as possible. An important approach is to direct intensive utilization away from primary forests and towards already degraded secondary forests or converted land areas, if they can provide similar benefits.

Some measures local forest services can take for the NTFP sector should have priority.²²⁾ Public forest management may be reoriented to pay more attention to non-timber materials. At the same time, public agencies may

22) Cf. Arnold, Chipeta, and Fisseha (1987).

use their influence in all kinds of forests (including private, communal, and protected areas) to ensure a broad based raw material supply. Licensing and tendering arrangements may be modified and simplified to give small units a chance to interact with the public sector. Forest concession contracts, generally between large concessionaires and the forest service, may contain provisions for the inclusion of small units.

On the national forest policy level, emphasis should be on institution building. First, administrative institutions such as the forest service need to be enabled to deal effectively with competing demands on forest areas. The most important institutional arrangements directly affecting forestry, however, are tenurial arrangements and timber harvest concessions.²³⁾ Insecurity of tenure, i.e. property rights that are insufficiently defined and enforced, and harvest contracts that are shorter than rotations, both contribute to unsustainable land use. Forest services will have to receive guidance as well as competences to correct these policy failures.

On the national economic policy level, one may note the "growing conviction that spillovers from macroeconomic policies and from policies designed for their impacts on advanced wood and fiber processing sectors, and even from policies on altogether different sectors like agriculture may have serious implications for forest-based activities of all kinds" (Hyde, Newman and Sedjo, p. 19-20).²⁴⁾ The ultimate goal here would be to stop any discrimination between sectors that may influence land-use decisions in TRF. As discrimination frequently takes the form of subsidies being paid to one sector but not to the other, this can be a 'win-win-strategy' - relieving the budget while creating a distortion-free policy environment.

23) Cf. Hyde, Newman and Sedjo (1991, p. 19).

24) A good country case study is given by Southgate and Whitaker (1992).

2. Support at the Business Level

Even in a relatively benign policy environment, small units may still face formidable problems. External support to overcome these constraints may be justified with the numerous advantages listed in section III.1., and with the goal "to avoid deforestation by making natural areas economically productive" (Prance, 1989, p. 61). The most important problems appear to be²⁵⁾

- small and insecure markets,
- raw material shortages,
- shortage of finance,
- managerial weaknesses,
- non-availability of appropriate technologies,
- lack of organization.

Any direct intervention has some prerequisites, though. It has to be determined which forest-based activities are viable at a small scale²⁶⁾ and have potential for continued growth. The first criterion for this should be market prospects, the second competitiveness, which in turn depends on the ability to achieve low production costs through good management and high labor productivity. Support should only be given if favorable demand conditions for the sector's products and competitive supply conditions already prevail or can be reached without too much effort. Otherwise, scarce resources will be wasted that could have helped other small units that are ecologically *and* economically sustainable.

A FAO paper of 1987 has stated: "[The] limited resources and capabilities of [forest based small scale industries] mean that [to upgrade], initially they

25) For much of the discussion in this section, cf. Arnold, Chipeta, and Fisseha (1987) and FAO (1987).

26) Small units are competitive (a) where there are factors which favor local production, such as dispersed raw materials, small markets or high transport costs; (b) where the nature of the product does not permit easy mass production (economies of small scale). Page (1978) has discussed an unusual example (timber production in Ghana) where in spite of significant economies of scale, the government chose to promote the small business segment. "Social evaluation of the program ... involves explicit comparison of the increased social costs incurred by small firms with the presumed gains in social welfare arising from more equitable distribution of resource-based rents" (p. 159).

need almost a 'cocoon' of support infrastructure in terms of training, information, technical consultancy, product design and testing, marketing and financial assistance" (p. 12). As a philosophy of promotion, this appears to be fundamentally wrong. All too easy it may become a "cocoon of training and subsidy from which no free-choosing entrepreneurial butterfly would ever rationally emerge" (Lipton, 1984, p. 241). These promotion *packages* have simply not worked in most small business development programs.²⁷⁾

Instead, the real constraints on small business development have to be addressed. At this point, it must be differentiated between "the 'micro' household units, many of which use non-wood raw materials, and the somewhat larger and more progressive workshops" (Arnold, Chipeta, and Fisseha, 1987). 'Micro' units should be further subdivided into gathering and processing activities, and into directly consumptive (subsistence) and market-oriented activities. With direct promotion, any of these categories may need a different approach according to its needs and capabilities. Especially at the household level, the "integration with other activities of the entrepreneur makes it difficult to isolate just the forest-based component" (FAO 1987, p. 8). Lack of relevant and reliable information thus limits the potential for external intervention - a problem that is avoided in forest policy approaches concentrating on raw material availability, for all categories of users.

In order to find out what small units really need in terms of support, and in order to give them a voice in political decisions, their organization above the business level is generally seen to be necessary. Assistance with the formation of such self-help associations, and cooperation with those that have been established independently, should therefore be a priority for promotional activities. In Brazil, "forest peoples' movements are increasingly focusing on the economic targets of improved product pricing, diversification of [non-wood forest products] to cushion against overdependence on insecure commodity markets, and development of cooperative processing, storage and marketing networks" (May 1991, p. 13).

27) The 'state of the art' of small business development is discussed in Fährnel, Hartmann, König, and Meier (1993).

Following this emphasis, marketing support in cooperation with authentic small business associations is probably the most sensible approach if direct business promotion is planned. External donors, in particular, can help to establish marketing links to developed country firms, possibly building on the environmental awareness of Northern consumers. Product diversification may help to avoid some of the dangers of commercialization.²⁸⁾ Among these are the capturing of valuable products and marketing channels by large landowners, traders, or processing enterprises; a risky overspecialization of individual producers; and overharvesting of particular resources.²⁹⁾

3. Issues of Implementation

Hyde, Newman and Sedjo (1991, p. 19) have argued for a "healthy skepticism regarding developing country policy interventions to improve joint production of market and non-market forest resources". They have also noted that analytical and administrative efforts should be concentrated on the most pressing institutional failures (p 54): "[This] is all the more important because domestic forest management agencies are well-known for their inefficient management - even in developed countries ... Asking developing country forest ministries to add staff to correct minor inefficiencies is a sure invitation to add costs exceeding their social gains."

Thus, in any particular case, one not only needs to analyse the *substantive content of policies* but also the *process of policy formulation*, and *implementation procedures*. Translating good intentions into action is all too often hampered by policy advice that is susceptible to the 'implementation gap'. This is "the complex of obstacles that makes it extremely hard for the institutional system to obtain results even after a problem has been correctly diagnosed and a sensible policy has been framed. It includes such familiar pitfalls as political rivalry, regional and

28) Prance (1989, p. 63) notes, for Brazil, that it "will be hard to make extraction viable based solely on rubber and Brazil nuts. However, that is not necessary because there are so many other useful plants in the forest."

29) However, rising prices for commercialized NTFP will induce more effort for protecting and cultivating their sources. For a case study of the effects of commercialization, cf. Peluso (1992).

ethic jealousy, bureaucratic ineptitude, and outright corruption" (Ascher and Healy, 1990, p. 3-4). Policy advisers have to look beyond the narrow confines of their field (e.g., recommendation of technically or socially superior solutions) and recognize the inherent difficulties of the policy-making and implementation process.

If such problems can be expected, the formulation of policies should be simplified and modified accordingly before any measures are taken. Policy reformulation and project design should emphasize approaches that avoid traps, minimize conflict, are intelligible to all concerned, and invite broad participation. This is why this paper has emphasized the complementarity of the different perspectives of rural development planners, natural resource managers, and conservationists. It is their cooperation in problem identification and solution design that will overcome the implementation gap, and make more sensible utilization of tropical rain forests a real possibility.

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