



CHAPTER 2

Forests and rural livelihoods

Most past information about the forest products that local people harvest and use has been narrowly situation specific and of limited relevance in understanding the broader role of such products in livelihoods. However, some recent exercises have focused on identifying patterns of people-forest interactions in different situations, and over time. The present chapter draws on findings from this work³ to examine three main facets of the interactions. The first is the nature of forest-derived inputs into livelihood strategies of different kinds, and how these are changing over time as people's needs and opportunities change. The second concerns the changes that are taking place in forest and tree resources to

³ The principal sources are Townson, 1995a; FAO, 1995; Falconer, 1990; de Beer and McDermott, 1989; Falconer and Arnold, 1989; and other reports cited in these review studies.

which rural people have access. The third relates this information to different degrees of 'dependence' on such inputs, and to other features of the linkages that provide a framework for examining what form of community forestry system and interventions might be appropriate to each.

Forest products in changing rural livelihood systems

Box 4 provides a summary overview of the main features of the relationships between forest outputs and rural livelihoods, and the ways in which they are changing. Forests nearly everywhere provide inputs into rural households' subsistence use, and into their agricultural systems; for many, they also provide a source of income. Access to forest or tree resources can also help rural households diversify their livelihood base and reduce their exposure to risk.

People who live in a forest environment and who practise hunting, gathering and shifting cultivation are likely to draw heavily on that forest and its outputs. In addition to providing a wealth of material outputs of subsistence or commercial value, and the basis for rotational agriculture systems that depend on the ability of bush fallow to revive the productivity of the land, the forest constitutes an integral part

of the social and cultural framework of those living within it. For some, the main importance of the forest is that the energy released by the conversion of forest to farm and bush is a major source of power in society (Davies and Richards, 1991). Or particular areas may be maintained as sacred groves, or forests, or individual species, both animal and plant, have spiritual or other cultural significance.

Elsewhere, the importance of forest products is likely to be mainly in the way they complement other sources of subsistence inputs and income. Though they often do not account for a large share of overall household inputs, these inputs can be particularly important in bridging seasonal gaps, meeting particular needs, helping households tide themselves over longer periods of shortage, and maintaining agricultural productivity.

Some subsistence use is now declining, as households move to a different livelihood stage in which forest inputs have a lesser role. Some use is also declining because of pressures that make it less possible for households to maintain the same level of use as a result of changes such as those summarized

in Box 4. In general, though, subsistence use continues to be widespread, even where people are becoming increasingly integrated into the market economy. Also, the buffer role of the forest as a resource that people can draw upon during periods of agricultural shortfalls or unemployment continues to be very important for many people.

In addition, ease of access to forests, low capital and skill thresholds of entry, and proximity to widely dispersed rural markets for the products enable large numbers of people to generate some income from forest products (FAO, 1987). Income from forest products seldom seems to account for a large share of a household's total income, but it is often important in filling seasonal or other cash flow gaps, in taking advantage of seasonal fluctuations in availability of labour, and in helping people to cope with particular expenses or respond to unusual opportunities (see Box 5). Forest products can also provide a source of 'windfall' income, as when a good crop provides a valuable injection of cash, enabling people to clear their debts or accumulate some capital. In addition, forest product activities may provide an important supplemental source of income that people can fall back on.

These activities can therefore be very important to the poor when they are unable to obtain income, or sufficient income, from agriculture or wage employment, and few other options exist. Though it is often the wealthier people in a community (with greater resources to devote to forest product gathering and production) who are the most frequent users

(Cavendish, 1997; Ogle, 1996; Madge, 1990), the poor usually derive a greater share of their overall needs from forest products and activities.

The activities engaged in by the poor are likely to be labour-intensive, household-based processes, such as collecting and mat making. Many face weak market demand and strong competition. Such activities typically generate low returns, providing little, if any, surplus to invest in livelihood improvement, and they are often tedious and arduous. Therefore, they are likely to be abandoned as more rewarding and congenial alternatives become available, or as rising incomes lead to displacement of the product in the market by



Women processing nuts that will be made into butter. Surveys in six African countries found that small forest product enterprises are often run by women.

Forest outputs and rural livelihoods

BOX 4

LIVELIHOOD INPUT CHARACTERISTICS	IMPACTS OF CHANGE
Subsistence and cultural	
They are an integral part of their social and cultural framework for forest dwellers. For agricultural populations, forest products supplement or complement inputs of fuel, food, medicinal plant products, etc. from the farm system. They are often important in filling seasonal and other food gaps, particularly in hard times. Forest foods enhance palatability of staple diets and provide vitamins and proteins.	Their importance is likely to decrease, but can persist in some uses (e.g. medicinal). They can become more important where farm output and/or non-farm income declines. They are likely to decline in importance as government relief programmes or new agricultural crops make it less necessary to fall back on forest resources, as incomes rise and supplies come increasingly from purchased inputs, or as increasing labour shortages and costs militate against gathering activities or divert subsistence supplies to income-generating outlets.
Agricultural inputs	
Forests provide a starting-point for rotational agriculture and protection. On-farm trees also provide shade, windbreaks and contour vegetation. Trees/forests also provide low-cost soil nutrient recycling and mulch. Other inputs include arboreal fodder and forage, fibre baskets for storing agricultural products, wooden ploughs and other farm implements, etc.	Trees can become increasingly important as a low-capital means of combating declining site productivity, and as a low-labour means of keeping land in productive use (e.g. home gardens). However, increased capital availability and access to purchased products are likely to lead to substitution of forest products by other materials (such as pasture crops, fertilizer and plastic packaging).
Income	
Forest products help to diversify the farm household economy, provide counterseasonal sources of income, and are a source of income in hard times.	They are of continuing importance in coping strategies, and in reducing household vulnerability.

LIVELIHOOD INPUT CHARACTERISTICS

IMPACTS OF CHANGE

Income (cont.)

Many forest product activities have the following characteristics: there is easy access to the resource, with low-capital and low-skill entry thresholds; they are overwhelmingly very small, usually household-based, activities; they are mainly low return; they produce for local markets; they are engaged in by rural households part time, often to fill particular income gaps or needs; they have limited growth potential, but are very important in coping strategies of the poor, and are often particularly important for women (as entrepreneurs as well as employees).

Some forest products provide the basis for more full-time and higher-return activities usually associated with higher skill and capital entry thresholds and growing demand.

With increasing commercialization of rural use patterns, some low-input, low-return activities can grow. However, others may produce 'inferior goods' and decline, some are displaced by factory-made alternatives, and others become unprofitable and are abandoned as labour costs rise. Gathered industrial raw materials tend to be displaced by domesticated supplies or synthetic substitutes.

The activities are likely to prosper, particularly those serving urban as well as rural markets; as this happens, an increasing proportion of processing and trading activity becomes centred in small rural centres and urban locations.

purchased alternatives, or as increasing pressures on household labour resources make such low-value, labour-intensive activities no longer competitive. Other activities are likely to be attractive only temporarily, such as woodfuel production and sales engaged in by immigrants or young men in the process of clearing land in order to create their own farms.

The characteristics of easy access to the resource and low entry thresholds enable many women to generate income from forest product activities. Surveys in six African countries found that 42 percent

of the proprietors and 41 percent of the total workforce in small forest product enterprises were women, who dominated in grass, cane and bamboo activities and in forest products trade (Arnold *et al.*, 1994). Forest product processing may often be performed at or near the home, allowing women to combine these income-earning activities with other household chores (such as child care), and gathering of forest products for the market can often be accomplished in conjunction with other collecting activities. Such activities are often an important source of the income that women need to meet the

cost of feeding and clothing the family and their other needs for cash; more than men, they can rely on forest-based activities for the generation of income (see Box 5).

Expanding and growing forest product activities are more likely to be found where per capita incomes are rising, and where there is growing demand from rural and urban markets. Where this is happening, production and selling of forest products increasingly shift from being part-time activities engaged in by large numbers of people to being more specialized year-round operations engaged in by a smaller part of the population (Liedholm and Mead, 1993; Haggblade and Liedholm, 1991). As the production and vending activities characteristic of such situations frequently require skill and capital, they are often not available to those who were previously engaged in the simpler forest product activities. They are more likely to be captured by the wealthier and better-educated members of rural communities, who are responding to market opportunities rather than to pressures to find some source of income.

It is therefore often necessary to be able to distinguish between the forest product activities that feature in the survival strategies of the very poor and those that can help to increase the incomes of households operating in a more dynamic economic environment. This can be very important in determining what support and intervention measures may be appropriate. A single region can contain both stagnant and growing activities (see Box 6).

Changes in patterns of supply of forest raw materials

Clearance for agriculture, destruction and degradation due to logging, and overuse of remaining forest and tree resources, reduce the options available to local users. As market opportunities increase the value of forest products, de facto privatization by the wealthier and more powerful users, or appropriation by the State or industrial interests, can exclude many users from access to what is left. Where reliance of rural people on wage labour is increasing, it is likely that they are not able to devote as much labour to gathering or trading forest products, effectively reducing access to more distant forest resources.

Combinations of these factors mean that rural people have often increasingly been concentrating their harvest of forest products in areas of bush fallow and farm fallow on their own lands, and on resources they can create by growing trees on, or adjacent to, their farms. In a recent study of populations in the forest zone in southern Ghana, for instance, nearly half of those surveyed reported the farm bush as being their most important source of forest products, and more than a quarter drew mainly on the farm. Some of the forest products that contributed most to household incomes, in fact, proved to be by-products of farm activities, such as palm wine and distilled spirit produced from



The role of forest products income in selected rural household situations

BOX 5

- A study in Sierra Leone found that the sale of fuelwood provided the first cash income from land cleared for rice production. Subsequently, fuelwood collection for the market was concentrated in the off-peak agriculture period, providing cash income during a period when food supplies are generally at their lowest (Kamara, 1986).
- Income from the collection and processing of babaçu palm kernels in northeastern Brazil was shown to account for 39 percent of cash income and 34 percent of total household income during the seasonal slack period in agriculture. Many of the poorer farmers were dependent on this cash for purchasing seed and other inputs for the new season's planting (May *et al.*, 1985).
- A study in the forest-savannah zone of Guinea found that needs for fuelwood and poles are mainly met from by-products of the agricultural cycle, and that farmers sequence their wild plant collection and trading incomes with seasonal needs (e.g. the need to purchase seeds, to hire labour for cultivation, and to buy food at harvest to be processed and sold during the dry season). Many women traders generate their working capital from cropping, gathering and processing, in sequences in which one activity's output becomes another's input (Leach and Fairhead, 1994).
- In western Niger it was found that income from forest products from the commons rose as a share of household income from 2 percent in the harvest season to 9 percent in the hot and rainy seasons and 11 percent in the cold season. Cash income from these sources was sufficient to purchase between 9 and 28 percent of the household's annual caloric needs. The poorest third of households was more dependent on this source of income than the richest third, and women (for whom it represented 27 percent of their income) were more dependent than men (for whom it represented 10 percent) (Hopkins *et al.*, 1994).



Differences in performance of small woodworking and grass/cane/bamboo enterprise activities in Africa BOX 6

In six countries surveyed recently in southern and eastern Africa (Botswana, Kenya, Lesotho, Malawi, Swaziland and Zimbabwe), an estimated 321 600 people were engaged in small-scale grass, cane and bamboo production and vending activities, and 202 500

in small-scale woodworking activities.

Enterprise birth rates were very high, but so were closure rates, particularly in the early years of the enterprise. Employment in those enterprises that had survived had been growing at 30.6 percent per year in woodworking, but at only 3.1 percent in grass, cane and bamboo. However, only a minority of small forest product enterprises had grown at all. At the time of the surveys, about 80 percent of jobs existing in grass, cane and bamboo enterprises came from new start-ups. In woodworking, in contrast, 55 percent came from expansion of existing enterprises. Of those that did grow by adding to the workforce, most grew only by small amounts. Only in woodworking did a substantial share (30 percent) of the growth in employment come from enterprises that developed from being very small to being intermediate in size.

The faster growth in woodworking enterprises reflects: (a) a low-cost technology that allows units to expand and upgrade incrementally by adding more and better equipment; (b) the improved efficiency that comes with increase in unit size; (c) growth in urban as well as rural demand for their products; and (d) a high proportion operating in premises outside the home in locations closer to markets and services. In contrast, grass, cane and bamboo activities are overwhelmingly single-person activities operating from the home, and they produce products (baskets and mats) that are being displaced in their rural markets by alternative products. Their poor competitive position tends to be aggravated by low skill and capital barriers to entry to these activities, resulting in excessive numbers of producers, intense internal competition and marginal returns to labour, and by lack of affordable technology options to improve returns to labour.

Source: Arnold et al., 1994

oil-palm grown as an agricultural crop, and wood-fuels from wood generated in clearing fields for cultivation (Townson, 1995b).

Often the process of clearing land for cultivation, which is followed by a fallow period, involves a measure of manipulation of the tree cover to favour species and products of local value. In addition, the planting of trees by farmers is observed to be increasing nearly everywhere. As discussed in Chapter 4, this is done not only to maintain supplies of tree products as access to off-farm supplies declines, but also to improve the efficiency with which farm household resources are used (Arnold and Dewees, 1997).

Notable features of the changing context within which people presently use and manage forest products are, thus, this progressive shift from forest to non-forest tree resources as a source of supply, and the shift within forest resources to stocks that the individuals can control in conjunction with their agricultural activities. Community forestry can therefore have as much to do with agriculture and agroforests as with forests.

However, where fallow cycles are declining, bush fallow and farm bush are also likely to be diminishing as a resource. Moreover, the shift from forest to farm as a source of forest products is only possible for those who have access to land and sufficient resources to work that land. In addition, in many situations, poor farmers still need to look to off-farm resources to help supplement what they can pro-

duce on farm. Consequently, access to forests that are available as common pool resources continues to be important for many rural households.

Evolving patterns of people, resource and product interactions

The main trends discussed above can be summarized as follows.

- Large numbers of rural households in developing countries are still subsistence users of forest or tree products. Though the role of such products in their livelihood systems may often be declining, and though supplies often come from managed tree stocks as well as from natural forests, forests often continue to serve as an important source, and as a reserve to be drawn on more heavily in difficult times.
- Labour-intensive, easily accessed activities producing simple, low-cost forest products can be an important source of income in the survival strategies of poor households unable to obtain sufficient income from agriculture or wage employment. However, these activities have less potential to contribute to livelihood enhancement.
- Where per capita incomes are rising, such labour-intensive, low-return activities tend to



Women with medicinal plants in Guinea. Large numbers of rural households in developing countries are still subsistence users of forest and tree products.

give way to more productive and remunerative activities that meet growing and diversifying rural and urban demands. Production and selling of forest products thus increasingly shifts from being a part-time activity engaged in by large numbers of people to being a more specialized year-round activity that is carried out by a smaller part of the population.

These patterns can be modified in a number of ways as, for example, where worsening urban poverty temporarily increases demand for low-cost forest products that would normally have been displaced in urban markets. Over time, however, though some forest products can be expected to become increasingly important, others will fall out of use. As a result, some forest product activities will become redundant and will decline. In particular, as costs

rise and competition intensifies, activities that generate only marginal returns for those engaged in their harvest and sale are unlikely to survive, and will persist only so long as the participants have no better option.

These features and trends also have different implications for households that are literally dependent on the livelihood inputs from forests and trees, and for those that have alternatives and that use forest products by choice rather than by necessity. Though the forest product activities to which they have access may provide little opportunity for livelihood enhancement, they can be critically important for the very poor, for whom they can be as important as the potentials for income growth that forests and trees can provide to those able to benefit from such opportunities.

The challenge for community forest management can therefore be manifold. In any particular situation, different categories of user are likely to possess different combinations of assets and opportunities, and will consequently place different demands upon the forest resource. It may be necessary to manage an area of forest to meet the needs both of those wishing to expand commercial activities and of those seeking to maintain subsistence and coping uses (and to do so in an equitable manner). Managing for sustainable flows from forests may need to be harmonized with the growth

of new sources of supply from tree resources outside the forest. In addition, as both needs and opportunities are continuously evolving, it becomes necessary to try to devise management and governance systems that are not only appropriate to the present situation, but are also capable of adapting to future change. One of the questions that needs to be asked about the community forestry systems reviewed in Part 2 of this publication, therefore, is whether they are likely to be able to respond to the kinds of shifts in patterns of supply and demand outlined in this chapter.

