

# Forests for People

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## Community Rights and Forest Tenure Reform

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# 8

## Communities and Forest Markets: Assessing the Benefits from Diverse Forms of Engagement

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*Pablo Pacheco and Naya S. Paudel*

This chapter explores the engagement of smallholders and communities with forest markets in the context of tenure reforms. Tenure reforms, in theory, should enhance these actors' access to forest resources and thus improve the benefits accruing from commercial forest resources use. In practice, however, it is not that simple. On the one hand, markets for forest products can provide alternative sources of income streams for smallholders and communities.<sup>1</sup> On the other hand, they may constitute a channel for the transfer of economic rents to other actors better positioned in forest markets. These two situations coexist to differing degrees. Most often, communities that choose to market their forest products, whether timber or non-timber forest products (NTFP), are able to generate cash income but often do not earn as much as expected because of benefit flows to traders, intermediaries and timber processors up the value chain and thus communities are often relegated to a role as raw material providers.

This chapter argues that the income that communities capture from the sale of forest resources depends not only on their ability to manage and process these resources effectively and efficiently, in both economic and ecological terms, but also on market factors. These factors are clustered into three sets of issues: the capacities that smallholders and communities have to interact in forest markets, the conditions under which such markets work and the ways in which communities engage in markets. A typology encompassing four kinds of community engagement with forest markets is developed, and seven cases from four countries provide examples of how these situations unfold in practice.

The next section provides a brief literature review about community forestry and market integration. We then explore three sets of variables (community

capabilities, market development and forms of market engagement) to build a typology depicting four situations of community integration to forest markets. Case studies of communities under the different situations of market engagement follow. The subsequent section discusses ways to enhance forest benefits to communities. Finally, the last section concludes the chapter.

## **Relationships between communities and forest markets**

According to Hayami (1998), two contradictory perspectives dominate the analysis of community interactions with markets. Some analysts see market engagement as an avenue for reversing the situation of deprivation that communities often face (Hallberg, 2000) and communities have to enhance their capacity to compete in the market. Others see markets as entities working against the poor, since they facilitate surplus appropriation and transfer from subordinated sectors, such as rural communities, to economic sectors, such as logging companies or industry (Watts and Goodman, 1997), and maintain that integration to markets is not a panacea for enhancing forest users' livelihoods (Pokorny and Johnson, 2008). The former perspective dominates the current discussion (see Donovan et al, 2008a, 2008b).

The relationships between communities and markets are determined in part by the capabilities that communities have to compete and to derive benefits from markets. A growing body of literature suggests that communities must improve their competitive position in such markets by creating and managing forestry enterprises, establishing long-term relationships with buyers, processing marketable products and gaining access to financial capital (Donovan et al, 2008b). Access to markets and to information about market conditions, along with bargaining power and negotiating expertise, are also important factors (Macqueen, 2008). Adding value is assumed to be desirable, and this implies vertical integration of production and processing (Donovan et al, 2006). In many cases, it is likely that vertical integration enhances competitiveness in the marketplace, in that more integrated enterprises become more competitive and thus obtain higher profits, but that may not always be true (Antinori, 2005).

Communities' ability to benefit from markets is also shaped by market structure. Molnar et al (2007) observe that local wood producers are increasingly forced to compete with low-cost, high-volume multinational companies. The growing importance of domestic markets, however, tends to work in favour of community forestry. These authors suggest that producers can find competitive advantage in lower transportation costs and enough supply flexibility to satisfy domestic market demands. Markets for NTFPs are highly diverse and accordingly require different livelihood strategies (Belcher et al, 2005): some are sold in local markets, others (for example Brazil nuts, Stoian, 2004) reach distant regional and international markets.

Yet another factor affecting the relationship between communities and markets is the regulatory framework. To participate in markets, smallholders and communities need a level playing field, without institutional hindrances, high transaction costs or direct barriers (Kaimowitz, 2003a). Conditions that

favour small-scale producers and communities are low costs of market entry and a low-cost regulatory environment with minimal harvest, transport and sales permits (Scherr et al, 2004).

Some researchers have examined the relationships taking place outside the forestry regulations – the informal and illegal marketplace. The drivers of illegal logging have been explained elsewhere (Contreras-Hermosilla, 2001). Illegal logging has important implications for market functioning. It distorts timber markets by depressing prices, but many people, including the poor and unemployed, derive income from illegal logging and consumers may also benefit from the lower prices (Tacconi, 2007b). The environmental implications of illegal logging are ambiguous, although it is likely that those with more limited access to markets and less capital are going to destroy less forest than wealthier groups (Tacconi, 2007b). Informal markets tend to show more asymmetric relationships and often penalize the sellers with lower prices (Pacheco et al, 2008b).

This chapter does not consider markets either virtuous or evil, but depending on how they operate in practice they may benefit smallholders and communities, or they may disadvantage these actors by transferring economic rents from forest resources to others. Markets may even do both of these things at the same time. We argue here that whether markets help or harm communities depends on both endogenous factors (community capacities to compete) and exogenous factors (market conditions and policy environments).

## Typology for assessing market engagement

An analytical framework helps us to understand community interactions with markets by looking at three sets of factors. The first are related to the *community's capabilities* for engaging in the markets – physical access to markets, bargaining power, knowledge of market dynamics and organizational capacities. The second are factors relating to conditions of *market development* – price distortions, incomplete information due to asymmetric relationships and state control over the market, among others. The third set of factors involves *forms of market engagement* – the type of product and whether the relationship with the market is stable or sporadic.

Seven case studies have been selected to explore how community capabilities, market development and forms of market engagement affect benefits from commercial forest resource use. Five of the seven cases come from Latin America, where communities are involved in timber markets to a greater degree than in other regions.

The first two cases engage indigenous communities managing their forests with commercial aims: Layasiksa in the North Atlantic Autonomous Region of Nicaragua and Cururú in Guarayos, Bolivia. Here, market relationships are mediated by a community forest enterprise, mainly for commercial logging, which manages activities along the value chain from logging to timber processing and commercialization. The next two cases are a community in the Bolivian northern Amazon and the Suspa community forestry user group in Dolkha,

Nepal. Both communities depend largely on the sale of NTFPs. The next two cases – smallholders in Iturrealde, La Paz, Bolivia, and in Porto de Moz, Brazil – represent situations in which smallholders make individual decisions over their forests, often outside the law. Finally, the Sundari community forest user group (CFUG), in Nawalparasi, in the *terai* of Nepal, involves selling timber largely within the community. Table 8.1 summarizes the way in which those cases relate to our typology of community capabilities, market development and forms of market engagement.

The three sets of variables cannot be analysed in isolation and it is precisely their interactions that explain the diverse ways in which smallholders and communities interact in the markets, whether for timber or for NTFPs. Table 8.2 correlates the community (or smallholder) capability variables with market development variables, creating four forms of market engagement:

- 1 community forestry enterprises with high capabilities operating in well-developed markets;
- 2 smallholders and communities with low capabilities engaging with relatively well-developed market networks;
- 3 smallholders with little capacity and engaging in poorly developed markets; and
- 4 probably less common, communities with good capacities but marginal connections with markets.

Adopting this typology constitutes a useful way to assess specific cases.

## **Seven cases of community engagement with markets**

### *Linking to markets through community enterprises*

In the following two cases, community forest enterprises are linked to markets through formal contracts with timber companies, often with the mediation of an NGO, which provides technical assistance and helps build alliances between the community and the enterprises. Although these communities tend to obtain good financial returns from commercial logging, they also have little freedom to choose competitive markets. The two cases show that larger benefits can be obtained from the sale of sawn wood if the communities can surmount the technical and managerial challenges; otherwise they would remain providers of raw material for large-scale enterprises.

*Layasiksa community in the North Atlantic Autonomous Region (RAAN), Nicaragua* Indigenous and ethnic communities in Nicaragua's Caribbean Coast autonomous regions are gradually obtaining formal titles to their forests and other traditional lands. A 2002 law ensured formal recognition of rights to indigenous communities, but real interest in titling indigenous territories emerged only five years later, with the return to power of the Sandinista political party. Yet titling has been slow. Layasiksa sought and gained formal recognition in 1996 for part of the territory it claimed (35,000ha), but several

**Table 8.1 Factors shaping market participation in seven sites**

	RAAN (Nicaragua)	Guarayos (Bolivia)	Northern Amazon (Bolivia)	Dolkha (Nepal)	Iturrealde (Bolivia)	Porto de Moz (Brazil)	Nawalparasi (Nepal)
Community capabilities							
Access to markets	Via logging road off main highway (periodically maintained dirt road)	Varies with proximity of community lands to main road	Depends on distance to main city and access to rivers or roads	Timber transport difficult, but some NTFPs are sold at roadhead	Varies; major settlements are close to main road	Timber markets distant; some buyers are in local urban centre	Via main national highway passing through village
Bargaining power	Logs are sold to company that pays slightly less than market price; sawn wood is negotiated and sold in capital	Little power; high dependence on financial capital from loggers, though power of negotiation has improved through collective forest management	Little power to affect price and compete with Brazil nuts gathered outside community lands	Low bargaining power; producers are far from market and farmer organizations are weak	Little capacity to negotiate with buyers; most operations are small-scale and informal	No power to negotiate price and sale conditions; relationships with local loggers are sporadic	Low bargaining power; heavy regulatory restrictions on sale of timber outside community
Knowledge of markets	Good knowledge of market options for logs and sawn wood; community hires sawmill services	Limited; no channels of market information exchange, little experience	Good knowledge; access to financial capital is provided through patron-client relationships	Poor knowledge; limited literacy, of mass communication; distant from markets	Fragmented, limited to needs of buyers in specific timber transactions	Limited, with little opportunity to acquire information; market is poorly developed, timber demand is sporadic	Limited and skewed; reliance on small business operators for market information
Organizational capabilities	Good skills for managing forest resources, with help of outsider organizations	Still precarious but improving through creation of community forest enterprises	Varies with development of community organizations	Strong organization, good social capital and collective initiatives; naive in dealing with markets	Not apparent; logging operations are individual, mainly outside law	Weak; economic activities are carried out on family basis	Weak capacity to participate in market

Market development	Negotiation based on species available according to management plans, along with volumes and quality, which define final price	Highly influenced by local sawmills that finance community logging operations	Annual price negotiation, prior to harvesting season, involves industry, landholders and gatherers	Buyers set prices for NTFPs; prices very low compared with market price in Kathmandu	Price set largely by timber traders, with little influence from smallholders	Timber price set largely by local loggers in regional industry	Price for internal sale set by CFUG leaders; exports restricted
Process of price formation	Communities depend on support from outsiders to access market information and negotiate prices	Unequal access; information is transmitted through informal channels	Lack of information channels, little knowledge of market trends	Information on market and price is available largely through NTFP traders	Information is transmitted through informal and illegal networks	Access to market information is controlled by industry and traders	Information is transmitted through informal channels
Availability of information	Timber markets relatively well developed, with several regional companies and local loggers	Several buyers interested in buying timber from communities	Market controlled by several industries; large number of traders	NTFP market controlled by small number of traders linked to Indian markets	Several buyers, largely financed by capital from outside region	Market controlled largely by several buyers who finance informal logging operations	Domestic market controlled by government-owned corporation; small businesses operate locally
Presence of buyers	Export of logs and planks banned; no market regulations in internal markets	Exports of logs banned; no market regulations in internal markets	No market regulations for internal timber markets	Sales outside community members are heavily regulated	Exports of logs, banned; no regulations for internal markets	No market regulations for internal timber markets	Sales outside community are heavily regulated; high transaction costs
Market regulations	Forms of market engagement	Timber species, as determined by market demand	Brazil nut, which is widely available	Mainly unprocessed NTFPs; essential oils are recent products	Valuable timber species largely extirpated in other forest regions	Several timber species with demand in regional market	Timber for household consumption, sold within community
Stability of transactions	Stable interactions in roundwood and sawn wood markets; logging only in three-month dry season	Annual sale from harvest, based on forest management plans	Seasonal market	Annual sale at time of collection	Sporadic engagement with market	Sporadic engagement with market	Annual, usually during winter

Table 8.2 *Types of engagement in forest markets*

Market development	Community capabilities	
	High	Low
High	Enterprises with stable integration to forest markets	Individuals or community groups with limited integration to markets
Low	Well-organized community groups not integrated to markets	Individuals with sporadic interactions in forest markets

years passed before the community could enforce its exclusive rights over that area and it is still negotiating certain borders with neighbours (Larson, 2008). The community of Layasiksa has created its own community enterprise, *Kiwatingni*.

The community developed two forest management plans and certified its forest operations with help from donors. Technical staff from the World Wildlife Fund (WWF), who had supported *Kiwatingni*, have established their own company, *Masangni*, which plays an important role in contracting, oversight and community training. *Kiwatingni* contracts with *Masangni* to obtain the services of a forester for the development and oversight of the annual operating plan. *Layasiksa* has relatively diversified forest operations, which range from log harvesting to sawn wood production. One of the management plans (covering 4950ha) is for a ten-year concession to the company *Prada S.A.*, which owns a sawmill in the neighbouring municipality, and the other (covering 4664ha) is managed by *Kiwatingni* (Argüello, 2008). Both plans involve broadleaf forest.

The *Prada* concession is for the sale of standing timber, which is sold at US\$6/m<sup>3</sup>; the community signed the contract in 2002 without any provision for renegotiating the price over the ten-year term and was hence forced to sell at this price, despite rising timber prices, until *Prada* agreed to pay US\$7/m<sup>3</sup> for wood harvested in 2008 (Larson et al, 2008). The community does not participate in any of the harvesting decisions, which have all been ceded to the company. Thus, community efforts are concentrated in the second area, where *Kiwatingni* makes all decisions regarding choice of species, harvesting techniques, percentages to sell as logs or as sawn wood and so on. Since it does not own heavy equipment or sawmills, *Kiwatingni* hires service providers for hauling, transportation and milling and supervises them closely (Larson and Mendoza-Lewis, 2009).

All the round wood is sold to *Prada S.A.*, which pays a slightly lower price for logs than other buyers, but it pays cash on delivery, is not as strict about quality and purchases additional, less valuable species, since its main product is plywood. It also provides all the fuel required for *Kiwatingni*'s operations (Argüello, 2008). The community is thus highly dependent on *Prada S.A.* The community also produces sawn wood by hiring milling services, and it has

always worked with the same sawmill owner even though there are several local portable sawmills. The community hires local truckers to transport wood to Managua, the capital, as needed (Argüello, 2008).

Marketing has been carried out directly with clients rather than via traders. Masangni plays a central role in marketing. Masangni, WWF and other donors that support Layasiksa help negotiate prices, promote the use of lesser known species and lobby for the use of certified wood. Buyers are mostly in Managua, two days' travel from the community. There are no large buyers who would purchase all of the species, sizes and qualities sold, though a single buyer purchased 70 per cent of the sawn wood in 2007. There are no formal contracts, hence there are no legal obligations for buyer or seller, just a 'note' indicating volume, quality, species, dimensions, price and means of payment. When one buyer failed to pay by the agreed date, Kiwatingni had no legal recourse, but at the same time this arrangement gives the community more flexibility (Larson et al, 2008).

The sale of round wood generates a net financial loss, mainly because of the high cost of equipment rental from the service provider. This loss is absorbed by the gains obtained with sawn wood production, which has a net return equivalent to 21 per cent (Argüello, 2008). In 2007, Kiwatingni made a profit of about US\$17,500, or 9 per cent, which is low compared with similar enterprises. This amount includes the costs of training and technical assistance as production costs, which were actually paid by Masangni. By the community's own accounts, which do not include these costs, they earned about US\$30,000 in profit (Larson and Mendoza-Lewis, 2009).

This case shows that a lack of competition for service provision raises production costs; that inadequate access to capital leads to unfavourable dependent relationships with a large company, and that ongoing outside support, particularly with regard to marketing, is needed. At the same time, the community earned almost US\$22,000 in wages. As a whole, this means that about US\$0.43 on every dollar generated along the chain from planning to sale went back to the community (Argüello, 2008).

*Community forest enterprises in Guarayos, Bolivia* Guarayos is a province of Bolivia's Santa Cruz department, which is home to the Guarayo indigenous people and a rapidly changing forest frontier. In 1996, this indigenous group presented a territorial demand for 2.2 million ha to the government; areas totalling 1 million have already been titled (Albornoz et al, 2008). The remaining areas face intense pressure from medium- and large-scale landholders, who are also demanding clear tenure rights for their agricultural and livestock operations. A 1996 law initiated a process of land regularization (*saneamiento*) to clarify tenure rights for individual landholders and indigenous land claims. Furthermore, around 562,000ha of production forest was granted as concessions to 11 timber industries after the approval of the Forest Law in 1996 (Vallejos, 1998). The proximity of Guarayos to a paved road connecting the cities of Santa Cruz and Trinidad, urban centres in the Bolivian lowlands, has increased interest in the area's forest resources.

The indigenous communities wanted to develop timber management plans as a strategy for consolidating their hold on forest areas that were not occupied and were thus viewed as available to outsiders. From 2000 to 2004, six indigenous groups gained approval for management plans in forests around their communities and created community forestry enterprises, often with the help of forestry projects and NGOs. In total, 211,178ha of forest was placed under management plans, with individual plans ranging from 2,433ha to 60,000ha (Albornoz et al, 2008).

The community of Cururú formed the Cururú Indigenous Timber Association in 2001, based on a strategy for supporting communities developed by a USAID-funded forestry project, the Bolivia Sustainable Forest Management Project (BOLFOR) and other NGOs. The community comprises about 40 families, who set aside an area equivalent to 26,420ha for forest management (Albornoz et al, 2008). The forest management plan was approved in 2002, with a 30-year harvesting cycle. Since that time, the timber association has been undertaking annual forestry operations, which by 2009 constituted the most important economic activity of the community. In 2007, Cururú was able to certify its forestry operations under the Forest Stewardship Council (FSC), though this was possible only with the financial support of external donors and timber companies that buy round wood from the community and had already certified their custody chains.

In 2002, the association placed six species on the market and sold a total of 1030m<sup>3</sup>. In 2003, it sold round wood to the companies SOBOLMA and Monteverde. Since 2006, it has increased its portfolio of buyers to include the main companies in the area – INPA Parket, La Chonta and CIMAL (Albornoz et al, 2008). CIMAL agreed to a five-year contract with the timber association, with prices and volumes to be negotiated on an annual basis. That has led to a significant increase in cash income from logging since 2007. Whereas in 2002 the community obtained a profit equal to US\$14,900, it more than doubled in 2007, reaching about US\$34,500 and generating a significant income stream for the families involved: US\$1014 per family (BOLFOR II, 2007).

The influx of timber income has had significant implications for the community economy. People's livelihoods have shifted from subsistence agriculture and off-farm wage work to forest-based economic activities, allowing young men to remain in the area rather than migrating seasonally to work outside the community. However, tensions have increased over the distribution of benefits from the management plan. Income is sporadic, with cash payments often only available in the months following the annual harvests, sometimes after substantial delay. Also, at times, tensions have appeared between families of leaders, who have invested more and thus earn more from the project, and their neighbours (Albornoz et al, 2008).

### *Communities in non-timber forest products markets*

The next two cases exemplify community engagement in the marketing of NTFPs. These markets feature a large number of suppliers and buyers, and

patron–client relationships tend to dominate market transactions. Low entry costs encourage many individuals to supply small amounts of product, resulting in huge supplies and sometimes attracting a large number of buyers organized in complex networks. These networks are ultimately controlled by a few buyers and industry.

*Brazil nut cooperatives in Bolivian northern Amazon* The Bolivian northern Amazon is a remote forest frontier now connected to the rest of the country by a new road. Historically, NTFPs have been the basis of the region's economy. Initially, in the late 19th century, occupation of the region was driven by the rubber boom but later shifted to other NTFPs. Brazil nuts (*Bertholletia excelsa*) have been a principal NTFP extracted from Bolivia's northern forests since the mid-20th century and more recently have become the foundation of the regional economy (Stoian, 2000). In fact, since 2003 Brazil nuts have been one of Bolivia's more important forest exports. Brazil nuts are collected in the forest during the rainy season, from December to April. Nuts left in the forest deteriorate rapidly.

Rural forest concessionaires, private landowners, *barraqueros* (the holders of *barracas*, the units of forest exploitation in public forests) and smallholders participate in this economy. Smallholders have recently gained communal property rights over large expanses of tropical forest and may account for a third of total production (Bojanic, 2001). Their rights are based on customary claims to territory traditionally used for nut gathering on lands that were claimed until recently by *barraqueros* (Assies, 2008). Independent communities now hold lands adjacent to those of *barraqueros*, who continue to control some land and trees and organize production in enclaves with wage labourers.

Brazil nut collection constitutes one of the most important sources of income for communities today, supporting families throughout the year (Stoian, 2005). Local markets are governed by a complex network of informal but highly developed institutions. Entry is relatively easy, with household-scale production and low capital inputs. The rise of Bolivia's processing industry has been crucial for the growth of the Brazil nut sector. Some companies own *barracas*, but most finance *barraqueros* and traders to secure access to raw materials for their factories. *Barraqueros* use such financial resources to hire seasonal workers to collect the Brazil nuts on their lands. In turn, communities sell their production to traders, from whom they receive small cash advances to begin gathering nuts.

Producer cooperatives have increased the influence of smallholders in the commodity chain, as well as their participation further along the chain. For example, the COINACAPA forest cooperative formed in 1998, with 41 members (see Chapter 6). In 2008, it had 465 members from 40 northern Amazon communities. Members are not required to sell all their production to the cooperative and many sell a portion to local traders to maintain a relationship with them as well as to spread the risk (Albornoz and Toro, 2008). The harvest is placed in crates that can hold 20kg of nuts. On average, a smallholder collects about 200 Brazil nut crates per year at a price of \$8.50

each, making a total of US\$1700 per year. Brazil nut prices are negotiated every year among representatives of the processing industry, *barraqueros* and seasonal workers. International prices skyrocketed in the middle of the first decade of this century but then fell rapidly as a consequence of the international economic downturn.

COINACAPA contracts a processing plant for shelling (rather than exporting them with shells), then exports to Fair Trade and organic brokers. Currently, the cooperative produces 112 tons annually. The prices obtained in the organic market are a bit higher, about US\$0.10 to 0.15 per pound. Producers are paid the local market price at the time of harvest, then COINACAPA distributes profits after processing and sale. This has usually meant an additional payment of about 50 per cent of the original market price and the second payment arrives several months later – just as cash income generated during the harvest is running out.

*Suspa community forest user group in Dolkha, Nepal* The Suspa community is in the Dolkha district, in the mid hills close to the Himalayas about 100km northeast of Kathmandu, the capital city. Dolkha's altitude ranges between 2500m and 4000m above sea level and the terrain is very difficult. Only one road traverses the district and it is more than two hours away. The community depends predominantly on subsistence farming combining crops, livestock and forest management (Banjade and Paudel, 2008). Suspa's 303 households have been managing 645ha of forest since 1995. All households in the settlement are members of the CFUG. One member from each household is represented in the general assembly. A 15-member executive committee carries out everyday management decisions and all its decisions must be endorsed by the general assembly.

The forests here are rich in both timber and NTFPs. The community is dependent on the forests for construction material, grazing, fodder, fuel wood and many agricultural implements and wooden household utensils. The timber sold in 2006–2007 to members of the community was worth US\$2228 (Paudel et al, 2008a). The CFUG has a decent stock of harvestable timber and a good market, especially in the district headquarters (two hours' walking distance away). Nevertheless, forestry regulations do not account for the complexities of high-altitude forests. For example, collection fees and high transportation costs make it expensive to take unprocessed timber to the market, but there is a prohibition on establishing sawmills inside the forests. Altogether, the forest contribution to members' household income is relatively small, 13 per cent of the total (Paudel and Banjade, 2008a).

The collection and sale of NTFPs is managed by the authorities in a relatively relaxed manner. CFUG members can individually collect and sell NTFPs to traders. Most people involved in timber harvesting operations as paid labour also collect NTFPs, including lokta (*Daphne bholua*) and argeli (*Edgeworthia gardeneri*) for the paper industry. The paper industry sets the price for these raw materials. In some cases steamed and shelled argeli is sold to a trader in Kathmandu who finally exports it to Japan. Other NTFPs are

mushrooms, which are sold in the district headquarters, and wild vegetables. The value chain for these products is relatively complex: dozens of traders stand between the collectors and the large merchants in India. A study on the status of NTFP businesses across Nepal indicates that the primary collectors get less than 12 per cent of the consumer price (Subedi, 2006).

The CFUG has planted cinnamon species in the community forest (Paudel et al, 2008a). Again, the outside traders set the price and often complain about the quality of the products to justify the low price.

Suspa is also involved in an essential-oil extraction plant for processing wintergreen (*Gaultheria fragrantissima*), which is locally known as machhino. The CFUG collaborates with the Deudhunga Multipurpose Cooperative Ltd in running the processing plant (Gurung, 2006) and many of its members are employed there. Collection of machhino is labour intensive. It has been reported that members supplying raw material to the processing plant make about 17 per cent more than the average income. Total household income averages US\$250, of which US\$43 is generated by this community enterprise (Acharya, 2005).

### *Informal interactions on market fringes*

Many timber markets in the tropics are sporadic and informal, or even illegal. Communities in this type of situation do not maintain a stable relationship with the market and they do not always follow the regulations governing their forest resources. A major portion of the timber sold by these communities does not originate in authorized areas. In the following two cases, market traders who have access to both financial capital and market information often have the advantage.

*Colonists in Iturralde in northern La Paz, Bolivia* Iturralde is a province of Bolivia's La Paz department. Intense logging occurs in this province, where a large percentage of the timber is harvested informally. It originates in small-scale plots owned by colonists who migrated to the region a few years ago. The colonists rarely obtain the required forest management plans, which in theory would grant them legal rights to use the timber on the land. But even if they were willing to pay for developing such plans, many would be unable to do so, since they do not hold formal ownership rights to the land they occupy (Pacheco et al, 2008b). Colonists log the trees not only from their lands but also from other areas, primarily in the neighbouring Madidi National Park, a protected area created in the mid-1990s.

The expansion of colonist settlements around the urban centre of Ixiamas, the capital of the province, has inevitably led to the expansion of logging activities in the region, even though most received (or informally occupy) 50-ha plots intended for agricultural activities. Timber companies and small local associations, both with access to forest concessions in the area, create the demand for timber. This has also led to a growing number of sawmills, some operated by large timber companies. Approximately a fifth of the logging

permits in the region have been granted in colonization settlements (Ibarguen, 2008). The timber supplies several hundred small-scale sawmills and carpentry establishments, along with a few large-scale wood processing plants (Solares, 2008). Ibarguen (2008) suggests that logging – both selling trees and wage labour – constitutes an important source of smallholders' income.

About 900 colonist families totalling 4500 people occupy a total area of 75,000ha under individual and collective ownership. Land-use decisions are made mostly on a family basis, including those regarding forest resource use. Most of the harvested wood originates from areas without legal permits and is sold to local traders who send it to the city. These traders find ways to deliver the illegal timber to the final buyers.

Illegal timber trade takes place along the whole value chain, from harvesting to transportation and processing. Many timber companies with legal operations in forest concessions buy illegal timber, as do local traders who may be financed by medium-scale processing companies or timber export agencies based in the capital. Smallholders constitute only a portion of this intricate network. In some cases, local loggers finance the formulation of forest management plans in community lands but use them only to obtain forest permits and then sell them – a more profitable activity than the forestry operations themselves. According to Ibarguen (2008), seven traders have the capacity to advance money to finance logging operations, the equipment for harvesting and hauling and the information about buyers, as well as the best ways to avoid the control points established by the forestry agency. These traders often mobilize resources that promote illegal logging inside the Madidi National Park and other public forests.

The available figures suggest that illegal logging on public lands is more profitable than legal logging in smallholder plots. A smallholder's profit depends on the species and volume and also on the ability to negotiate. Ibarguen (2008) finds that the average income from forest management in a 35ha plot is about US\$8/m<sup>3</sup>, for a total of US\$2800 on a 350m<sup>3</sup> harvest. Profits from illegal logging of mahogany, however, come to US\$165/m<sup>3</sup>. Smallholders can make more money by encroaching on the national protected area.

*Traditional communities in Porto de Moz, Brazil* The timber market in Porto de Moz is characterized by high transaction costs for undertaking forest management through formal plans and the influence of local traders who have the capital and information to operate, but it is isolated from the main market, located in the city of Belem. Porto de Moz is on the Lower Xingu River in the northern part of the state of Para. The occupation of community lands by large-scale timber companies in the 1980s and 1990s led to intense land conflicts with local communities (Moreira and Hébette, 2003). A broad-based movement allying resident communities and environmental NGOs was successful in drawing attention to the region and in 2004 the extractive reserve (RESEX) Verde para Sempre ('Green Forever') was created.

The RESEX forced out the timber companies working in the reserve and granted land rights, with restrictions, to smallholders living there. The

establishment of the RESEX resulted in the restructuring of local timber markets. Local loggers became more politically powerful and informal timber markets expanded. The shadow networks that existed previously continued to operate but with different sources of capital. The new traders moved logging pressures to the eastern side of the reserve, not only to the community lands there but also to national forests, such as the Caxiuanã National Forest (Nunes et al, 2008).

Logging in community lands on the eastern side of the RESEX is intensive. Smallholders are approached by local sawyers interested in a few valuable trees; these sawyers in turn are financed by traders, who also pay logging truck owners (*bufeteiros*). In Porto de Moz there are three local traders of round wood and another three interested in sawn wood, though it is also possible to find buyers from surrounding municipalities. These buyers lack formal access to forest areas and often operate in the shadows. Furthermore, there are three large-scale sawmills in the area, which sometimes use local buyers but also make use of their own networks for timber supplies.

Information on the amount of timber sold in Porto de Moz is unavailable, but Nunes et al (2008) provides figures on costs and benefits from informal logging. Smallholders often sell standing trees only, for US\$13 each, because logging costs (including oil, labour and equipment) are unaffordable. A local chainsaw operator makes around US\$70 for harvesting the tree and selling it to the local intermediary, but the sale price increases to more than US\$200 per tree when it is converted and sold as planks. Smallholders have little scope for price negotiation; sawyers can negotiate prices with traders but are dependent on cash advances from these same traders for their own forestry operations, a factor that limits their bargaining power.

### *Timber transactions without open markets*

The last case is another community forest user group in Nepal, which sells timber largely within the community – not only because the community forest is intended to meet the needs of the members, but also because regulations make it difficult for forest users to sell timber in the open market. It is not that open markets do not exist, but rather that communities cannot reach them.

*Forest community of Sundari in Nawalparasi, Nepal* The Sundari CFUG is in southern Nepal, in the lowlands, and is linked with the national highway. The area has an elevation of 650–700m above sea level and lies in the tropical zone. The forests are important in terms of both commercial values and biodiversity. Some high-value medicinal species grow in the region, as do lemon grass, French basil, asparagus and more than 200 other species valued for their fruits and seeds, root and rhizomes, bark, leaves and flowers (Paudel and Banjade, 2008a).

The community comprises 1216 households and manages 384ha of forest. The community relies mainly on subsistence farming and remittances, although the poorest people depend mostly on agricultural wage labour (Paudel et al, 2008a). The Sundari CFUG does not sell timber in the market even though

some 20 sawmills operate in the area. These mills primarily buy timber from the Timber Corporation of Nepal, a parastatal company. A minor portion is supplied by CFUGs, however, usually through auction. Most of the mills provide sawing services and make furniture for the local CFUGs (Paudel and Banjade, 2008a).

The Sundari CFUG has a dense subtropical forest with valuable sal (*Sorea robusta*). The price of sawn timber in the open market is US\$536/m<sup>3</sup>, but the CFUG sells at only about 25 per cent of the market price to its members. The CFUG manages the forest based on an operational plan, a contractual document signed by the district forest officer. The group harvests timber once a year, often during winter, and distributes the timber and fuel wood among the members for a nominal charge, which it determines. Individual members of the CFUG are not allowed to harvest timber on their own.

One of the main regulations on community forest use is that all members have access to fuel wood, fodder, leaves and medicinal plants, but only for household use, not for sale. The group has agreed on a rule that allows only the CFUG, not individuals, to collect and manage these products. The group also sells some NTFPs, but in the fiscal year 2006–2007, it sold less than US\$375 in NTFPs. In the surrounding area, about ten NTFPs from the community forests are traded in local markets, which are dominated by Indian traders. The products are mainly collected at the roadheads or in the local weekly market (Paudel and Banjade, 2008a).

The CFUG harvests timber according to the volume limits set by the operational plan. The overall harvest amount is negotiated every year and has been more or less the same over the years. In 2008 the Sundari CFUG harvested 170m<sup>3</sup> of round wood, though internal demand exceeded 510m<sup>3</sup> (Paudel and Banjade, 2008a). The harvested timber is sold to members based on their need for it. Taking equity issues into account, the CFUG has set prices based on members' wealth category – poor, medium, rich – at US\$100, US\$120 and US\$145 per cubic metre.

Cumbersome bureaucratic procedures apply if the group decides to sell any timber outside the community. For example, it must first publicly offer the timber for sale to all neighbouring communities in the district. The group can access the open market only when the timber stock remains unsold at the neighbourhood and district levels (Bampton and Cammaert, 2007). CFUGs are supposed to receive the total amount from any timber sale but are liable for a 15 per cent royalty to the government on sales outside the forest user groups.

The constraining regulatory framework has two important consequences. First, it discourages sale of timber in the open market, resulting in low timber rents for the group as a whole (Paudel and Banjade, 2008a; Bampton and Cammaert, 2007). The low price then leads to increased demand for timber, particularly among the wealthy members in the community, and some timber may be illegally leaked into the local sawmills. Second, it worsens the existing inequity in distribution of conservation benefits among the members, through a phenomenon called hidden subsidy (Iversen et al, 2006). The better-off

**Table 8.3** *Categorization of case studies' engagement in forest markets*

Market development	Community capabilities	
	High	Low
High	1. Communities with stable forest market integration (timber): Layasiksa in RAAN, Cururú in Guarayos	2. Groups with limited market integration (NTFPs): Bolivia northern Amazon, Dolkha
Low	3. Individuals with sporadic forest market interactions: Iturralde, Porto de Moz	4. Well-organized community groups with little market integration: Nawalparasi

members within the group consume more than 80 per cent of the cheap timber. The poor hardly buy any timber, even at this low price. Thus the low price set by the CFUG largely benefits the wealthy at the expense of poor members.

## Discussion

The seven cases can now be assessed according to the typology introduced above (see Table 8.3).

*1 Communities with stable forest market integration* The two cases show progress in community attributes for dealing with forest markets, probably the result of the intervention of international NGOs. Both communities have improved access to markets by enhancing knowledge about buyers, along with market conditions such as prices, volumes and qualities. However, it is not quite clear yet to what extent the communities are the direct actors in negotiating deals with companies, or if the forestry projects still act on their behalf, or if they would have the capacity to compete in timber markets if subsidies were removed. In both cases, communities have improved their incomes by becoming more active in the market, mainly by establishing alliances with timber companies, which are reliable buyers. Nevertheless, the community forestry enterprises have little scope for negotiating the prices for timber and other conditions established in the contracts, such as payment conditions, because of their dependence on the companies.

*2 Groups with limited market integration (NTFPs)* The next two cases are smallholders and communities with strong ties to NTFP markets. These products constitute important sources of household income. Although smallholders have fairly good knowledge of prices and qualities, they often depend on patron–client relationships with buyers. For example, smallholders in the Bolivian northern Amazon need cash advances in order to cover their everyday costs during Brazil nut collection. Cash advances are not unusual in Dolkha, either, where Indian traders advance sums to NTFP collectors, thereby binding the individual collectors to them. Commonly, however, community

members are paid in cash. In the two situations described, smallholders are not able to negotiate the price of their products. The two cases demonstrate that organizing for collection, processing and marketing makes a difference. Cooperatives can build alternative channels of commercialization and even reach international markets – mainly fair trade and organic. Such enterprises may still depend on financial resources from traders or on credit provided by microfinance agencies, acquired at high interest rates.

*3 Individuals with sporadic forest market interactions* The two cases illustrate how smallholders can have relatively good access to markets but lack the bargaining power to enhance their form of engagement because of weak organizational capacities, individualized access to forest resources and small-sized plots. Furthermore, they often lack formal titles to their lands and encounter high transactions costs to obtain forest management plans as well as meet unrealistic forestry norms. These are all factors that encourage smallholders to engage in informal and illegal relationships with timber buyers: the former cannot comply with the regulations and the latter tend to benefit from that situation. Although the smallholders avoid some transaction costs, this type of market interaction works against them in many ways, mainly by undervaluing the standing trees or round wood that they offer in the market and inhibiting them from negotiating fairer prices.

*4 Community groups with little market integration* The last case is a community that has good capabilities but maintains little relationship with open timber markets. One reason is that the community's needs for timber exceed its supply. The second reason is that cumbersome forestry regulations hinder the community's efforts to sell its timber outside the community. In this case, the benefits that communities can obtain from these markets are relatively limited, since the timber tends to be undervalued in order to fulfil social needs. The low price set by the CFUG for its members reduces timber rents, which limits the group's capacity to invest in community infrastructure and other social services. And since better-off members buy more cheap timber, they enjoy an indirect subsidy from the rest of the members.

## Implications

It is clear that business-oriented, community forestry enterprises have helped some communities engage in more formal and stable relations with timber markets, thereby providing a regular source of income from commercial logging. By engaging in the marketplace, community enterprises slowly improve their negotiation skills for making deals with buyers, hiring service providers and compromising with government officials. In many cases, the approval of a forest management plan, which is the first step in formal forest management, leads the community enterprise to maintain permanent relationships with the markets. But to obtain benefits from markets, many communities must first meet legal requirements, obtain financial resources and improve their

accounting and marketing skills. Communities often require the support of external projects and NGOs.

Communities tend to obtain greater benefits to the extent they are able to sell their produce in more competitive markets and under more transparent conditions. Selling roundwood may be a trap for communities in monopsonic markets, since they become price-takers and are at the mercy of traders and timber companies. Selling sawn wood would reduce transportation costs and simplify access to more distant markets in which the sellers could make more attractive deals. Not all community forestry enterprises can set up their own sawmills, however, in part because of regulatory and bureaucratic constraints. For example, in Nepal, no forest-based enterprises can be established within a 1km periphery of the forest and thus the communities cannot add value to their forest products. Some smallholders operating in informal markets use chainsaws to produce planks, which often receive a higher price in the marketplace.

How profitable are community forestry enterprises? Net profits are about US\$30,000 in Layasiksa and US\$34,500 in Cururú. The profits per family, however, amount to only US\$177 and US\$1014, respectively (Albornoz et al, 2008; Argüello, 2008). In contrast, a smallholder in northern La Paz can net about US\$2800 by extracting the valuable trees from a 35-ha lot (Ibarguen, 2008), and in Porto de Moz, sawyers can reach a monthly income of about US\$1000 for sawing five trees into planks (Nunes et al, 2008). In the Bolivian northern Amazon, incomes from Brazil nut gatherers depend on the availability of this resource and may range between US\$320 to US\$2000 (Albornoz and Toro, 2008). In Dolkha, Nepal, the CFUG obtained about \$3200 from timber sales in 2007 (an equivalent of US\$11 per household) and families collecting NTFPs from the community forest made from US\$8 to US\$43 during the same year (Banjade and Paudel, 2008).

Even though members of community enterprises obtain less annual income from legal, commercial logging, they can count on a regular income over many years. Smallholders, in contrast, often receive higher amounts for their valuable trees, but in a lump sum, and the valuable trees are disappearing. Smallholders gathering Brazil nuts obtain the largest benefit but are highly dependent on international prices. Finally, it is noteworthy that communities in Nepal see lower profits than the cases in Latin America, for several reasons: Nepalese population densities are higher, the community forests are smaller, the forest resources generally have lower value and forestry regulations are tighter.

No clear pattern emerges regarding the implications of the different forms of community engagement with markets for forest condition; too many other factors are involved (see Chapter 9). However, timber extraction tends to alter the forest conditions for NTFPs, whose collection contributes toward forest conservation. Formalization of forestry operations and the creation of community forest enterprises tend to have a positive impact if they introduce sound forest management practices. But forest enterprises may also engage in large-scale extensive forestry operations, which in the long run tend to have a detrimental effect on forest regeneration. Informal and illegal markets can

erode forest resources to the extent that more intensive logging is practiced, but their effects tend to be more limited, since the operations are small and often just one part of forest resource use. This last issue, however, requires more in-depth research.

## Lessons and policy prescriptions

Although smallholders and communities have gained benefits from tenure reforms, even secure tenure does not guarantee that local people will benefit from the commercial use of their forest resources, since these benefits depend on both community capabilities and the conditions of market development. Tenure reforms do not affect the structural conditions under which forest markets operate or the interactions between smallholder and communities with traders, intermediaries, sawmill owners and industry. Market conditions and relationships play a major role in explaining how much benefit smallholders and communities are able to obtain from the commercial use of their timber and NTFPs.

The cases presented in this chapter suggest that distortions in forest markets often work against smallholders and communities. Timber markets tend to be dominated by a few companies that exert great influence on pricing, and even at the local level relatively few buyers may determine prices. In many cases, regulatory constraints tend to stimulate informal logging, which lowers timber prices. Transactions in the NTFP markets are often shaped by patron–client relationships with asymmetric information, which tends to disadvantage collectors. The market distortions, in several cases, inhibit both community capabilities and further market development.

The challenge for enhancing smallholder and community benefits from commercial resource use, then, is twofold: first, to enhance community capacities in the markets and second, to modify the conditions under which such markets work in practice. The former issue is part of the agenda of donor and forestry projects; the latter issue is often neglected by public policy.

Community capacities can be enhanced by promoting enabling environments for developing entrepreneurial initiatives, rather than by implementing interventions based on outside models. Demand-driven approaches for improving access to technical services and learning exchange networks to disseminate knowledge and experiences are examples. Furthermore, communities need tools to better understand market functions and trends and the present and future value of their resources, so that they can make more informed decisions.

Public policy action is required to overcome the main structural market distortions highlighted in this chapter – especially the legal and regulatory barriers, patron–client relationships and asymmetric information. Forest regulations that constrain communities from using their forest resources have to be relaxed and adjusted to forest user needs. State forestry agencies and other forestry programmes supported by donors should build stronger alliances with communities so that they can participate more actively in forest markets. Market asymmetries can be addressed by making financial and other technical services available to communities through more flexible intervention

schemes. Although state intervention through public companies (such as the Timber Corporation of Nepal) can be a good option, these companies must be accountable and their operations transparent and efficient. State agencies could also intervene directly by mediating in market transactions to develop emerging markets, particularly for certain NTFPs.

A final, perhaps obvious, lesson emerging from our analysis is that policy interventions cannot be the same for the different forms of engagement. In some cases, public policy should focus on supporting community capabilities to interact in markets; in others, greater attention should be placed on affecting market conditions. In many cases, the two types of issues should be given equal priority.

### **Note**

1. This chapter explores the interaction of both smallholder and communities in markets, though in some cases it is difficult to draw a precise line between these actors. In general, the term community is used in a more generic sense to depict situations that embrace both community groups and smallholders, but also to refer to situations in which group decision-making predominates. Instead, the term smallholder deals primarily with individual farmers using their own private resources.