

## 16 Opportunities and Challenges for Community forestry: Lessons from Tropical America

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**Abstract:** Community forestry is pursued as rural development strategy in many tropical forest regions worldwide. In Tropical America, rich experiences have been accumulated with community forestry support initiatives and this chapter summarizes published and the author's hands on experiences. The chapter is divided in two parts. The first half focuses on the actual contribution of forests and trees to rural livelihoods, evidence that allows a more precise identification of the actual potential of communal forestry for rural development. The second half of the chapter reviews some of the challenges faced by community forestry development initiatives. The chapter critically reflects on generating profits, inserting communities in forest product value-chains, setting up community forestry enterprises and the challenge to adequately deal with complex regulations. By exploring the experiences of a handful of current community forestry initiatives in Amazonia, and with some reference to Central America, the potentials, limitations and challenges of communal and smallholder forestry are discussed.

**Keywords:** forest incomes, forest regulations, forest product value-chains, community forestry support initiatives, community forestry enterprises



### 16.1 Introduction

The livelihoods of an estimated 300 million people worldwide living close to tropical forests depend on tree or forest products for daily subsistence (Pimentel et al. 1997, but see Calibre Consultants 2000). The relationship of these people to trees and forests has long been recognised as an opportunity for adopting community or smallholder forestry to improve rural well-being (Cavendish 2000, Scherr et al. 2004). International organizations like the Food and Agricultural Organization of the United Nations (FAO) and the World Bank began to promote community or social forestry in the late 1970s and early 1980s, respectively (de Jong et al. 2008). Rural dwellers had earlier been involved in forestry activities by both national and colonial governments, though often as labour force rather than beneficiaries (de Jong 2010). Community forestry pursues multiple objectives, including improved rural welfare, addressing actual

and anticipated fuelwood shortages, and mitigating undesired impacts of forest conversion on the environment.

A review of the literature that deals with the wide range of community forestry initiatives, also called smallholder forestry, participatory forest management, community-based forest management, community-based forestry, adaptive collaborative management, or joint forest management, presents a mixed picture on realities, potentials, and experiences to promote local forestry. Eminent scientists who researched indigenous groups in forest-rich regions already observed long ago that trees and forests play an important role in people's economies, and that local people do manage trees and forests in their estates. Anthropologists, rural economists, and sometimes foresters, who previously had focused on rural agriculture, shifted attention to swidden-fallows management or other kinds of forest management (e.g., Posey 1982, Moran 1984, Balee 1987, Denovan

and Padoch 1988). Out of this work evolved the discourse on non-timber forest products, which before had been called minor forest products or secondary forest products (Nepstad and Schwartzman 1992). Non-timber forest products were perceived as possible marketable forest products that could generate incomes to rural producers who, in turn, would make more profits from standing forests than from alternative land uses (Plotkin and Famolare 1992). These various efforts successfully brought attention to the potential and opportunities of forests in the sustainable development thinking.

It can conceivably be argued that the community forestry development model, as currently promoted by national and international, governmental and non-governmental development agencies, has its origins in these early inquiries on the role of forests in rural livelihoods. In the early stages of community forestry development, emphasis had been put on technical aspects of natural forest or plantation management and community organisation. Later on, focus shifted towards land tenure security and institutional development, including the role of forest-dependent people as effective forest stewards (e.g. Poffenberger 1990).

Many publications on community forestry, including peer-reviewed papers, had as their main purpose to advocate community forestry to convince rural development specialists, donor agencies, and especially national forestry experts and forestry agencies to progressively pursue this new development and conservation approach by doing the necessary changes in legislation, policies, funding allocations, and land and access rights. However, at least a number of papers are somewhat more reserved about the potential of trees and forests to effectively improve rural livelihoods (e.g., Browder 1992, Cavendish 2000, Campbell et al. 2001, Wunder 2001).

Consequently, the studies and findings summarised in this chapter demonstrate some critical aspects about the community forestry development model (Gasché 2002 and 2004, Hoch et al. 2009, Cornejo 2010), while also citing experiences where smallholders, with external assistance, have succeeded in using their forestry portfolio to improve incomes. These successful examples cited below are mostly from Central America and Mexico (e.g., Bray and Merino-Pérez 2002, Antinori and Bray 2005, Bray et al. 2005, Nitler and Tschinkel 2005, Stoian and Rodas 2006a and b, Stoian et al. 2009). In Mexico and Guatemala communities and smallholders successfully organised themselves as community forestry enterprises (CFEs) and succeeded with inserting their forestry activities in timber or other forest product value chains. In addition, the chapter draws on cases from the Amazon basin, where rich experiences of community forestry support exist and important research findings have been generated over

the past two decades (Bray et al. 2005, Benneker 2008, Sabogal et al. 2008).

In view of the quite contrasting experiences with community forestry, this chapter intends to address several relevant questions: What explains the disappointing outcomes, where they occur? Or, conversely, what explains the successful examples of community and smallholder development initiatives? More intriguing is why a significant number of forestry development efforts achieve little results in locations where people depend on forests for their daily subsistence, and where forests contribute sometimes significantly to their monetary income. The following section 16.2 reviews the opportunities related to community forestry while section 16.3 focuses on the challenges and limitations. Section 16.4 draws some consistent conclusions from the ambivalent experiences.

## 16.2 Opportunities for Community Forestry Development

### 16.2.1 Concepts and Principles of Community Forestry

Community forestry is defined in many different ways. For instance, McDermott and Schreckenberg (2009: 158) emphasise in their definition “power and influence” that local people exert over “decisions regarding management of forests.” Pokorny et al. (2008) propose a definition of community forestry as commercial local forestry that is actively being promoted by external agents, emphasising the protagonist role of non-governmental organisations (NGOs), development agencies, or national, regional and local governments. This definition suggests that community forestry development models and discourses concur with locally developed forest use models (Hoch et al. 2009), or traditional or indigenous forest management (McDermott and Schreckenberg 2009), while it is not immediately clear how the two complement or integrate. Given the different perspectives on the matter, it is relevant to clarify what, in the context of this chapter, we mean by community forestry.

Commonly, forestry is understood as activities related to standing forests. Numerous researchers (e.g., Dubois 1990, Sabogal et al. 1997, Smith et al. 2001, Nalvarte et al. 2004, Sabogal et al. 2006, Hoch et al. 2009) have demonstrated that Amazonian smallholders manage natural stands and forest gardens, and plant single species stands, agroforestry fields, and single trees outside of natural forests. Many of these activities, including those largely focusing on



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**Photo 16.1. Community forestry is based on local customary practices, but also requires that protagonists learn modern techniques, for instance the use of maps and machinery as well as how to organize themselves.**

**Table 16.1. Differentiation of community forestry in the Amazon (adapted from Hoch et al. 2009). These include both locally developed forestry schemes and schemes promoted by external agents.**

Management of natural forest stands for NTFP
Management of natural stands of fast growing timber
Enrichment planting in natural forests
Management of swidden fallows
Swiddens intercropped with tree plantings
Home or forest gardens
High value timber plantations
Fast growing timber plantations
NTFP plantations
Single tree planting in agricultural fields

market-oriented production, are locally initiated. But, traditional and indigenous forest management (c.f., McDermott and Schreckenber 2009) encompass a quite diverse set of locally generated forestry practices or interventions to harvest, increase, or sustain production, or for other purposes. They usually include infrequent harvesting of forest products from forests, tree stands, or single trees, which are to be sold or exchanged. In a certain sense, this kind of management represents any sort of tree- or forest-

related activity carried out by members of rural communities or individual smallholders in Latin America. Hoch et al. (2009) distinguish ten types of local forestry activities (Table 16.1).

Community forestry has been an integral element of development strategies since the early development decades after the Second World War. Its objectives and related approaches have changed over the years. During the 1970s, erosion protection, local forest product supply, and generating rural incomes were the dominant goals. During the 1980s, an important shift towards promoting natural forest management occurred to achieve development and forest conservation objectives. Since the 1990s, community forestry support initiatives have explicitly focused on both poverty alleviation and forest conservation, with emphasis on legal and regulatory reforms, local capacity-building, and small and medium enterprise development (de Jong et al. 2008).

Forestry activities, along with other kinds of tree management, are essentially economic undertakings. Most of the wide range of forest products, including timber, fuelwood, and non-timber forest products (NTFPs) are being traded or are tradable in markets, while also used for subsistence. Recreational and environmental services, such as ecotourism, and water and soil protection, biodiversity conservation, and carbon sequestration are equally, if not more, important, but related markets are still in their infancy.

In these forest economies local communities play an important role, even more as their ownership over the world's remaining natural forests significantly increased in recent years (Sunderlin 2008). At present, close to 200 million ha representing a fourth of the Amazon forest region are formally titled, or are in the process of formal recognition, to local populations (RAISG 2009). Perz and Skole (2003) estimate that in Brazil about 20–40% of land initially used for agriculture but where forests have returned is under community or smallholder control. In particular with regard to the rapidly developing markets for environmental services, it is assumed that local people are going to be important protagonists for providing a growing world population with forests' goods and services. This is expected to provide attractive income opportunities for forest-dependent people, even more as many rural communities in forest-rich regions are traditionally engaged in the management and trade of forest products, so that these local practices can be incorporated into forestry value chains. It remains however somewhat unclear, if the currently promoted community forestry models are compatible with the realities of forest communities.

### **16.2.2 Who Manages Forests and Trees in Amazonia?**

A persistent challenge in commenting on community forestry is the adequate consideration of the immense diversity of actors and their forestry activities. A common feature of many community forestry definitions is the distinction between local actors as protagonists of community forests, and non-local actors, including corporate or entrepreneurial actors. Local actor groups include native indigenous communities, many of whom still live in remotely located and isolated villages. Since the end of the 19th century, migration into the Amazon region accelerated and has resulted in a new resident indigenous population, for instance, the ribereños from Peru and caboclos from Brazil (Chibnik 1991). A significant proportion of these groups live in organised and legally recognised settlements, where they often have some kind of formally recognised local government structure. Since governments began to support Amazon development projects and infrastructure improvements in the 1960s and 1970s, there have been also new waves of immigrants moving to rural Amazonia, mostly known as colonists. They moved into existing villages established in settlement projects, or established farms on their own.

There is a marked difference in familiarity with the local environment between indigenous groups and other long-term resident groups, and recent immigrants. While the latter are initially unfamiliar

with their new environment, and bring with them agricultural practices that are ill-suited for the new environment, there are documented cases where recent immigrants quickly became familiar with the environment and adopted agroforestry production practices that were well-suited to local ecological conditions (Smith et al. 1999). Recent Amazonia immigrants, especially from the Andean highlands into the western Amazon, tend to be more familiar with trade, contract work, and social discipline.

The vast majority of the above mentioned groups of long-term residents in tropical forest zones are engaged in swidden fallow agriculture as well as in some kind of tree or forest management. For example, Summers et al. (2004) suggest that 30% of recent settlers in Rondônia, in the western Brazilian Amazon are involved in forestry activities. Smith et al. (2001) as well as Sears et al. (2007) reconfirm a similar proportion for Peru. Smallholders commonly understand forests and trees as an integral part of their production systems. In areas of direct occupation, forestry and agricultural land use constitute integrated land use activities (Pokorny et al. forthcoming). Forest remnants, secondary forests, forest gardens, and trees in agricultural fields together create typical smallholders landscapes. In fact, there are spatial and temporal synergies between the different land use components, resulting in complex land use mosaics, with trees and forests managed at different intensities and for different purposes, including environmental functions. These mosaics emerge during several decades through a sequence of punctual interventions and continuous experimenting, and achieve, in the best case, a kind of steady-state of land use components with the capacity to ensure ecosystem stability and the continuous provision of environmental services (Godar 2009).

Although, the term “community” generally invokes collective arrangements related to the coordination and realization of forestry activities in commonly owned forests it is worthwhile to remind that the Amerindian populations of most of tropical America are not and never have been “communal collectivists.” Their social organisation is based mostly on reciprocal family networks in which goods and services (i.e., labour) are exchanged. While communal and ancestral territories are recognised and defended, most resource management, including swidden fallow secondary forests or forest gardens, is individual or nucleo-familiar (Chirif 2009). More recent residents often established their own peer groups, maintaining social structures and collaboration practices that they brought with them from their location of origin.



### 16.2.3 How Much Does Forest Management Contribute to Rural Livelihoods?

Smallholders in Latin America rely heavily on the use of natural resources. In many areas, forest and trees and the related environmental services play a major role for household income and livelihood security. This is true not only for families and communities with access to large forested areas, but also for families who manage small forest patches or forest fallows. Pokorny et al. (forthcoming) and Hoch et al. (2009) confirmed that the majority of families in their sample from Amazon locations in Brazil, Bolivia, Ecuador, and Peru included some kind of forestry activity in their agricultural activities for a wide range of forest and tree products to satisfy their basic needs for nutrition, construction, fodder, tools, fuel, and medicines.

While forests and trees are widely important among smallholders, dependency on them varies substantially. In some cases, forest and tree products are the principal source of income for families, as shown by Padoch (1987) and Padoch and de Jong (1991) for Peru, Clüsener-Godt and Sachs (1994) and Allegretti (1995) for Brazil, and Stoian (2000) and Henkemans (2001) for Bolivia. Vos et al. (forthcoming) estimate that for only about 25% of smallholders' forests don't play a major role. Evidence from Bolivia and Peru suggests that forest dependency increases when communities are located further away from urban centres (Stoian and Henkemans 2000, Pyhälä et al. 2006).

The way communities and smallholders use their forestry is strongly influenced by external dynamics. In Amazonia, families respond to the increased presence of private companies with intensifying the harvesting of forest products in particular timber. Most smallholders sell forest products without further processing in local markets or directly to traders. Vos et al. (forthcoming) estimate that less than 10% of the families trade processed forest products, while about a fifth are involved in regional or national markets – mostly confined to the first segment of the respective supply or value chain. The proportion of smallholders directly selling to the international market is negligible.

When smallholders adapt their productive activities to the emerging commercial opportunities provided by improved linkages to markets, the importance of forests for the livelihoods of families generally decreases. This suggests that forest production has a relatively low profit margin compared to other productive, but often non-sustainable land uses, and that these are the first activities to become unprofitable when markets provide opportunities for commercialization of agricultural products. Regional

variations in access to markets, forest composition, local customs and preferences may actually lead to an increased contribution of forests to local incomes. This is particularly the case in traditional contexts characterised by the absence of other more attractive income opportunities. Examples of these are where families shift to selected forest products that are in demand in local or regional markets, such as palm heart and fruits from *Euterpe oleracea* Mart. in the eastern Brazilian Amazon, or palm fruits from *Mauritia flexuosa* L. in Peru; or in international markets, such as Brazil nuts from northern Bolivia, southern Peru, and western Brazil. In addition, along recent agricultural frontiers, the commercialisation of timber can become an important source of monetary income for smallholders (Pokorny et al. forthcoming).

## 16.3 Challenges for Community Forestry Development

This chapter so far has reviewed contemporary realities of community forestry in the Amazon region, and their importance for rural incomes and the shaping of tropical forest landscapes. The evidence confirms the assumption that supporting community forestry may be an adequate strategy to further development and conservation objectives. The community forestry sector has meanwhile acquired important accumulated experience, based on implementation projects and studies (e.g., Gasché 2002, Gasché et al. 2004, Sabogal et al. 2008, Hoch et al. 2009, Pokorny et al. forthcoming). This section summarises some important lessons from these reviews.

### 16.3.1 Lessons from Community Forestry Support Initiatives

Cornejo (2010), analysing local forestry support initiatives from Peru, Bolivia, Ecuador, and Colombia, found that these initiatives in general were duly designed with early involvement of the target beneficiaries, but varied with regard to the methods and intensity used for consultations. The most common operation mode was to organise communal workshops where ideas were presented to target beneficiaries asked to provide opinions or suggestions. Even though several initiatives focused on rather new activities among the target beneficiaries, these activities all fit well within the rural producers' economic strategies. Thus, the new activities proposed by the initiatives did not demand excessive time allocation, consumed only minor amounts of time and thereby occupied a relatively small proportion of the family



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**Photo 16.2 Rural communities in Amazonia increasingly benefit from timber sales. Regulatory frames and available technology, however continue to hinder community forestry region wide.**

labour pools. The activities all focused on managing local biodiversity, while complying to the extent possible with the existing regulations. This implied necessarily the introduction of new management practices and new forms of organisation among rural producers.

All the cases reviewed by Cornejo (2010) had in common that some kind of intervention by external agents had taken place. Interventions were typically related to a development projects led by a NGO, though government support was also present in several cases. Despite the fact that important resources had been invested in technical assistance and training, and efforts had been made to define phase-out strategies, an overall result was that few of the innovations continued after the project finished. One of the reasons was that the initiatives failed to pay sufficient attention to the importance of smallholder business organisation and related capacity-building, and to product value-chain development.

In contrast to some successful examples from Mexico and Central America, where communal business organisations could be built on existing structures for community and political-legal organisation (Stoian 2005), Amazonian forestry producers had little former integration in market structures and were confronted with entirely new forms of organisation. So, Amazonian forest managers did become only in very few cases direct traders of the raw material or semi-finished products. Most of them continued to

sell their products to local intermediaries with little influence on price formation. In fact, they hardly ever succeeded in establishing trust relationships with non-local market participants and therefore did not manage to receive more attractive prices for their products. Findings of a global review of rural community enterprises suggest that the start-up phase necessary to establish viable business structures would take at least between 10–20 years, followed by a consolidation phase of a similar duration (Donovan et al. 2008).

Another immense challenge for community forestry initiatives was the legal formalisation of forestry activities in accordance with pertinent regulations (Pokorny et al. 2008). Obtaining legally valid documents and permits, usufruct rights in the form of forest concessions or extractive reserves, as well as constituting formal smallholder organisations involved lengthy processes with high transaction costs, even more as government norms and regulations often were relatively difficult to comply with. Where some kind of certification was pursued, this also proved to be an equally cumbersome and expensive undertaking.

Another major challenge was to gain effective control and protection against unauthorised use of the target resources by non-participating community members or outsiders. Supporting development organisations helped the local stakeholders to exert their rights, but once the interventions finished,

monitoring and control mechanisms relaxed considerably. They only remained effective in some cases where resources could be divided up among rural producers, for instance in the form of individual plots. Efforts to generate higher added-value through post-harvest treatments or processing were unsuccessful in those cases where technologies were not appropriate because too expensive or too demanding to be maintained with local capacities and resources. Even in cases where technology design matched with the local skills available, only small quantities of the principal forest products were processed.

Few of the Amazonian initiatives reviewed by Cornejo (2010) managed to establish autonomous and long-term forestry production and trade. This was largely because many initiatives failed to adequately consider the prevailing socio-economic and cultural realities of the targeted beneficiaries. Where rural producers managed to establish fair and stable collaborations with external agents, as in the case of Brazil nut production in southern Peru, or the case of floor wood producers in Loreto, the situation was more favourable and local benefits continued. In most cases, however, it became clear that rural producers targeted by development initiatives apparently do not have the same values, motivations, objectives, or the same subjective logic of life as urban societies or forestry communities that have had more exposure to markets and urban societies (Gasché 2007). The consultations that most initiatives applied at the beginning of the initiative, although well-intended, were unable to identify the appropriate spaces of dialogue or culture of discussion, reflection, and decision-making. The *a priori* focus on insertion of local forestry production into forest product value-chains hinder a more adequate exploration of opportunities for setting up and promoting more appropriate mechanisms to achieve improvements of local consumption or satisfying local needs.

### 16.3.2 Generating Incomes from Community Forestry

The experiences summarised in the previous section can be disaggregated by looking at some key steps that community forestry needs to pursue. Community forestry supporters assume that a more effective management of trees and forests, and a more effective insertion in forest product value-chains can create attractive income opportunities to local forest users. In expectation of this economic potential, governments established settlement models where families were trained to effectively manage forests and sell forest products to achieve adequate incomes (CTA 2006, Carneiro et al. 2008) without the need to practice agriculture. In Brazil, for instance, beyond

the demarcation of Extractive Reserves by the federal government, many states – often in collaboration with environmental NGOs – promote “forest settlements” (as in Acre), a “Zona Franca Verde” (Amazonas), and “areas for sustainable development” (Pará).

Recent studies point to a rather limited financial potential of the externally promoted community forestry models. Their input requirements are high, prices obtained for traded forest products are low, and the managerial and logistical challenges are cumbersome (Wunder 2001, Pokorny and Johnson 2008). Case studies of externally promoted smallholder tree management analysed by Hoch et al. (forthcoming) suggest consistently disappointing results compared to initial expectations. Even when market distances are short and commercial timber stocks abundant, as is the case in the southern part of the Ecuadorian Amazon, local forestry producers rarely obtained annual per hectare incomes of more than USD 15 (Pokorny et al. forthcoming).

All these experiences received important external support. In accordance to the study of Medina and Pokorny (2008) analysing some of the most successful community forestry initiatives in the Amazon, initiatives in dependence of size, technologies and specific site conditions had initial investments of between USD 20 000 and USD 800 000 to acquire equipment and for technical and managerial training. Small-scale initiatives like the “Oficinas Caboclas” in Boa Vista dos Ramos, Mamirauá, and Pedro Peixoto collectively managed forest areas of up to 50 ha without heavy machinery and produced less than 250 m<sup>3</sup>/year of timber, while bigger initiatives such as Ambé, Costa Marques, the “Projetos de Assentamentos Agroextrativistas” (PAE) Cachoeira, Ecuador, and Porto Dias yearly harvested timber in more than 100 ha with trained personnel and the use of machinery. These cases generated timber yields of at least 650 m<sup>3</sup>/year. The analysis revealed that only those initiatives that operated larger areas and had little vertical integration managed to offset the labour costs and, in a few cases, generated small profits. Other initiatives did manage to assure incomes to recover operational costs.

Reasons for this lack of viability are relatively low productivities oscillating between only 5% up to a maximum of 75% of timber enterprises, and consequently relatively high production costs ranging between USD/m<sup>3</sup> 15–50 for round wood to USD/m<sup>3</sup> 190–600 for processed wood. Pokorny et al. (forthcoming) estimate annual per hectare family timber incomes of about USD 5, considering an allowable cut in natural forests of 2–3 m<sup>3</sup> per ha in a 20-year rotation (Silva et al. 1995). In the department of Loreto, Peru, an Iquitos-based company joined forces with rural people to produce and export hardwood for wooden floors. There, small producers extract an average of 40 m<sup>3</sup> at an amount of 2–3 m<sup>3</sup>/ha, which



yields them about USD 500/month. In summary, it appears that timber production can provide complementary sources of income, but cannot provide the only source of income and allow the forgoing of other land uses, except for some exceptional cases as the floor-wood producers in Peru (Cornejo 2010).

Tree-growing initiatives suffer from similar low financial profitability. Hoch et al. (2009) have demonstrated that smallholder tree plantations require high initial investments, suffer from pests and fire, and uncertain market conditions. In the Amazon region, only about 1% of participants in plantation programs end up selling plantation products for markets. Exceptions are perennials, such as cocoa, coffee, palm oil, and incidental local trees like umari (*Poraqueiba sericea* Tul.) and cupuaçu (*Theobroma grandiflorum* (Willd. Ex Spreng.) K.Schum). Where such producers are linked to markets, they may obtain net profits of up to USD 300–900 per hectare. However, initial inputs in time and capital are significant (Hoch et al. forthcoming).

### 16.3.3 Insertion in Value-Chains

Many community forestry initiatives as currently promoted by development organisations require a number of adjustments from the local forest managers. Most critical, local forest users have to engage in market exchange under rules with which they are often unfamiliar, nor do they have the necessary capacities to influence or take advantage of them. Their forestry activities become subject to a normative-institutional framework different from the one they are acquainted with. However, the vast majority of forest-based communities and smallholders continue to participate mainly in primary production, with little connection with downstream chain actors beyond local intermediaries. Their participation in the supply- or value-chain may be sporadic, as they often cannot supply the market with steady volumes or qualities (Pacheco and Paudel 2010). This limits the opportunities of joint learning with other chain actors and, eventually, to strengthen their bargaining power.

Many development initiatives promote so-called inclusive value-chains. In particular in Mexico (see Antinori 2005, Antinori and Bray 2005) and Guatemala (see Nittler and Tschinkel 2005, Stoian and Rodas 2006 a,b), a growing number of community forest enterprises became engaged in vertical integration. In Mexico, these relationships are often based on contracts with timber companies, sometimes involving community-based processing (Bray et al. 2005). In Peten, Guatemala, local processing of certified timber into sawnwood by community forest enterprises is common (Stoian, forthcom-

ing). In Honduras and Nicaragua, there are further examples of local communities producing certified timber where differentiation of their products in the market has generated additional benefits.

The benefits of insertion in such forest product value-chains, however, depend not only on the capacities of local communities and smallholders, but also on the influence they can exercise over other participants in the value-chain. Value-chain participation requires local producers to establish agreements with external actors, often in the form of written and signed contracts. While establishing some kind of agreement with traders may not be uncommon for local producers, it is also clear that more formal agreements usually stand for more rigid rules and important obligations on the part of local producers. Formal contracts may allow for risk sharing and, if well negotiated, some kind of benefit sharing. This, in turn, requires skills and experiences in negotiating the terms of trade – capacities that many local producers are yet to develop. In the meantime, they need to rely on assistance from NGOs and development projects for negotiating contracts, complying with their stipulations, and ensuring compliance on the part of the trade partner. In addition, local producers need to meet quality standards and minimum volumes, along with timely delivery of their raw materials or semi-finished products. Furthermore, the demand for capital is high, particularly when engaging in processing, but also to pay advances to raw material collectors. In the absence of financial services provided by downstream chain actors, local communities and smallholders need to rely on commercial loans. Accessing financial services has its own sets of customs and rules, which require yet another kind of skills.

These conditions contrast with how many rural producers operate. Often they operate in largely informal economies, where agreements are mainly verbal. Furthermore, rural producers, such as the ones in the Amazon, usually apply advanced payments, committing the exchanging parties and reducing the risk of default of both parties. Where verbal agreements are made, they usually concern products that have relatively low exchange value, or services that can easily be withdrawn if obligations are not met. This, however, does not imply that such agreements are not complied with or cannot be enforced, but rather than introducing new practices of contractual agreements, it seems more promising to formalise local practices of establishing agreements.

A simple representation of what is required when local forestry producers integrate in value-chains is to assess how distant local customs, practices, and rules are from those required in formal forest product value-chains. Global economy, of which forest product value-chains form a part, is based on private ownership over the products from labour efforts and



personal assets, profit maximisation, and accumulation of wealth. These economic principles, however, are not necessarily in line with those of forest or rural communities. Although in many cases local economies depart from personal ownership over assets and the right to exclusively capture and consume rewards from personal labour, key principles are also reciprocity and solidarity, and the concordance of private progress in tandem with progress of the solidarity group (Varese 2005, Gasché 2007). Hence, among forest-based communities in tropical countries, there is much less a tendency of profit maximisation and accumulation of wealth than, for instance, among more developed urban societies. While there are differences in personal or family asset wealth and overall income between single families in most rural communities, most rural producers pursue a strategy of accumulating productive assets, such as agricultural fields or swidden fallow lands. These local accumulations provide insurance for future income uncertainties that may jeopardise the well-being of family members. In addition, local producers may accumulate assets to pass them on to children, once they start their own families and will require such assets to satisfy their own family needs.

Rather than wealth accumulation, in typical Amazonian communities, goods are exchanged in times of need, but also in times of abundance to solidify extensive family networks (Varesa 2005, Gasché 2007, Chirif 2009). Among many rural communities, assisting a family member in need is considered more important than accumulating personal wealth beyond what is needed to assure future well-being. Goods are traded for money outside local family networks or communities, but mostly to satisfy immediate needs, such as buying consumer goods for daily consumption or to finance school or health expenses. It is also not uncommon that windfall incomes, as in the case of Brazil nut collectors in Bolivia, are spent excessively on liquor and consumer goods for which there is little use, like motorbikes where there are no roads or gas stations, or DVDs and music players where there is no electricity (de Jong and Evans 2005).

The implications of a local moral economy for the community forestry models are not easy to predict. Some consequences could be that local forest users may be interested in holding productive forest resources to which they can turn when needing money to satisfy urgent needs. They may be less inclined to become subject to rigid production schedules, which require delivery of products at fixed intervals, meeting agreed quality standards, and the like. The implications of these behaviours on forest management are diverse since, on the one hand, in contexts of low pressure over the resources they may contribute to forest conservation but, on the other hand, when such pressures increase and involve more heavily local producers, this can translate into

considerable pressure on forests and lead to increased degradation.

### **16.3.4 Creating Community Forestry Enterprises**

Successfully integrating forest product value-chains requires some kind of business organisation, often referred to as community forest enterprises (CFEs). Stoian and Donovan (2008) classify CFEs as small and medium enterprises, with legal figures ranging from cooperative or association to anonymous society. Particular cases are ejido-based CFEs in Mexico, and comites de gestión in Peru, which are tasked with the management of ejido lands and protected areas, respectively (see Bray et al. 2005, Monteferri 2006). CFEs engage in a wide variety of productive and service-oriented activities, including timber and NTFP production, and various kinds of tourism (Stoian et al. 2009). Examples from the Amazon include community ecotourism enterprises in Peru and Ecuador (e.g., Schmall 1999, Wunder 2000).

CFEs that are known in the region have similarities in organisation and operation. Only a very few among them can rely on the assistance of professional managers. Rather, these enterprises are governed by a group of persons elected from among the CFE members, and who formally are controlled by the general assembly of CFE members. The directing group is given the mandate to take operational decisions and administer the CFE. In some cases, the CFE is assisted by a full time administrator or accountant who has had professional training (Stoian and Donovan 2008). In general, many CFEs face significant trade-offs between the economic and social goals of the enterprise. A typical question is whether any surplus generated by the end of a year is divided up among CFE members, or used for capitalising the enterprise. Investment decisions need to choose between acquiring new machinery and equipment, and funding social projects related to granting stipends or building social infrastructure. Many CFEs in tropical America rely heavily on external support from NGOs, which provide the know-how and skills that professionals otherwise provide. Such external support essentially implies that CFE are subsidised and are not able to operate profitably entirely on their own.

The social re-organisation under a community forestry development model is particularly challenging. It seems to require a type of organisation that is able to reconcile economic and social ends, as suggested by Stoian and Donovan (2008). However, in many cases, local organisational traditions allow for social rather than strictly economic goals. To be viable, organisational structures and management models have to allow for participatory decision-

**Table 16.2. Principles of community forestry enterprises in the Amazonian context.**

CFEs should be modelled on existing labour and distributive solidarity groups.

CFEs should adopt discussions and a decision-making mechanism that coincide as much as possible with existing dialogue practices and spaces.

Leadership implies organisation and coordination responsibilities, but does not grant a position of authority.

Benefit distribution should represent the individual contributions of each member.

Adequate amounts of surplus benefits should be invested in social projects (asset building), and in the enterprise (capitalisation).

making patterns that promote democracy, equity, and social justice without compromising the economic viability of the enterprise. Social innovation is needed to create business organisations that meet the requirement of a formal enterprise, but that at the same time are adapted to local customs and practices. While these social innovations have been little explored, they should probably meet the criteria listed in Table 16.2.

### **16.3.5 Setting up an Adequate Legal Framework**

Forestry regulatory frameworks influence how local producers access and manage forests, but also how they interact with markets (Pacheco et al. 2008a). In many cases, cumbersome regulatory frameworks tend to operate as institutional barriers and to impose excessive transactions costs to local forestry producers (Sherr et al. 2004), in particular as commercial forestry production tends to be more regulated than other economic sectors due to concerns for forest conservation (Larson et al. 2008). Thus, devolution policies in the region have increasingly granted forest land ownership rights to local producers, but also imposed management regulations more appropriate for corporate forestry.

Communities and smallholders have access to forests through individual or collective ownership, or through temporary use rights, like the social forest concessions in Guatemala and Bolivia. Each of these local forestry producers needs to follow a set of complicated rules when undertaking forest product harvesting. In nearly all Amazonian countries, they need to get a formal title of their lands or to register their existing rights, and have to develop forest management plans (FMPs) and annual operational plans (AOPs). An additional request contained in

the national commercial codes is that local operators need to constitute and register a formal economic organisation.

The governments in the region have formalised community and smallholder forest tenures in different ways. Collective rights have been given as indigenous territories, agro-extractive or extractive reserves, sustainable development reserves, and forestry settlements. The bundles of rights granted under these different models all recognise access and withdrawal rights to communities, management rights that impose the preparation of FMPs, and the right to exclude third parties from communal lands. The alienation rights in all cases remain with the state (Larson et al. 2008). A second forest devolution strategy has been to grant individual titles through formal land titling programs, for instance in colonisation areas.

The preparation of a FMP and an AOP do not only impose an administrative burden, but also represent a financial cost for local users, primarily because their preparation requires specialised skills that need to be hired or contracted. In addition, FMPs require carrying out forest inventories by specialised personnel. Most communities are not able to cover such costs, so they depend on NGOs or forest companies for assistance (Benneker 2008). Several countries have recognised over time that the required plans following models inspired by corporate commercial logging and as a consequence are financially and technically too demanding for most local forestry producers. In response, some governments have attempted to simplify these regulations, though others have decided to cancel simplified forestry norms given the unintended consequences of simplification (Pacheco et al. 2008b).

Ecuador, for instance, has simplified forestry norms that communities and smallholders need to comply with. Local forestry producers can do simplified forestry inventories and are allowed to produce planks with chainsaws inside the forest. Approvals of plans for those operations, however, still have to be signed by a forester (Ibarra et al. 2008). Nevertheless, as in many other cases for simplification, smallholders and communities still have difficulties in complying with these norms. In fact, already the need to elaborate registers that record the number of trees and estimated volume to be harvested often exceed the willingness and capacities of local producers.

Also in Bolivia, there are several types of technical norms ranging from management plans for forest concessions to logging of forest areas less than 200 ha that require only a harvesting permit. The latter is much more simple and quickly to get than an authorisation of a full-sized forest concession (Pacheco et al. 2008b). Between 2003 and 2006, the Bolivian law also allowed smallholders to log

areas of less than 3 ha to facilitate the harvest of small volumes of timber and to invest part of the profits in the formulation of formal management plans. However, the 3-ha plan was cancelled since it was systematically used by timber intermediaries to cumulate area for an easy access to timber (Cronkleton and Albornoz 2003).

In Nicaragua, until 2006, there were three types of plans to make small-scale logging easier and cheaper: replacement plans for areas less than 10 ha, minimal plans for 10–50 ha, and general FMPs and AOPs for areas over 50 ha. A fourth type of permit was created only in indigenous areas of the Autonomous Northern Atlantic Region (RAAN) for logging pine for local markets. The simpler plans, however, were suspended following a Logging Moratorium Law in 2006. All logging now requires a general management plan. It is also now illegal for wood to be sawn in the forest; all logs must be milled at a registered sawmill. Prior to the moratorium, sawing boards with chainsaws was permitted under the simpler plans (Pacheco et al. 2008b).

In Brazil, a distinction is made between high- and low-intensity plans, but both are subject to complicated bureaucratic procedures. In both cases, a professional forester must sign the FMPs. In community areas, plans have to be additionally signed by leaders representing the community or territory. The professional forester, who helps to formulate the FMP, is at the same time responsible for the forestry operations in the area. This intends to ensure relative transparency in both the formulation and implementation of the FMPs, which facilitates central agency supervision, but they are hardly implemented in practice (Carvalho et al. 2008, Pacheco et al. 2008a).

An additional obligation for commercial forest users is the requirement to register a forestry enterprise under the commerce regulations. A registered forestry enterprise has to comply with tax regulations and can legally subscribe formal contracts and get access to formal credit. However, most of the communities see this as an additional requirement that provides little benefits. It is likely another reason for communities and smallholder forest producers to continue operating in informal forest markets.

Generally, it can be concluded that forestry regulations tend to operate against the interest of communities and smallholders because they impose both legal barriers and transactions costs to them. The simplification of forestry regulations has not so much favoured the local forestry producers, but rather actors farther along the value-chain. In many cases, market imperfections are the larger constraints to local forestry producers increasing benefits from simplified norms. Pacheco and Paudel (2010) suggest that the simplification of forestry regulations is not a response to the more fundamental problems located within the realm of markets.

## 16.4 Lessons from Amazonian Community Forestry Experiences

This chapter summarised a number of critical reviews of community forestry support initiatives in tropical America (e.g. Gasché 2007, Pokorny et al. 2008, Hoch et al. 2009, Cornejo 2010). One conclusion is that the community forestry development model – understood as the efforts by external agents to promote community and smallholder forest management activities, and through these achieve objectives to increase rural monetary incomes and forest conservation – is not having the expected success in an important number of cases, at least in the Amazon region. In view of this, the chapter attempted to explain what the implications are for future efforts, and the potential for supporting community forestry in order to achieve development and conservation objectives.

Section two of this chapter reinforced that forests and trees play an important role in daily subsistence for the vast majority of low-income rural dwellers in the Amazon basin. However, it also confirms that forest- and tree-based activities are relatively marginal compared to other economic activities that yield better returns per investment of labour, land, or others. Financial analyses of several forestry activities listed in Table 16.1 do suggest poor returns compared to agricultural practices, and forestry only receiving investment of marginal labour (Hoch et al. forthcoming). In general, when rural households' economies improve, they tend to shift their economic strategies to a more specialised portfolio of activities, often leaving forestry activities behind. On the other hand, quite a number of financially attractive forestry activities have been reported in Amazonia, including cocoa and palm fruit production, tropical cedar planting, or tree enrichment planting (Padoch and Pinedo-Vasquez 2006, Hoch et al. 2009).

What, then, explains the poor outcomes of community forestry initiatives? Section three of this chapter identifies some of the major challenges that such initiatives face. A key challenge relates precisely to the difficulties of forestry activities to generate profitable incomes under the ecological and economic circumstances prevalent in many parts of tropical America. The community forestry development models require a local adaptation to a set of practices, customs, and rules that are not only alien and difficult to comprehend and absorb, but they also conflict to an important degree with local moral-economic principles. This, for instance, imposes serious constraints in the organisational adjustments that local foresters need to make when they set up CFEs. The realities of an insertion in a forest product value-chain of community forestry produc-



tion demand important organisational adaptations. Proponents of the community and smallholder development model have suggested that the formation of CFEs increases the opportunities for successful outcomes of initiatives. However, the hurdles that need to be overcome for a successful establishment of a CFE surely contributed to the number of failed cases of CFEs.

One additional challenge faced by community and smallholder development initiatives is a persistently limiting institutional and political environment in all Amazonian countries. This is the case with much of the legislation, policies, and regulatory bodies that affect community forestry, but also with those that affect forest product markets, and the access and conditions of credits. Regulations and policies have mostly been designed for large corporate actors. A progressive entrance of local producers into commercial forestry production has hardly led to an adjustment of standards and subsequent modification of regulations. Where such adjustments were made, the modified regulations were quite regularly abused by non-local producers and as a consequence legal simplifications to benefit local producers were often reversed.

There are, however, other constraining conditions that equally explain the poor rate of success of local forestry assistance initiatives. Forestry development initiatives suffer from inadequate funding, poorly trained technical staff, and the requirement to comply with planning and implementation regimes imposed by funding agencies even where they are not ideal for the objectives and local conditions. Several critics of the forestry development establishment (e.g., Campbell and Sayer 2003, Sayer and Campbell 2004) have suggested that goals and objectives should be adjusted during the lifetime of assistance initiatives, that implementation is more flexible, that problems be addressed by multidisciplinary teams, and that local ownership of initiatives be assured.

The executing agencies, often NGOs, are not always able to establish optimal implementation conditions. A limited pool of capable technical staff contributes to this limitation. Forestry faculties in Latin America, but also in many other locations in the world, are slow in adjusting their education curricula to train a cadre of forestry experts who have a broad understanding of the issues and who have the required skills (Pokorny et al. 2008). Forestry development initiatives often have to hire personnel who move from initiative to initiative, which creates vested interests for a continued stream of new initiatives.

As a last point, commentators are increasingly arguing that Amazon forest-based societies operate according to their own practices, values, preferences, and priorities (Henkemans 2001, Gasché 2004 and 2007, Varese 2005, Lynam et al. 2007, Chirif 2009). The value-laden visions and perceptions of the de-

velopment actors differ from the forestry producers receiving external assistance to the extent that any successful outcome is hardly to be expected. Forestry development experts have, in many occasions, failed to adequately understand these local realities, and neither have they been able to adjust their *modus operandi* according to these local realities. According to Gasché (2002, 2007), development experts operate from an innate sense of self-superiority and subsequently fail to appreciate the practices, values, preferences, and priorities of their forest-based interlocutors. In addition, development experts do not know or apply the adequate methods that are required to overcome the fundamental differences in socio-cultural realities between them and local forest managers. In view of this, many experts suggest that “living together” and “mutual learning” between development experts and local interlocutors is necessary to overcome these differences (Gasché 2002, Overing and Passes 2000, Campbell and Sayer 2003, Sayer and Campbell 2004, Evans et al. 2008).

In many locations, it is not easy to make export-oriented forest product value-chains, or opportunities to improve the livelihoods of rural forest stewards, more compatible with socio-economic and cultural realities of tropical forest community and smallholder producers. This is not to say that there is no possibility or no need to do so. Rural forest producers are not stagnant, nor do they want to be; they have aspirations and many pressing needs. Where these shortcomings are to be resolved, a link between rural realities and the wider national, regional, or international community is one of only a few available options. However, to date, too often, efforts to address genuinely local needs and at the same time address the needs of the wider society have yet to have been pursued with adequate understanding of the mismatches between local rural realities and models, and those that characterise the economic and social life of societies outside this rural reality.

The community forestry development establishment has indeed observed the self-generated forestry models, but has failed to interpret those adequately to propose forestry development models that are acceptable to local forestry protagonists. Externally proposed forestry development models do not last unless they are rooted in the local social structures, economies, and value systems. If they don't meet these conditions, they become ephemeral and constitute a drain on national and international resources. Even though linking to export markets appears to be necessary in order to achieve some significant economic benefits, they are not the best departure points from which to design new models, unless those models have truly been adjusted to local realities. And the only ones who can truly judge whether or not that is the case, are the local producers, and nobody else.

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