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## COMMUNITY-BASED FOREST ENTERPRISES

Their status and potential in tropical countries

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INTERNATIONAL TROPICAL TIMBER ORGANIZATION



# COMMUNITY-BASED FOREST ENTERPRISES

THEIR STATUS AND POTENTIAL  
IN TROPICAL COUNTRIES

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ITTO Technical Series #28



INTERNATIONAL TROPICAL TIMBER ORGANIZATION  
RIGHTS AND RESOURCES INITIATIVE  
FOREST TRENDS

**Community-based forest enterprises**  
**Their status and potential in tropical countries**

ITTO Technical Series #28

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The International Tropical Timber Organization (ITTO) is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. Its 60 members represent over 80% of the world's tropical forests and 90% of the global tropical timber trade. ITTO develops internationally agreed policy documents to promote sustainable forest management and forest conservation and assists tropical member countries to adapt such policies to local circumstances and to implement them in the field through projects. In addition, ITTO collects, analyses and disseminates data on the production and trade of tropical timber and funds projects and other actions aimed at developing industries at both community and industrial scales. All projects are funded by voluntary contributions, mostly from consumer member countries. Since it became operational in 1987, ITTO has funded more than 750 projects, pre-projects and activities valued at more than US\$300 million. The major donors are the governments of Japan, Switzerland and the USA. ITTO contact details are given on the back cover.

The Rights and Resources Initiative (RRI) is a global coalition to advance forest tenure, policy and market reforms. Formed by international institutions and community organizations, the activities of RRI aim to reduce rural poverty, strengthen forest governance, conserve and restore forest ecosystems, and achieve sustainable forest-based economic growth. The coalition encourages reform by engaging with governments and civil society to disseminate strategic information and examples of threats, opportunities, and models for reform. More information is available at [www.rightsandresources.org](http://www.rightsandresources.org)

Forest Trends is a non-profit organization that advances sustainable forestry and forestry's contribution to community livelihoods worldwide. It aims to expand the focus of forestry beyond timber and promotes markets for ecosystem services provided by forests such as watershed protection, biodiversity and carbon storage. Forest Trends analyzes strategic market and policy issues, catalyzes connections between forward-looking producers, communities and investors, and develops new financial tools to help markets work for conservation and people. It was created in 1999 by an international group of leaders from forest industry, environmental NGOs and investment institutions. More information is available at [www.forest-trends.org](http://www.forest-trends.org)

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## Foreword

Like the tropical forests themselves, community-based forest enterprises (CFEs) are highly diverse. They are emerging across the tropics: dynamic, small-scale businesses that tap the huge wealth of entrepreneurial talent that exists in Indigenous and local communities. CFEs not only can turn a profit; they can also improve the conservation of the forest and perform valuable social services.

CFEs have become a force to be reckoned with largely because of recent changes in land-use policies in many tropical countries that have granted land tenure and resource-use rights to Indigenous and local communities. Such communities now own or administer at least 378 million hectares of forest, or 22% of forests in developing countries and 19% of forests in tropical countries, a figure that is likely to at least double in the next decade.

But CFEs also face many obstacles, including the often incomplete nature of land tenure reform, a lack of business and technical skills, remoteness, the lack of infrastructure, and lack of financial infrastructure and credit. Access to markets in particular is both a significant obstacle and an emerging opportunity for community enterprises. Market barriers and poor access to diverse markets constitute some of the most critical constraints on CFE expansion and success. Yet this is also changing – in many places, community forest enterprises are discovering new opportunities and new markets in the traditional wood sector and especially for non-wood forest products and ecosystem services.

CFEs and other small and medium-scale enterprises have a growing share of the forest sector market. They constitute the majority of enterprises and are a major employer in developed forest-rich countries and in countries with rapidly expanding domestic markets like India, China and Brazil. CFEs have a unique ability to market a diverse mix of timber and non-timber products to culturally differentiated niches and are transferring their entrepreneurial skills to new, complementary income streams from individual smallholdings or conservation, ecosystem or ecotourism services.

This report was commissioned by the International Tropical Timber Organization (ITTO) to help illuminate barriers to the growth of CFEs and to identify potential solutions; it involved a wide-ranging study undertaken by a team from Forest Trends and the Rights and Resources Initiative and included an in-depth examination of 20 CFEs in 14 countries. The report was used to set the scene for a major international conference on CFEs held in Rio Branco, Brazil, in July 2007 attended by 300 community leaders, their supporters, and government policy-makers. The declaration issued by the conference is included at the back of this report and the conference proceedings are available in a separate document.

There is no doubt that CFEs will help shape the tropical forests of the future. It is clear that, when their rights are respected and their enterprises are allowed to compete, Indigenous and local communities in tropical forests worldwide are boosting local incomes and protecting the forests they depend on for a living. If the policies are right, they will be an enormous force for good. Governments, ITTO and other international institutions, and regional and community associations can work to create the conditions in which CFEs can flourish. This report and the conference that followed are contributions towards that goal.



**Manoel Sobral Filho**  
Executive Director, ITTO



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Coordinator, Rights and Resources Initiative



**Michael Jenkins**  
President, Forest Trends

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## Acronyms

ACOFOP	Association of Forest Communities of the Petén (Guatemala)	FPCD	Foundation for People and Community Development (PNG)
AGROFORT	Agroforestry Association of Tumupasa (Bolivia)	FORESCOM	Forest Community Company of Forest Services (Guatemala)
AMI	Integrated management association (Honduras)	HCVF	High conservation value forest
ASL	Local social association (Bolivia)	IBENS	Brazil Institute for Education on Sustainable Enterprises
CAAM	Council of Extractivist Associations of Manicoré	ILO	International Labour Organization
CAFT	Tri-National Cooperative Agroforestry Association (Cameroon)	ITTO	International Tropical Timber Organization
CAR	Autonomous regional corporation (Colombia)	JATIFF	Jamorai Timber and Fuelwood Federation
CATIE	Tropical Agricultural Research and Higher Education Center	LKS	Lesser-known species
CCMSS	Mexican Community Sustainable Silviculture Council	MA&D	Market Analysis and Development program
CDM	Clean Development Mechanism	MASBOSQUES	Corporation for Forest Sustainable Management (Colombia)
CFC	Community forest committee (the Gambia)	MFROA	Madang Forest Resource Owners Association
CFE	Community-based forest enterprise	NGO	Non governmental organization
CIG	Common interest group	NPPFRDC	Ngan Panansalan Pagsabangan Forest Resources Development Cooperative (Philippines)
COATLAHL	Cooperative of Honduran Forest Producers of the Atlantic Coast	NWFP	Non-wood forest product
CORNARE	Autonomous Regional Corporation of Rio Negro-Nare (Colombia)	ODA	Official development assistance
CSAG	International Tropical Timber Council Civil Society Advisory Group	PNG	Papua New Guinea
EMPA	Materials Science and Technology (Switzerland)	PROFOR	A multi-donor trust fund program housed at the World Bank
FAO	Food & Agriculture Organization of the United Nations	RECOFTC	Regional Community Forestry Training Center for Asia and the Pacific
		SINA	National Environmental System (Colombia)
		SME	Small and medium-sized enterprise
		WRI	World Resources Institute

## Executive summary

Small and medium-sized enterprises (SMEs), including those owned by communities, are widely known to comprise the bulk of the forest industry globally. Approximately 30 million of the 47 million permanent jobs in the formal forest industry are found in small enterprises, most of which have fewer than 20 employees. SMEs and smallholders provide more than 50% of the wood harvested in the European Union countries and the United States, and generate a majority of the employment in processing and contracting. While statistics for the forest sector are generally not complete for tropical producer countries, surveys of specific countries and regions and information from other sources confirm that SMEs are the main component of forest industry in these countries. They make up 96% of all enterprises in Brazil, produce 20% of GDP and undertake the bulk of Brazilian forest sector operations (May et al. 2003). They comprise 95% of all forestry enterprise activity in India and account for 500,000 jobs, of which only 150,000 are in the formal sector. By one estimate, the contribution of forestry to employment is more than double that generally given in global statistics when the small-scale, community and informal sectors are included.

Like all forest enterprises, community-based forest enterprises (CFEs) have a mixed record, with numerous cases of successes as well as failures. As the experience in developed countries attest, SMEs can emerge and flourish where the tenure and policy frameworks allow them to exist legally and compete fairly with large-scale enterprises. Unfortunately, only a few tropical countries have had favourable conditions in place for a sufficiently long time to enable their development or viability. This study identifies some shared trends in the emergence and development of CFEs in a range of tropical countries that indicate a high level of promise overall.

### General findings

**1. Community-based forest management and related enterprises have expanded dramatically in developing countries with the recognition of historic tenure rights and the transfer of responsibilities to local levels.** CFEs are a growing type of SME. Communities in the ITTO tropical timber producer countries have long been important players in the forest sector – as owners of natural and planted forests, as collectors and consumers of a large variety of timber and non-timber species, as agriculturalists, agroforesters and livestock managers in forested landscapes, as managers of forests for cultural or sacred values and social uses, and as enterprise managers producing timber and non-wood forest products (NWFPs) for commercial markets. CFEs have expanded as a component of the forest products and services industry in a number of countries and regions, including Mexico, Guatemala, Honduras, Bolivia, Nepal, India and China. There is growing evidence from around the world that when policy and tenure constraints are lifted, there is a rapid response in both the number of CFEs and their contribution to employment and local income.

**2. Community forest management has unique advantages for the rural economy and forest conservation yet faces serious challenges for growth.** CFEs generate unique benefits and returns. They tend to have a longer time horizon for resource management, both for generating employment and for conserving the multiple values of the forests that support their livelihoods, and have specific social and cultural value. Their potential has not been realized in many countries due to a lack of clear tenure rights and adverse policy and regulatory environments. Policies and subsidy schemes have generally been designed with large, formal industry in mind; regulatory frameworks in many countries disadvantage CFEs and greatly reduce their potential profitability.

Outmoded regulatory frameworks impose slow and costly permit processes and artificial business models. Bureaucratic processes can also be slow and difficult or costly to navigate. Internal challenges, local social inequities, limited technical and business skills, the quality and scale of production, and potential internal conflicts all require strong social/governance processes and horizontal learning as well as appropriate access to market and other information and technical knowledge.

### Specific findings

**Specific finding 1: CFEs generate a range of goods and services that are not created by individual enterprises or private industry.** The cases studied and the broader literature reviewed demonstrate that CFEs tend to invest more in the local economy than their private-sector equivalents, fostering social cohesion and longer-term equity and making greater social contributions. CFE organizational structures can be advantageous in the marketplace. They are flexible, able to switch among different blends of products. They can also be self-exploiting when necessary, absorbing labour costs in difficult stages of operation or transition. CFEs often apply traditional knowledge to their operations, create innovative approaches, and find new ways to increase employment and diversify income strategies.

**Specific finding 2: CFEs can be very profitable.** CFEs studied for this report showed returns of 10-50% from their timber and NWFP activities. More mature CFEs have invested in the diversification of economic activities, making greater use of their forest resource, managing risk and creating new sources of employment and community skills. Rising prices for hardwoods and other natural forest species and selected NWFPs and increasing consumption of natural medicinal products, traditional foods and crafts all favour CFE economies. Markets for water services or carbon can be lucrative and growing additions to their enterprise returns.

**Specific finding 3: CFEs are important conservation agents in forests of high biodiversity.** In forest-rich areas, CFEs have been positive forces for biodiversity conservation, including by making investments that lead to significant reductions in forest fires. As they mature, CFEs tend to diversify, looking for ways to make better use of the forest resource, generate greater employment, minimize their costs relative to returns, and generate income

for investment in conservation. Some are also providers of goods and services in the new markets for ecosystem services and the rapidly expanding markets for recreational or ecotourism.

**Specific finding 4: Internal constraints and market barriers can limit CFE emergence and growth.** CFE development is constrained by important internal barriers, including: internal social conflicts, the mismanagement of resources and income by individuals, a lack of organizational, business and technical skills, deforestation pressures from agriculturalists in the community, and unwillingness to adapt practices to market demands. These barriers can result in limited growth or the failure of CFEs, but can be balanced by the positive dynamics that CFEs bring to an enterprise—a greater sense of ownership and commitment, a long-term commitment to their social group and resource base, and an ability to draw upon local social and cultural practices for innovation and problem-solving. Where there has been long-term accompaniment by outsiders that is respectful of social and cultural dynamics, internal constraints can be solved more effectively, particularly when there are real investments in building the professional and administrative skills of the CFE members themselves. CFE success is also challenged by barriers to robust markets: communities tend to lack access to roads and energy infrastructure and find it hard to get formal credit or finance. The small scale of production (sometimes imposed artificially by community forestry schemes) means that CFEs need to seek high-value markets, but as newcomers they are perceived as very risky for investment in value adding.

**Specific finding 5: Regulatory and policy barriers can be a major constraint to CFE emergence and growth.** Insecure tenure and use rights and political instability limit CFE emergence, even in countries that have changed their legislative framework to foster participation. Organizational models or forest areas mandated for CFEs can conflict with local custom and predisposition or be inconsistent with demographic and biophysical realities and livelihood strategies. Tax systems at the point of extraction ignore the significant non-financial benefits created by CFEs and lose potential revenues higher up in the value chain. Relative to other actors in the sector, insufficient funding has been provided directly to CFEs and their associations, starving them of skills and knowledge. Excessive bureaucratic procedures result in high transaction costs.

**Specific finding 6: The scope for CFEs to increase in importance and in their contribution to development in the tropical timber-producing countries.** While some countries have begun to reduce constraints, there is a much greater potential to support the formation and growth of CFEs. Only a fraction of CFEs has been empowered to formally engage in commercial enterprises in countries that have recently modified their policies and legislation.

### **Key recommendations for producer countries:**

- Reduce or modify regulations, including tax mechanisms, that impede the formation of CFEs or make them uncompetitive
- Provide secure tenure and access to forest resources, including authority to make key decisions
- Enable community stakeholders to be part of the policy dialogues that affect their right to own, use and trade forest products and services
- Increase community participation in developing the rules for emerging markets for ecosystem services and socially responsible wood and non-wood production

- Build the capacity of the decentralized authorities legally responsible for overseeing CFEs
- Build the capacity of CFEs and their associations and improve the supply of market information, technical assistance and appropriate finance
- Reorient business and technical service delivery to recognize the integrated nature of CFEs and raise the quality and coverage of service provision in technical and market approaches

### **Key recommendations for the International Tropical Timber Council**

- Support analyses of CFE tenure, forest management, enterprise structure and potential role in the marketplace
- Privilege projects that support CFEs
- Promote exchanges among CFEs to transfer lessons and inform policy-makers
- Establish a new financial instrument to directly support CFEs and their associations
- Host an international conference to disseminate findings



# 1 Introduction

## Small and medium-sized enterprises

Small and medium-sized enterprises (SMEs) are widely known to comprise the bulk of the forest industry in forest-rich countries. Forest-based SMEs include enterprises with one or more of the following characteristics: a business operation aimed at making a profit from forest-linked activity, employing 10–100 full-time employees, or with an annual turnover of US\$10,000–US\$30 million, or with an annual roundwood consumption of 3,000–20,000 m<sup>3</sup> (Mayers 2006). Other definitions also encompass micro-enterprises, which generally employ only one or two individuals and tend to exist outside the formal economy. In formal employment statistics, 30 million of the 47 million permanent jobs in the forest industry are found in enterprises of less than 20 employees (Poschen 2001). These figures are even more dramatic when the informal sector is taken into account; it is estimated that there are some 140 million individuals working in informal forestry micro-enterprises around the world (Mayers 2006).

Data for forest sector SMEs in tropical producer countries is generally not extensive. However, surveys of specific countries and regions and anecdotal evidence confirm that SMEs are the main producers of both domestically and internationally traded wood products (FAO 2005, WRI 2005). A recent estimate suggests that forest-based SMEs may account for more than 80% of all forestry enterprises in many developing countries (Mayers 2006). For instance, SMEs make up 96% of all enterprises in Brazil, produce 20% of GDP and undertake the bulk of Brazilian forest sector operations (92% of industry, 97% of commercial, and 97% of services; May et al. 2003). They comprise 95% of all forestry enterprise activity in India: 98% of sawmills, 87% of plywood factories and 94% of paper mills (Saigal and Bose 2003). In Uganda, it is estimated that there 511,530 forest-based SMEs, with the vast majority belonging to the micro-enterprise category (Auren and Krassowska 2003). SMEs harvest more than 50% of the timber and wood supply in both the United States and the European Union (Butterfield et al. 2005). In the former, SMEs currently contribute over 37.4% of the total employment in the solid wood products processing sector (US Census Bureau 2007). In the latter, it is estimated that 90% of forestry-related firms

employ fewer than 20 workers (Hazely 2000) and that “they constitute the heart of innovation, wealth generation and new employment in the economy” (Liikanen 2002). Notably, the importance of SMEs in both these regions is on the rise as larger-scale commodity producers increasingly migrate to the southern hemisphere.

SME forest product processing and trade is one of the three largest categories of non-farm, rural activity in several Food and Agriculture Organization (FAO) studies (Spears 2004); it has been estimated that over US\$130 billion of gross value-added is contributed annually by such enterprises (Macqueen 2004). The International Labor Organization (ILO) estimates that the contribution of forestry to employment is likely to be triple that shown in global statistics; FAO concludes that forestry makes up 6% of GDP in 23 African countries, or double that officially reported (Lebedys 2004; ILO 2003). Millions of SMEs also exist in the construction and building sector, as wood artisans, fuelwood and charcoal suppliers and traders, and in the furniture industry. They are important providers of ecosystem services and increasingly provide tourism services as well.

SMEs are found across industries and market segments. Evolving market and production dynamics are creating new opportunities for them in both developing and developed economies, such as rising prices for high-quality hardwoods from natural forests, new markets for carbon and/or biodiversity offsets or water flow and quality services, and even high-volume, low-value commodity goods where competition is fierce. Some examples of forest-based SMEs include:

- suppliers of raw material, mainly of commodity and appearance-grade wood and also both low- and higher-value non-wood forest products (NWFPs);
- vertically integrated processors of products, as mill owners or artisans;
- managers of mixed enterprises in their own natural forests, including both forest industry activities and other services, such as tourism;
- participants in markets for services—either payment schemes for watershed or carbon and/or biodiversity offsets or ecotourism and biodiversity payments;

- contractors to companies for services with their own forest resources on the side;
- formal or informal associations of small producers manufacturing common goods; and
- SMEs with their own agroforests, like furniture or wood-carving artisans who sell collectively.

On the one hand, the scale of SME participation in the forest sector is huge. Compared to the larger-scale and more formal enterprises, however, income per labour input and productivity are much lower in the large countries studied, including Brazil and South Africa (Macqueen 2004). In addition, in the commodity wood sector, much of the SME sector is found along those parts of the value chain most subject to downward price pressure as competition increases (Lewis et al. 2004; Macqueen 2004). A study of SMEs in South Africa found that, despite conscious support from government to foster enterprises in the pulp and paper and sawnwood industry for raw material supply and transport, most were earning very marginal incomes and were under tremendous pressure within the value chain to reduce costs and charge less for their services (Lewis et al. 2004).

### Definition of CFEs

For the purposes of this analysis, community-based forest enterprises (CFEs) are forest industries managed by indigenous and other local communities for livelihoods and profit and are engaged in the production, processing and trade of timber and wood products and commercial NWFPs, and may participate in markets for environmental services (Clay 2002). Most, but not all CFEs, fit the definition of an SME, either because of the number of employees or because of capital investment. Some sophisticated, vertical-processing CFEs may have more employees and capital than allowed in the earlier definition of SMEs, but they may still marry the economic goals of their enterprise with the social and environmental goals of the community. Some differentiated CFEs actually function like an association of SMEs or CFEs, where subgroups of actors within the enterprise take responsibility for specific activities within the general governance structure of the community.

CFEs in tropical timber-producing countries are increasingly significant players in the domestic and global marketplaces. Where CFEs have been favored by social conditions, markets, and policy and

regulatory frameworks, including tenure regimes, they have a track record of successful forest management and supply a wide range of raw materials and end products to domestic and export markets, in some cases in partnership with the formal processing industry. They also contribute to the general economic status and well-being of the community through employment generation and investments in social goods and services, natural resource conservation and cultural assets (Barry et al. 2003; Bray and Klepeis 2005; WRI 2005; Jenkins 2004; Scherr et al. 2004).

A small but significant number of CFEs have now reached a stage of age and maturity to yield important lessons of experience for other communities seeking to directly manage their forest as a successful enterprise. These examples are highly profitable, both financially and in the multi-dimensional benefits they provide to community members, the global environmental community, and the national and rural economies. There is a smaller group of CFEs that participate in payment schemes or markets for ecosystem services, either separately or as part of their overall forest management and enterprise strategy. In areas of high biodiversity, including in and around public protected areas, donors and government programs have promoted CFEs based on timber, NWFPs and ecosystem services, including tourism, either on public lands by transferring communal administrative rights or on community and/or private lands.

The track record of CFEs has been mixed, often due to the uneven policy and regulatory frameworks within which they evolve. Few countries apart from Mexico and Guatemala have provided a consistent framework for CFE emergence and growth. Internal social conflicts and inherent limitations of scale and product quality have also acted to prevent CFEs from emerging in many communities or have checked their growth.

What is striking in the countries with enabling frameworks is the large number of CFEs that have entered and stayed in the market. Some of these enterprises have been fostered by donor, government or non-governmental entities, in some cases with these entities acting as the organizational umbrella for participation by multiple villages or multiple groups of producers. Where social capital or existing collective organization is limited, these 'umbrella' models have provided organizational support, transferred skills for market and production analysis, eased the completion of formal legal or bureaucratic procedures, and

fostered attention to issues of inclusion and equity. There are only limited examples of enterprise support that helps CFEs create alternative market and processing linkages with other SMEs in the value chain, as suggested by May et al. (2003) for Brazil and Auren and Krasowska (2004) for Uganda.

### Changing context for CFEs

Rapid transitions taking place in the forest industry are transforming the roles and relationships between large enterprises and SMEs. Most private enterprises are corporate bodies or individuals who may or may not be the owners of the forest resource that supplies their raw material. The conservation of forest resources or guaranteeing a sustainable supply from a particular forest area may not be priorities. The recent major changes taking place in forest ownership and conservation structures in many countries are propelling a different type of forest enterprise which is collectively owned and managed by communities and both generates income for its members and provides valuable social and conservation outcomes (Zarin et al. 2004; Salazar 2005).

The link between forest markets and livelihoods has become a topic of increasing attention (Hudson 2005). It is commonly recognized that forests are a mainstay of a large number of the world's poor and that 1.6 billion people living in and near forests use forests for subsistence products and water supply and for generating a substantial portion of their cash income (WRI 2005; Bojo and Reddy 2003; CIFOR 2005; Arnold and Ruiz Perez 1998). The forest-dependent poor include Indigenous peoples in natural forest areas, rural people living on the forest margins, smallholders practicing agroforestry or managing remnant forests, artisans/employees in informal enterprises (Calibre and SCC 2000; Krishnaswamy and Hanson 1999; Scherr, Kaimowitz et al. 2004), and new settlers, particularly migrants coming to the agricultural frontier in search of new opportunity or political refuge.

It is also known that most of the participation of these low-income forest producers in the economy has been in low-value, low-return markets with high risks and that only a subset of wood and non-wood forest products generates significant livelihoods for large numbers of producers. There are constraints on output, profit and productivity. In some segments, only limited opportunities exist to change this picture,

particularly with the consolidation of 50% of the timber trade in vertically integrated pulp, paper and commodity wood and wood substitute markets. In other segments, given a configuration of social impetus, enabling conditions, effective technical support and information, community-based natural resource management experiences have been transformed into effective CFEs.

This report reviews the experience of CFEs in ITTO producer countries, drawing lessons from Latin America, Africa, and Asia and the Pacific<sup>1</sup>. It also identifies and analyzes the internal and external constraints to CFE success, particularly policy, tenure and regulatory barriers and market structures and makes recommendations for future intervention that can enable their emergence and growth. The experiences of 20 enterprises are portrayed through case studies (see Table 1) prepared by a range of specialists using a common methodological approach. This case-study information has been analyzed in light of a wealth of secondary literature that has appeared over the past decade on new market trends in the forest sector, SMEs, community-based forest management, community-company partnerships, NWFPS, and markets for ecosystem services.

### Objectives and scope of the review

The analysis concentrates on CFEs in which rural people collectively manage the production, processing and/or trade of forest goods and services in forests – natural, planted or mixed agroforestry – over which they have rights and access. The analysis complements the extensive studies that have been done by the International Institute for Environment and Development and others on SMEs in the forest sector (Macqueen 2004), and on smallholder agroforestry or tree plantations on private lands, including the outgrower schemes for timber and sawnwood production which are increasing in importance in India, South Africa, China, Kenya and Brazil (May et al. 2003; Lewis et al. 2004; Bose and Saigal 2004; Xu et al. 2004). It also complements the compilation of examples of company-community arrangements involving large company timber concessions, which involve communities as labourers or contractors of products and services, or in complementary income-

<sup>1</sup> China and Nepal are consumer members of ITTO but are included in this study because of their developing-country status. Neither the Gambia nor Tanzania is an ITTO member, but case studies from those countries are included because of the limited availability of case studies in ITTO African member countries and because they add regional data that could be useful for ITTO member countries.

Table 1: Summary of 20 CFE case studies

	Country	Case study	Organizational model	Type of production
Latin America	Guatemala	Arbol Verde	Producer association	Timber, NWFPs, tourism
	Guatemala	Carmelita	Cooperative	Timber, NWFPs, tourism
	Mexico	Santa Catarina Ixtepeji	Indigenous	Timber, Ecotourism, NWFP
	Mexico	El Balcón	<i>Ejido</i> (settlers)	Timber, wood products, cactus
	Mexico	Sociedad Sur	Union of settler communities	Timber, handicrafts
	Colombia	San Nicolás Forests	Smallholders	Carbon credit markets
	Honduras	COATLAHL	Cooperative	Timber, wood products
	Bolivia	AGROFORT	Indigenous Smallholders	Timber
	Brazil	Manicoré	Village-based sub-regional association under regional association	NWFPs
Brazil	Mamirauá	Village-based groups and Association	Timber	
Africa	Cameroon	Ngola-Achip	Village-based	Timber
	Cameroon	CAFT	Village-based	Timber, Cacao, NWFPs
	Gambia	Coastal Dev. Region	Mixed village and smallholders	Timber, honey, fibres, fuel
	Tanzania	Amani Butterfly Group, Eastern Usambaras	Village-based with cooperative society	Butterfly farming in village forests
Asia and Pacific	Nepal	Bel Juice Extract	Community-based company	Foodstuffs, medicinal
	Nepal	Chaubas-Bhumlu Sawmill	Community forest management forest user group	Timber
	Philippines	Ngan Panansalan Pagsabangan Forest Resources Development Cooperative (NPPFRDC)	Community-based forest management people's organization	Timber
	India	Pongamia–Clean Development Mechanism (CDM)	Village groups	Ecosystem services
	China	Pingshang Bamboo Group	Smallholders	Bamboo
	Papua New Guinea	Madang sawmills	Indigenous community	Timber

generating activities (Mayers and Vermeulen 2002; Anyonge et al. 2002; Vidal 2005; Bose and Saigal 2004).

This study surveys enterprises in both the formal and informal forest sectors, including those that participate in payment schemes and markets for environmental services (carbon sequestration, water generation and quality, landscape and recreation values, tourism services, biodiversity, etc). Some of the payment-scheme case studies involve the collaboration of communities with intermediary institutions that provide technical and marketing assistance and access to finance and training.

The case studies provide insights into the competitive potential of CFEs in a changing domestic and global marketplace and their ability to market or otherwise gain value from the multi-dimensional returns from their enterprises, including the social and environmental goods and services generated. There are many

examples of community-based forest management, such as the joint forest management experience in India, forest user groups in Nepal, Indigenous lands and territories in Philippines, the Amazon countries, and village forests and community-administered or co-managed forests in sub-Saharan Africa. There are many fewer cases of CFEs in these countries and elsewhere, in large part because the tenure and regulatory conditions have not been in place for these to emerge or thrive. Thus, while there were 1,500 CFEs to select from in Mexico, ranging from highly sophisticated successes to conflictive, inefficient harvesters, we found only one Nepali community milling operation because government has not approved any others.

This study surveyed a very large sample of CFEs in Mexico, carefully selected a range of experienced (successful) enterprises across states, and compared these to CFEs in other regions and countries. We

found too few enabling environments in the producer countries to enable a useful analysis of success versus failure. Given that SMEs have high failure rates in any given sector in developed countries, it is to be expected that many CFEs in developing countries will also fail.

In only a few forest-rich countries have conditions been created that enable a significant number of CFEs to emerge, either by securing forest tenure and access rights for communities or by favourable policy and regulatory frameworks that provide CFEs with affordable entry into the marketplace. Ironically, in countries like India and Nepal, which have the largest numbers of organizations of people around forests (99,000 village communities in India and hundreds of self-organized villages as well and more than 20,000 forest user groups in Nepal), restrictions on use have been high, handover confined to degraded lands, and CFE experience low.

The tenure, market and governance situation is changing quite rapidly. CFEs could garner a much greater share of the marketplace over the next decade or two, with wide-ranging benefits to the economy, rural people and forests.

## **Organization of the report**

Chapter 2 provides the market and social and political contexts within which CFEs are operating. Chapter 3 presents an overview of the case studies, including descriptions of organizational structure, economy of the enterprise, social and environmental benefits, and the obstacles and constraints for CFE emergence and growth. Chapter 4 analyses the case-study findings and identifies internal and external barriers and constraints. Chapter 5 summarizes lessons learned and makes recommendations for the future. Boxes appear throughout the text to highlight aspects of various case studies. The terms of reference for the study and the case-study methodology are contained in Annex I. The declaration issued by a major international conference on CFEs held in Rio Branco, Brazil, in July 2007 attended by 300 community leaders, their supporters, and government policy-makers is contained in Annex II. Annexes III and IV summarize the results of field surveys of Mexico CFEs and globally on markets for ecosystem services. Annex V provides summaries of each case study in PowerPoint form and Annex VI contains the full case studies. Annexes III–VI are not reproduced in this volume but are available on the web at [www.itto.or.jp](http://www.itto.or.jp).

## 2 Market and socio-political context

Changes in tenure, global and domestic markets, and corporate responsibility and governance have changed the context within which CFEs operate. The area of forest under community forest ownership has more than doubled in the last decade, much of it in the tropical countries, with indications that it is likely to double again in a similar time period (White and Martin 2002). Population increases in developing countries have fuelled growth in the domestic consumption of a myriad of wood products and NWFPs, while consumers in developed countries have broadened their use of forest products, particularly as a result of immigration from developing countries (Scherr et al. 2004; WRI 2005; Xu et al. 2004). New markets for ecosystem services have emerged in parallel to a greater corporate responsibility for positive environmental and social outcomes (Scherr et al. 2004; Rosa et al. 2003; Scherr et al. 2002). On the governance side, some tropical countries have decentralized authority and responsibility to local levels, empowering communities and opening access to market chains (Scherr et al. 2002). Though important transitions are underway, decentralization initiatives have often been more rhetorical than real, as numerous studies are beginning to document (Ribot and Larson 2005). In this first section of the chapter we look at the major changes that are taking place in the wood trade and industry, including new company agreements for raw materials, NWFP markets, and emerging new markets for ecosystem services. In the second section, we review the social and political context in tropical countries.

### Changes in the wood trade and industry

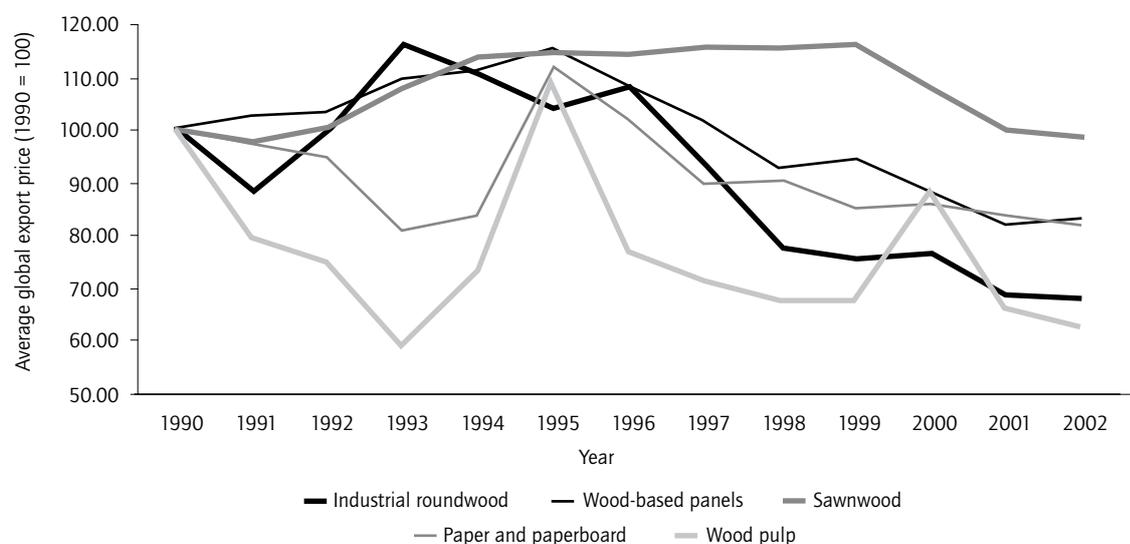
The structure of the global wood trade and industry is changing, marked by a perceptible shift in favour of intensive plantation forests over natural forests, the concentration and consolidation of the paper and pulp industry, the dominance of transnational companies in industrial roundwood processing and international forest trade, and declining or stable prices for most forest raw materials and products. At the same time, a growing domestic demand in developing countries (at times to meet re-export demand for finished products) is fuelling the growth of smallholder and community-managed forestry, plantations and enterprises. While the global forest

trade is dominated by large multinational companies, most employment in forest industries – 80% or more in many countries – is provided by SMEs.

FAO (2003) estimated the global forest trade to be in the order of US\$145 billion, of which US\$8 billion is tropical timber trade (Auren and Krasowska 2004). PROFOR (2005) estimated it to be \$130 billion, of which \$19 billion is NWFPs. The domestic consumption of many wood products and NWFPs consumed or traded domestically (eg fuelwood and poles for subsistence construction and use, local fibres and foodstuffs, and famine or emergency supplies) is many orders of magnitude higher; in India, fuelwood alone is estimated to be harvested by an amount of 130 million m<sup>3</sup> per annum above the sustainable supply from regular sources (PROFOR 2005) and locally consumed thatch grass for roofing in Mexico's Yucatan Peninsula exceeds US\$137 million per year in local market values (WRI 2005). Increasing domestic consumption in the population-dense tropical countries is creating a new trend in world trade. China increased its forest product imports from \$6.4 billion in 1997 to \$13 billion in 2004, 70% of the wood sourced from neighbouring Southeast Asian tropical countries and Russia (Xu et al. 2005). India is likely to follow China in greatly increasing both internal consumption and imports (*ibid.*).

The economics of large-scale global trade in industrial roundwood products favor intensive production in sites strategically situated for trade, and planted areas are expanding quickly, especially in the southern hemisphere, creating an unrelenting downward pressure on product prices (Bull et al. 2005). Such plantations often differ considerably from natural forests in structure and species composition, especially the highly diverse humid tropical forests. Industrial forest plantations now account for some 22% of industrially used forests and 34% of industrial production. More than a fifth of the world's wood is already produced from forests with average annual yields above 7 cubic meters per hectare, compared to the average yield of natural forests of 2 m<sup>3</sup> per hectare. In the tropics, 18 million hectares of plantations were established between 1990 and 2000 (FAO 2000), although some have also been abandoned due to poor performance.

Figure 1: Recent trends in export prices for selected global forest products



Created with data from FAOSTAT 2004

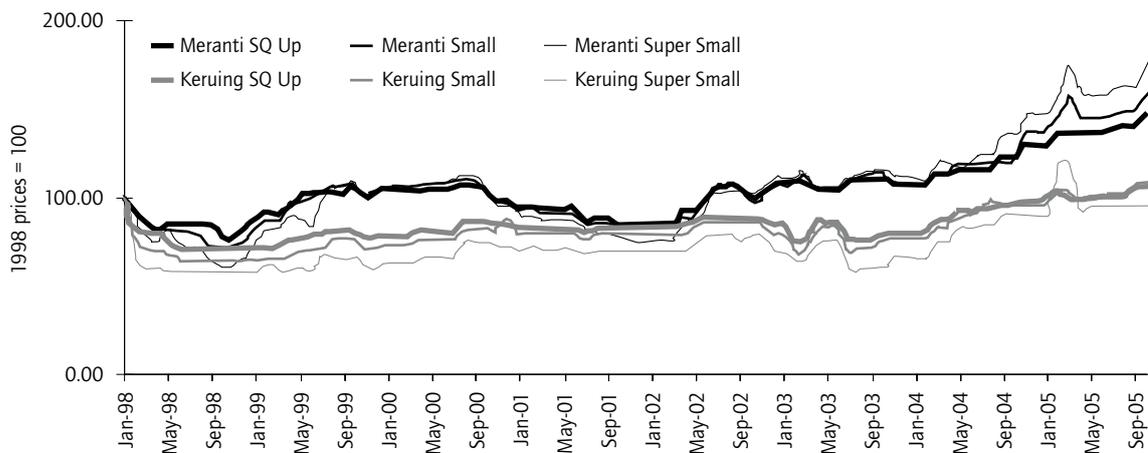
In some countries, industrial plantations out-compete local, small-scale producers in major export, industrial and urban markets because of efficiencies of scale. But, elsewhere, their competitive advantage is artificial due to subsidies for plantation establishment (Bull et al. 2005). While small-forest producers in developing countries presently play a small role in this new segment of the wood trade, their involvement is increasing rapidly as contract producers for mills face raw material scarcity (Mayers and Vermeulen 2002).

Most industrial-scale plantations are owned and established by multinational companies and are vertically integrated with processing facilities to cut costs and capture profits from all stages of the value chain, increasing concentration and efficiency (Brown 2000). Concentration also reflects the increasing scale and capital costs of industrial pulp processing. In the 1970s, the top 20 companies processed about 20% of industrial roundwood; in 1997, the top ten companies produced 20% of the total and the top 100 companies processed 50% of industrial roundwood. The rise of giant retailing firms such as Home Depot and Ikea increases the importance of guaranteeing large-volume and reliable flows of wood of consistent quality. About 50% of trade in timber and wood products is concentrated in the pulp and paper and industrial commodity wood sectors. And, while the export price of paperboard and sawnwood has been stable over the past few decades, the price of industrial roundwood for pulp, paper and wood-based panels declined by almost 25% between 1998 and 2002 (Figure 1). According to Leslie (2002),

prices of lower-grade wood, especially, will continue to decline or stabilize as plantation wood comes into the market.

In general, these trends work against the interests of low-income producers in developing countries. In most developing countries, the forest industry is characterized by small and medium-sized, low-efficiency firms who are struggling to confront the challenges of international price competition, with inadequate scale efficiencies, financing, technology and management. In some markets, local wood producers are forced to compete with low-cost, high-volume producers from around the world. However, there are also concurrent trends which work in favour of low-income producers, notably the growing importance of domestic markets. In most developing regions, the vast majority of wood-based production (more than 95%) is destined for domestic markets in the form of fuelwood and charcoal, industrial roundwood, and pulp and paper products (Scherr et al. 2004). This trend is expected to continue as domestic producers find competitive advantage in lower transportation costs and higher degrees of supply flexibility (Scherr et al. 2004) and as the already sizeable wood markets in Brazil, Russia, India and China grow. By concentrating on domestic markets, SMEs are well positioned to capitalize on this trend: "proximity to the customer can enable them to turn the apparent disadvantage of their small size and ties to a locality into positive assets through customizing just-in-time delivery and after-sales service" (Poschen 2001).

Figure 2: Comparison of prices for six tropical hardwood log types, Sarawak



Created with data from ITTO 2005

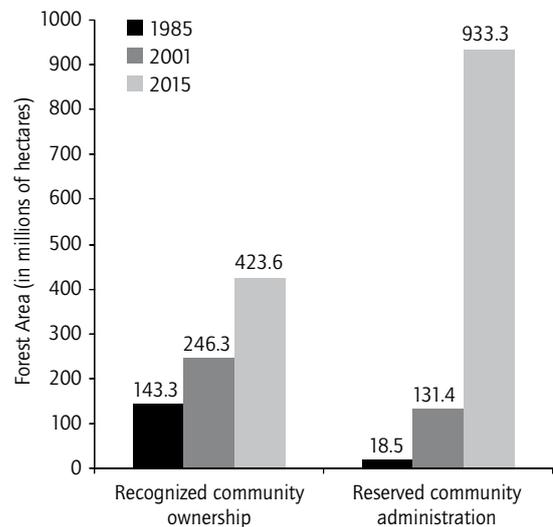
The commodity wood sector has become increasingly linked to a supply of timber from plantations, in many cases from smallholder forestry in private lands or from private trees grown in the agricultural margins (Leslie 2002). In contrast to price declines in the plantation sector, there is a growing scarcity in the supply of high-quality, appearance-grade wood, particularly hardwoods from native forests (See Figure 2). It is here and in the large domestic markets for locally available construction wood, small-scale woodcrafts, carpentry and furniture-making that CFEs have a natural advantage as managers of either natural forests or successional- and agro-forests.

### Changes in the social and political context

The second major change in the context in which CFEs operate is social and political. A key part of this is forest tenure. The historical dominance of public ownership in which state forests and state protected areas were established is starting to diminish. Social movements by Indigenous and other forest-dependent peoples, combined with policy decisions to decentralize and devolve forest management responsibility, have had dramatic outcomes. Fifteen years ago, only 7% of the world's forests were officially owned by communities, or owned by the state but administered by communities. Now, 11% are community-owned or community-administered worldwide (Figure 4), 22% in developing countries.

Some countries, such as China or India, have recognized rights or transferred responsibilities to a significant extent: 12–17 million hectares of publicly owned forests are under joint or community management in India and 90 million hectares are under collective ownership in China. Community-owned or -administered forest areas in developing

Figure 3: Historic and predicted change in community forest ownership and administration



The predicted changes to 2015 projected in the last column of each bar chart assumes that the rate of tenure recognition and reservation for community administration documented for the period 1985 - 2001 will continue in the period 2001 - 2015. Rights and Resources Initiative is in the process of updating the trends for a new, 5-year update analysis to be completed in 2008.

Source: White and Martin 2002

Table 2: Community forest conservation compared to public forest protection

Region	Community-conserved area <sup>a</sup> ('000 ha)	Forest area in 2000 <sup>b</sup> ('000 ha)	Public protected areas under forest <sup>b</sup> ('000 ha)	Percentage of forest community-conserved	Percentage of forest in public protected areas
Africa	33	650	76.0	5.7	11.7
Asia	156	548	50.0	28.5	9.1
South America*	155	886	168.0	17.5	19.0
Mexico/Central America	26	60	12.0	30.0	12.0
Global	370	3,869	479	9.7	12.4

Sources: <sup>a</sup>Molnar et al. 2005

<sup>b</sup>FAO 2001; estimates for Mexico/Central America extrapolated from data for North America

Table 3: The contribution of communities to conservation finance

Government support to protected areas systems	Official development assistance (ODA) and foundation support	Community investment
<b>Stable</b> US\$3 billion per year globally; comprising US\$1000–3000/ha in developed countries and US\$12–200/ha in lesser developed countries	<b>In Decline</b> US\$1.3 billion/year ODA, US\$200 million/year for others	<b>Growing</b> US\$1.5–2.5 billion/year at a minimum

Note: Community investment is based on data from communities on average annual expenditure and in-kind labour allocated to fire control, guarding, biological monitoring and habitat restoration

Source: Molnar et al. 2004

countries are conservatively expected to at least double by 2015, to 700–800 million hectares of the total 3.6 billion hectares of forest. According to the projections of the World Resources Institute, World Bank and others, 50% of the world's forests will be community-owned or community-administered by 2050 (WRI 2005).

With increasing recognition of Indigenous and other community land rights, the amount of forest actively conserved by communities has been expanding. According to a recent study (Molnar et al. 2004) identifying community-conserved forest landscapes outside the limits of public protected areas in Africa, Asia, Latin America and North America, community-conserved forest areas aggregate to a conservative initial estimate of 370 million hectares, including forest lands, forests in agriculture and forest mosaics, and agroforests. This is nearly as large as the 479 million hectares of forests estimated by FAO (2001) to lie within public protected areas in those regions in 2000 (Table 2).

Communities in Latin America, Asia and Africa invest considerable amounts of money and in-kind resources in their conserved areas, amounts comparable to those contributed by international donors and national governments. Table 3 compares estimated community investment in conservation in the 370 million hectares of community-conserved areas with the investment provided globally by governments, official development assistance and foundations.

In parallel to the dramatic shift in forest tenure, there has been a corresponding political transition toward decentralizing government responsibilities to local governments. In some countries, this includes recognizing the authority of traditional, customary governance structures at the community level and their responsibility for administrative functions like conservation and forest or watershed resource management. Decentralization has taken many forms and, as for tenure recognition or transfer, has often not been sufficiently implemented. Tenure rights do not always encompass use or access rights over more

valuable forest products or their commercialization. Decentralization to local levels has not always included the elimination of countervailing laws or regulations that concentrate power and decisions. Nor has the decentralization of responsibilities necessarily been accompanied by a transfer of the financial or fiscal resources or the capacity-building and training necessary to undertake those responsibilities adequately.

The Colombia, Mexico and Bolivia case studies prepared for this report show dramatic changes due to decentralization. Colombia is one of the most decentralized countries in Latin America: 40% of total public expenditure is managed locally (by municipalities). The management of forests is part of the National Environmental System (SINA), which was established by Law 99 in 1993 and consists of 33 autonomous regional corporations (CARs). These corporations are responsible for the management and administration of all natural resources in their jurisdictions, including the granting of concessions, permissions and authorizations for forest harvesting. CARs are the main institutions for supporting local initiatives on sustainable forest management in the country.

Where the tenure shift has been genuine, not only on paper, and accompanied by the lifting of controls and decentralization of decision-making and administration there has been a significant increase in CFEs. Mexico and Bolivia have dismantled state control over the marketing of forest products and rules of association for harvesting and marketing and reassigned responsibilities for approval processes to local government levels, which communities and CFEs can access more easily. The authority of Mexican *ejidos* and communities over zoning and forest management decisions has been recognized. In Bolivia, municipalities are empowered to oversee natural resource decisions within their jurisdictions and to issue environmental permits. As a result of forest-sector reform there, the number of hectares managed by CFEs (Indigenous communities and local social associations—ASLs) has gone from none in 1999 to 1.1 million in 2005 with 30,000 m<sup>3</sup> of timber extracted; harvesting from smallholder management units increased from 50,000 m<sup>3</sup> to 250,000 m<sup>3</sup> in the same period. In Mexico, 1,200 *ejidos* or communities had management plans and approvals for forest harvesting in 2000, and now there are more than 2,000. This shift has occurred in both countries with relatively minimal outside investment.

## **Increasing company-community agreements in the marketplace**

Company agreements with low-income producers are a rapidly growing phenomenon, largely in response to the growing scarcity of large blocks of land for plantations. Most agreements have been between companies and sets of individual producers, some of them with cooperatives and a smaller subset with CFEs. A global study by IIED looked at 57 partnerships, mainly for supplying raw materials to processing industries. Agreements included simple purchase contracts, as well as contracts to supply everything from venture and working capital, technical assistance and inputs, and equipment rental or purchase (Mayers and Vermeulen 2002). A study in South Africa (Lewis et al. 2004) identified 18,000 smallholders engaged in company agreements for plantation outgrowing and at least another 5,000 smallholders who financed their own commercial plantations and harvesting with no relationship with companies or formal finance.

A study comparing trends in Brazil and Mexico found these kinds of agreements in outgrower schemes and, to a growing extent, in established CFEs in the Amazon and throughout Mexico. In Mexico, relationships have been more limited due to historical mistrust between industry and communities over earlier government-mandated concessions in community lands, but some companies have developed close relationships for raw material purchase and technical assistance. In Brazil, all of the 75 companies with plantations or dependent on plantation wood had agreements and were expanding the share of outgrower raw material. Companies were interested in a wide range of options, the main constraint being the limited legal tools available for structuring different agreements. The lack of recognition of informal logging in much of the Amazon has made it difficult to legally engage in sustainable arrangements (Vidal 2005).

Donors and governments have tried to promote associations of smallholders to improve the delivery of technical services, build economies of scale in program and subsidy support, and foster related local development. In contrast, private companies find it easier to negotiate with individual outgrowers than with communities because of the latter's complex social dynamics. Yet studies of existing schemes with outgrowers indicate that these smallholder producers participate best when they have adequate capacity and bargaining power, or when companies set up targeted

supply centres for high-quality nursery stock and technical assistance (Mayers and Vermeulen 2002). While still a limited subset, formal relationships between companies and CFEs are likely to expand in scale given greater attention to social dynamics and equity.

### Non-wood forest products

NWFPs probably make up the largest share of the forest products' market in volume, variety, aggregate income generated and trade value. Official statistics are very misleading, however, as few product sales reach national or international accounting. For example, the Forest Resource Assessment compiled by FAO for 2005 presents an aggregate value for Mexican NWFPs which is no more than the local market value of the annual use of palm thatch in the Yucatan peninsula, ignoring fibres, mushrooms, resin, ornamental palms and other products. In India, the collection and utilization of NWFPs account for about 2 million person-years of employment annually, and nearly 400 million people living in and around forests depend on NWFPs for sustenance and supplemental income. According to one estimate, 18 million women engage in commercial fuel wood head-loading in India, most of them illegally (Khare et al. 2000). NWFPs provide as much as 50% of income to about 30% of the rural population in India, with 38% of forest-related exports employing 18 million people (FAO 2005a; Lebedys 2004).

Forest dependence is even greater in Africa (Scherr et al. 2004). Two-thirds of Africa's 600 million people rely directly or indirectly on forests for their livelihoods, including food security. Forest-related activities account for 10% of GDP in at least 19 African countries, and more than 10% of national trade in ten others (CIFOR 2005). Data sets are very poor. An analysis of Tanzanian official figures on charcoal, for example, suggest that between the years 1995 to 2002 the forest sector contributed on average only 3.3% to national GDP. However, recent estimates that include the current value of the illegal use of forest products such as logs and charcoal indicate that the forest sector's annual contribution to national GDP is probably in the range of 10–15%. In 2002, the charcoal industry alone is estimated to have utilized 21.2 million m<sup>3</sup> of wood, equivalent to 624,500 hectares of woodland, providing 43.7 million bags of charcoal to 6.8 million mostly urban consumers. The annual net value of this charcoal trade was US\$4.8 million (Scurrah-Ehrhart and Blomley 2006).

#### *Box 1: Bamboo in China*

China has 4.6 million hectares of bamboo, both natural and planted forests, concentrated in Fujian, Hunan, Jiangxi and Zhejiang in addition to 3 M ha of mixed, mountain stands (Lobovikov 2003). In contrast to the timber sector which is constrained by the log-harvesting quota, the logging ban, high rates of taxation, tenure insecurity, and transport restrictions, the bamboo sector is growing quickly.

In Anji County in Zhejiang Province, the growth of the bamboo sector has been dramatic. In the mid 1970s, 96% of the bamboo was shipped elsewhere through a state cooperative monopoly. Local entrepreneurs produced the other 4%, generating US\$670,000 and employing 460 workers. By 1998, the country was importing bamboo for 1,182 processing enterprises, employing 18,914 employees and grossing US\$105 million. During this period, the number of bamboo farmers only increased from 111,000 to 123,000. Ninety percent of bamboo processing is done by small and medium-scale rural enterprises, supplied almost exclusively from collectively-owned forests.

*Source: West and Aldridge 2006*

The market potential of NWFPs varies widely, depending on the type of product and its niche. The portion of the pharmaceutical industry that uses forest products is valued at US\$37 billion (Laird and ten Kate 2002). Estimates of the direct international trade in NWFPs include US\$7 billion (Scherr et al. 2002) and \$19 billion (FAO 2005), with domestic trade and consumption many orders of magnitude higher. NWFP markets and livelihood opportunities are dynamic. Some communities have greatly increased revenues by finding more lucrative market access or by shifting production to more promising products (eg medicinal plant-gathering in Nepal, honey collection in Gambia, Mexican mushroom cultivation, brazil nut collection in Brazil and Bolivia, and wood carving in India, Mexico, Zimbabwe and Uganda).

Many of the CFEs surveyed for this report include the production of NWFPs as one of several strategies within the forest enterprise. The intensity of operations is modified along with demand and availability. Some

communities have developed complex and varied agroforestry systems, such as the bamboo, rattan and rubber production systems that have proved popular among smallholders and villages facing regulatory and legal barriers to the management of natural hardwood species (Peluso 2003). Bamboo is a major source of smallholder income in Malaysia, Indonesia and China from both bamboo plantations and, to a smaller extent, natural bamboo forests (Ruiz-Perez 2004).

The real returns from NWFPs are poorly quantified, even in recent, more careful global estimates, because of the poor collection of statistical data from the informal sector, the extensive and elastic subsistence use of these products, and the fact that many products are not visible in GDP calculations even as exports. One cooking herb popular in West African cooking generates US\$220 million of trade in Europe and the United States and earns Ghana, the country of origin, US\$20 million in export revenue. Rattan has a global trade value of more than \$5 billion, but the trade in bamboo, which is substituting for wood as well as developing its own markets, is worth more than double the official value for rattan (FAO 2005b; see Box 1). There are 4.6 million hectares of pure and plantation bamboo forests in China.

Employment estimates in the NWFP sectors are extremely complicated because of the multiple income streams of most collectors and traders of NWFPs and because of the large, undocumented domestic collection and trade (Lewis et al. 2004). The carving industry in Jodhpur, India, generates at least US\$200 million annually in revenue and employs 85,000 people (Chatterjee et al. 2005). In Bali, Indonesia, 24,000 carvers work in 6,000 enterprises, generating US\$100 million in export revenue (Campbell et al. 2005). Kenya employs 60,000 full-time carvers with export sales value of over US\$20 million (Choge et al. 2005).

*Box 2: Beekeeping in Africa as a significant NWFP enterprise*

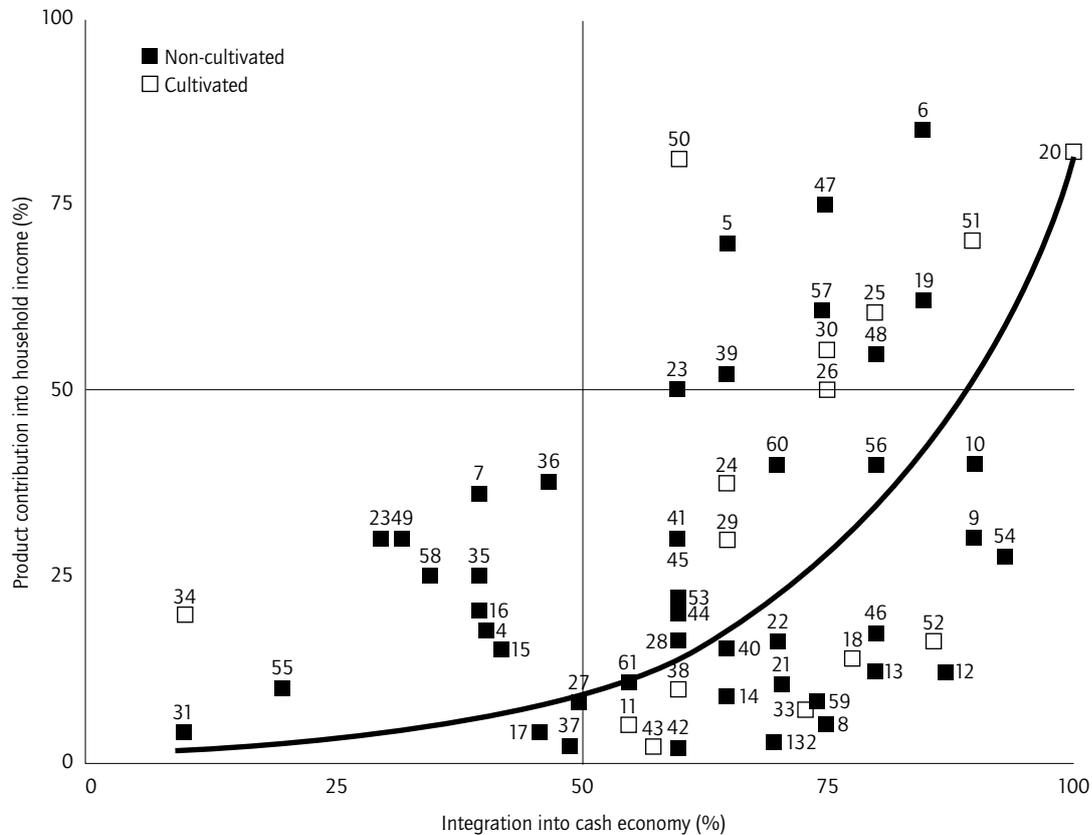
The case of Gambia highlights the importance of NWFPs as a basis of community-based natural resource management income streams. Through appropriate interventions, attempts have been made to improve the production and value of honey in a number of countries in Africa. In Kenya, Zambia and Tanzania, adaptive hive technology was introduced to replace destructive and less efficient traditional hives made of bark. The promotion of wooden box hives with removable slats in southern Africa, in a way that respected indigenous knowledge, ownership and decision-making, has fostered major income gains. Programs in Malawi, Zambia, Zimbabwe and Mozambique have increased yields from 6 to 40 kg per hectare per year. One Malawi club increased honey sales fivefold in five years and, in the Bondolfi area of Zimbabwe, 71% of the region's households derive an income 20 times the national standard.

*Source: Nel and Illgner 2004*

A large study by Kusters et al. (2004) assessed the role of NWFPs in 62 case studies across Asia, Latin America and Africa. Looking at these studies in aggregate, the most obvious conclusion is that there is a limited subset of high-value, commercial NWFPs, relative to the thousands collected and sold by rural people (Figure 4). Another finding not explicitly shown in Figure 4 is that NWFPs are more sustainable at high levels of extraction when they can be cultivated or managed intensively.

Important NWFP production in successional forests such as the rubber-durian systems in Borneo supplements income from perennial crops in upland or tropical agricultural systems (Peluso 2003). For these and some traditional natural forest products, local knowledge has generated sound and practical criteria for the ecological management of off-takes, such as for exudants or açai fruits in the Amazon Basin (Shanley 2005).

Figure 4: Relationship between household integration in the cash economy and NWFP contribution to total household income



Note: Numbered points correspond to individual case studies. A secondary classification based on whether or not a product is actively cultivated yielded more detail

Source: Ruiz-Perez 2004; Belcher et al. 2005; Kusters et al. 2004

While many options and alternatives exist for the commercial extraction of NWFPs, Belcher et al. (2005) argue that it is not a straightforward proposition for improving the livelihoods of the rural poor. Successful commercialization occurs in tandem with other social and economic activities. For example, recent studies in Mexico and Bolivia (Marshall et al. 2006) have documented that more secure tenure is correlated with improvements in the management of NWFPs, that commercialization of the NWFP does not restrict its accessibility to the poor in the wild, that women are seldom the only ones involved in NWFP markets but take more responsibility for processing and cultivating, and that most markets are informal because of the lack of legal treatment of NWFP collection and commercialization.

### Emerging markets for ecosystem services

Recent studies indicate that markets and payment schemes for forest ecosystem services are emerging in many parts of the world. At the global level, these activities are nascent and still limited in scope and scale: "Most of the activity to test such schemes to date has been in developed countries where biophysical science tends to be stronger and legal frameworks and institutions exist that permit the development of more sophisticated markets" (Scherr et al. 2004). Instruments that rely on formal contracts and contract enforcement require a well-functioning legal system and mechanisms to assess and address liability in cases of non-performance. For example, communities

entering watershed service and carbon markets in Guatemala found that investors were only interested when they could offer three times the area which ideally should have been able to provide the level of services expected through the investment (Scherr et al. 2004). Few governments have solid legal or regulatory frameworks, an exception being the government of New South Wales, Australia.

The many different types of market and payment schemes can be organized into four categories: (1) public payments to private forest owners to maintain or enhance ecosystem services; (2) open trading under a regulatory cap or floor; (3) self-organized private deals; and (4) the eco-labelling of forest or farm products – an indirect form of payment for ecosystem services. There are numerous examples of each type of market in both developing and developed countries. Landell-Mills and Porras (2002) identified more than 200 examples of payments for ecosystem services, many under voluntary schemes. For instance, in the state of Paraná in Brazil, municipalities that take action either on their own or in cooperation with private landowners to protect watersheds are rewarded with the proceeds of an ecological tax that has been enacted to finance such activities (Rosa et al. 2003).

Watershed protection services – such as flow regulation, water quality, water supply and habitat protection – are well recognized and are indeed a primary motivation for establishing many national parks in forest areas. Some 30% of the world's largest cities depend on forest areas for their water (Scherr et al. 2004). In most cases, markets for watershed services are limited to situations in which the downstream beneficiaries (such as hydroelectric power generators, irrigators, municipal water systems and industry) are directly and significantly impacted by upstream land-use.

Although limited in number, payment schemes exist that offer sufficient incentives to maintain forest cover and make a significant contribution to local incomes. Landholders in critical watershed areas in Costa Rica are paid between US\$30 and US\$50 per hectare of land per year for their protection services. In Mexico, similar levels of payment are also planned (Khare 2005). Annual government payments for ecosystem protection in the US range from US\$25 to US\$125 per hectare (Rosa et al. 2003). The development of markets and payments for ecosystem services in an equitable manner that is inclusive of potential community participation will depend on a number of enabling conditions. Currently, deals are heavily skewed towards developed economies, strong governance systems and providers who can supply services at a large scale and at controlled levels of risk. Information flows to communities are quite poor in most countries and regions, and markets for services such as water flow and quality or protection of biodiversity, where tenure rights are clear, have tended to develop more favourably for communities than have carbon markets (but see Box 3 for an example of the role carbon sequestration and carbon dioxide offsets can play in small communities).

Interest from corporate investors and consumers in socially and environmentally positive products and production processes is beginning to redefine where investment is directed. The creation of new markets for sustainably produced products and ecosystem services provides potential branding opportunities for SME and CFE products for their social and cultural values. Examples of this include the finished furniture products produced by the Cooperative of Honduran Forest Producers of the Atlantic Coast (COATLAHL) for the European market, bottled water produced by S.C. Ixtepeji in Mexico, organic certified brazil nuts (with and without aflatoxins) in Manicoré, Brazil, and low-impact, community-produced timber in the Mamirauá reserve.

*Box 3: Biodiesel from Pongamia pinnata and carbon credits in rural India*

Chalbaradi is a village of twelve families, four hours' walk from the nearest road in the Adilabad district of Andhra Pradesh, India. In April 2001, the village obtained a 7.5 kVA generator fuelled by biodiesel produced by the village. The citizens of Chalbaradi collect the seeds of *Pongamia pinnata*, which is found in the nearby forests. The seeds are then pressed into oil and used directly in the diesel generators. Using 5–6 litres of pongamia oil, Chalbaradi can generate 10–12 kW of electricity for 3–4 hours each evening to light each home. In March of 2003, Chalbaradi sold 900 tons of CO<sub>2</sub> emission-reduction credits from the project to a European carbon trading firm, 500ppm. The Chalbaradi community received Rs200,000 for the sale of the credits, part of which it re-invested in new *Pongamia* saplings. Modelling themselves after Chalbaradi's success, four neighbouring villages recently planted 100,000 *Pongamia* trees around agricultural fields with the aim of producing *Pongamia* oilseeds.

Also in Adilabad, the village of Powerguda planted 4,500 *Pongamia* trees in 2002 along the edges of their agricultural fields to produce oilseeds. The villagers collect and process the seeds, producing

enough *Pongamia* oil to power their generator and to sell to local transport companies as fuel for diesel buses. In October 2003, the group sold 147 tonnes of CO<sub>2</sub> emissions credits to the World Bank for US\$645, investing the money in a *Pongamia* nursery and purchasing 10,000 additional saplings.

In 2002, a report by Community Forestry International concluded that the heavily forest-dependent communities in Adilabad District would be good candidates for CDM investments in reforestation and afforestation projects. The degraded teak and dry deciduous forest species in the region regenerate vigorously with relatively low-intensity silviculture; above-ground carbon sequestration rates for degraded teak sites are 5–7 metric tonnes of carbon per hectare per year. The report and these successful pilot projects suggest that CDM projects could provide a long-term source of funding for rural Indian communities interested in forest restoration, with potential for credits from both CO<sub>2</sub> emissions-reductions and carbon sequestration projects.

Sources: D'Silva et al. 2004; Poffenberger 2002

## 3 Overview of the studies

### Selection of case studies

The case studies were selected to reflect the size of the forest resource in the different ITTO producer country regions (Asia and the Pacific, Africa, and Latin America and the Caribbean), the extent of experience with successful CFEs in each region, the range of forest products and services marketed by the enterprises (timber, NWFPs and ecosystem services), and the potential for CFE growth and expansion. Case-study authors were asked to select enterprises that had been in operation for 3–20+ years; the limited time of operation of most enterprises is related to the recentness in many of ITTO producer countries of tenure recognition and transfers of forest management responsibility. The sample was biased towards successful enterprises, given the limited number of countries and regions with a history of enabling environments for the emergence of CFEs. The survey methodology is described in Annex I and the case studies summarized in Table 1.

Heaviest weight was given to the experience of Latin America (ten cases in six countries), given the size of the forest estate in that continent and the longer history of community tenure recognition there. Asia and the Pacific was given next preference (six cases in five countries), again for the size of the region, the relative maturity of CFEs and the range of products and services involved. African case studies (four in three countries) presented more recent experience of policy reform and enterprise emergence, with fewer cases of vertical integration. Following the methodology of Scherr et al. 2004, case studies included products and services from all commercial market segments and special niches—commodity wood for domestic consumption, high-value wood, certified wood, processed wood products, NWFPs, payments for ecosystem services, and mixed enterprises producing for two or three types of markets. More mature and vertically integrated CFEs tended toward diversification to mixed enterprises, resource permitting, to maximize employment in the community and to diversify the segments of the population (eg women, youth) employed.

### Origin and maturity of the CFEs studied

More than the type of product or market into which CFEs were commercializing their products, the review found that the age of the enterprise and its relative maturity determined many of its characteristics and its participation in the marketplace. The case studies fall into three overall categories in terms of their relative maturity and experience. Mexico, Honduras and Guatemala provide examples of relatively advanced enterprises that have had a number of years of operation as a CFE and that have made strategic choices to adapt the original enterprise structure and its role in the community to changing perceptions of opportunities and in response to lessons learned. Nepal has had a tradition of community forest management for decades and a legal framework recognizing the management rights and tenure of forest user communities since the early 1970s. It is only in the past decade, however, that commercial rights to extractive timber activities have been granted, and only in the past 5–6 years that NWFP enterprises such as the Bel fruit enterprise (see Box 8) have emerged.

The Philippines has also recognized rights to ancestral domains of Indigenous groups for several decades but only recently provided the legal approval for formal logging by CFEs. Legislative changes in Amazonian countries have recognized and demarcated substantial areas of forest lands and territories under Indigenous domain and opened up the possibility that producer groups and communities can obtain concessions for forest harvesting. However, regulatory procedures for the legal approval of management and extraction in the region are quite recent and CFEs are mostly limited to experiments with extractive and Indigenous reserves in Acre state in Brazil and some buffer areas of key protected areas in the Spanish-speaking Amazon. In Africa, the process of tenure recognition and the transfer of management responsibilities to villages and ethnic peoples have also been recent. Extractive and management authority in west, central and southern Africa is still limited compared to the rights of communities in Latin America and parts of Asia and the Pacific. The case studies in Africa

demonstrate great potential, and governments are prepared to grant rights to a substantial number of villages or very large aggregate areas. As with joint forest management committees in India, African village, community or co-managed forest managers are querying whether they only manage forests on behalf of the government or if they are the legal right holders and what their decision-making authority might be. Community enterprises in Africa are established with limits on the areas that can be under their management, are subject to slow bureaucratic processes of transfer, have uncertain access to state forests which they have used traditionally, and sometimes must follow very strictly pre-determined enterprise governance models not well aligned with their own systems of social governance.

### Organizational types

CFEs include both indigenous and traditional communities and cooperatives with heterogeneous members (Table 4). Some CFEs are constituted as an association of communities or collective groups, and some are independent enterprises associated with other CFEs for collective activities around marketing, the provision of technical services, forest monitoring and the processing of end-products. Some base their business organization on traditional structures and value systems, while others have created independent management structures that are only loosely related to local governance systems. The Mexican case studies are unusual in that communities and *ejidos* were left to develop their own organizational structures as long as they produced a legal forest management plan. Some of these, like the Sociedad Sur, have privatized responsibilities for logging to smaller groups of producers, who become very familiar with the stands they manage and are more committed to overall forest protection.

The Guatemalan communities include long-term residents of the lowland Petén as well as communities of settlers who have adapted to diverse membership and very different family characteristics. Bolivian and Brazilian groups have organized in response to legal frameworks created by the community concession or extractive reserve models and by the recognition of indigenous territories (AGROFORT—see Box 5, Mamirauá—see Box 17). Groups in these countries have also organized to reap the benefits of joint

commercialization (Manicoré—see Box 4). Bolivia is interesting in that ASLs were originally created under the farmer group concession model of CFEs established as an option in the Bolivian forest law of 1996. When the larger Indigenous community, of which the ASL was a part, received recognition of their Indigenous land rights to what is legally an Indigenous territory of origin, the ASL was given new legal status as an Indigenous forest enterprise under the Indigenous territory's jurisdiction.

There are a number of examples of second-tier associations or federations that either emerged as part of the internal organizational process of the productive groups or communities or that were promoted or even mandated by support agencies or non-governmental organizations (NGOs). In the case of the Gambia, two federations have emerged (the Timber and Fuelwood Federation in the Western River Division and Forest Kambeng Kafo in the Central River Division), formed by a constituency of interest groups to channel collective power and strengths with the aim of improving alliances with wholesalers and millers and increasing the efficiency of the enterprise. In this case, the use of a strong enterprise and market planning tool enabled a learning process which led these interest groups to associate with each other and to influence the market chain.

In Guatemala, the Association of Forest Communities of the Petén (ACOFOP), of which Árbol Verde and Carmelita (the subjects of two case studies) are members, was instrumental in the struggle for concession rights for forest communities, working on collective bargaining, capacity building, market support, fundraising and organizational development. As part of the phase-out strategy of a USAID-funded project, a cooperative structure, the Forest Community Company of Forest Services (FORESCOM), was formed for grouping production and expanding secondary transformation of sawnwood originating from eleven CFE concessions. FORESCOM was formally established in 2003 and, since then, has successfully established a market outlet for three lesser-known species (LKS), negotiated lucrative prices for certified mahogany, and obtained finance from the Guatemalan government to establish a processing plant for secondary wood processing to meet more lucrative, certified wood export markets.

*Box 4: Processing for profit: sustainable extraction of brazil nuts*

In 2001, the Brazilian Institute of Education on Sustainable Enterprises, an NGO, was invited by timber company Gethal Amazonas to assess the potential for an income-generating project with surrounding communities as part of its social commitments under FSC certification. What began as a certification prerequisite evolved into a thriving community-based business linking hundreds of families across Amazon forests and rivers.

Around 40,000 people live in the municipality of Manicoré under various tenure arrangements including extractive reserves, leased lands, agrarian settlements and public lands. Gethal Amazonas issued access rights to their forestlands for communities to harvest brazil nuts. In collaboration with the Federal University of Amazonas, the project developed a process to reduce levels of aflatoxin, a fungus that grows under high humidity, in the nuts. The process allows communities to reduce aflatoxin levels and, as a result, their brazil nuts are also organic certified. In less than five years, the number of families participating in the enterprise grew from 7 to 625

spread through 27 communities. Brazil nuts now come from various lands outside Gethal Amazonas, totaling an area of 388,197 hectares. Communities formed associations which in turn joined sub-regional councils under CAAM, the Council of the Agroextractive Associations of Manicoré. All production is taken to CAAM's headquarters to be sold under one label. Equipped with better production and business management skills, higher volumes and better-quality nuts, producers have been able to bypass local middlemen and get their product outside the state for more than five times the local selling price.

While still struggling and somewhat dependent on the support of partner organizations, CAAM is emerging as a strong enterprise force. This year (2006), they will form a cooperative to obtain credit and issue fiscal receipts. The project has created social, environmental and economic benefits, bringing additional income and offering a sustainable alternative to resource exploitation, and stronger social organization.

*Source: Martin 2006*

In Mexico, Sociedad Sur is a union of regional community *ejidos*. Manicoré, Brazil has a Council of Extractivist Associations of Manicoré (CAAM) composed of three sub-regional councils (which in turn are composed of 27 associations) and one separate association that represents three communities.

The forest enterprises in the case studies from Nepal, Cameroon, Gambia and the Philippines operate according to structures that are dictated by national policies and forest legislation and, to varying degrees, have been adapted to local reality and experience. Donors or guiding NGOs have played a strong role in some cases in encouraging the association of a

group of villages or forest management groups or in dictating optimal participation by different classes, castes, genders or age groups (eg Ngola-Achip in Cameroon—see Box 15). In Cameroon, a series of workshops coordinated by a local NGO resulted in a unanimous agreement by nine village communities that forming a local cooperative would best meet their needs for community forest management. In 2001, the nine communities formed the Tri-National Cooperative Agroforestry Association (CAFT) as an agroforestry cooperative that would qualify to acquire community forest according to federal laws, and by January 2004 the communities legally acquired nine community forests in Ngoyla.

Table 4: Organizational types for case-study CFEs

Country	Case study	Year of formation	Legal/governance arrangement	Business model
Mexico	Santa Catarina Ixtepeji	1985, independence from union in 1993 and communal statute from 1994	Indigenous <i>ejido</i> (communal forest land reform block), formerly part of Union of <i>ejidos</i> ; traditional authorities	Enterprise governed by <i>ejido</i> authorities who appoint managers. Rotation of CFE managers leads to lag time but also creates sensitivity to work challenges
Mexico	Sociedad Sur	1986	Union of <i>ejidos</i> , but individual <i>ejidos</i> divided into smaller producer sets	<i>Ejido</i> authorities with independent workgroups by land parcels; strong role of community assembly in decisions
Mexico	El Balcón	1985	Community forest (land reform block) under non-indigenous <i>ejido</i> structure	Had partnership with international timber processor, but no longer; had hired international manager but replaced with community member
Guatemala	Carmelita	Originated in 1996; formally established in 1998	Cooperative with government-recognized forest concession; member of ACOFOP	First-tier CFE with a local manager and processing facilities for primary wood transformation; member of FORESCOM producer group with processing facilities for secondary wood transformation
Guatemala	Arbol Verde	Originated in 1992; formally established in 1998	Civil-society association with government-recognized forest concession; member of ACOFOP	First-tier CFE with a local manager and processing facilities for primary wood transformation; member of FORESCOM with processing facilities for secondary wood transformation.
Honduras	COATLAHL	1977	Cooperative with sub-producer groups given usufruct rights by government	Cooperative structure of groups legitimated by each involved municipality
Colombia	San Nicolás	1998: corporation created; 2001: program identified around payments for ecosystem services	The Corporation for Forest Sustainable Management (MASBOSQUES), a public-private partnership involving municipalities and 17,000 small farmers in 23 groups in a watershed catchment	Corporation of government, local farmers and associations and private sector, co-investors with managers and shareholders in hydroelectric valley
Brazil	Manicoré	2001	Community/village association under umbrella of CAAM. Harvesting in extractive reserves; timber company owns land and grants community access. Leased and community-recognized land in process of legalization	CAAM buys from individual brazil nut producers, limited partnership with Gethal Amazonas timber company in the past – key for enterprise start-up
Brazil	Mamirauá	2000	Community associations under umbrella of biosphere reserve coordination with parcelled forest areas	Individual community workgroups as subset of community advised by technical NGO in reserve
Bolivia	AGROFORT	2000	Group of producers within the area of an Indigenous territory; initial association with appropriate permissions from Indigenous authority, later transition to an Indigenous forest management group with appropriate management rights	Cooperative structure under Bolivian law of ASLs; later cooperative organized as an Indigenous forest management organization
Cameroon	Ngola-Achip	1992/1998	4 villages, families of Balogbo, Pa'a and Bamouh of Ngola-Achip with rights to <5,000 hectares of forest	Committee of four villages make decisions on forest management; allocation of funds and contracts with commercial harvesters; cooperative structure
Cameroon	CAFT	Created in 2001; in 2004, nine CAFT communities receive nine community forests	Cooperative development association composed of representatives of each of the nine village communities that constitute CAFT	Incipient. Each community with a community forest linked to CAFT by contract – communities produce raw materials, CAFT handles collection, processing and marketing

Table 4: Organizational types for case-study CFEs (continued)

Country	Case study	Year of formation	Legal/governance arrangement	Business model
Gambia	Bulanjor Village	1992	This is one of many villages managing community forests. In this case, smallholders within a village have organized for forest harvesting and processing	Cooperative groups assigned village forests through government community forestry model
Tanzania	Amani Butterly Group, Tanga Region	2003	Smallholders in villages around reserve area	Cooperative management structure with NGO support
Nepal	Chaubas-Bhumlu Sawmill	1996	Consortium of four forest user groups (a total of 293 households) with start-up financing and technical assistance from donor project	Sawmill management committee (four each from four forest user groups, one manager and four forest-user-group chairpersons/elected officers). Project continued to provide technical assistance until the end of 2005
Nepal	Tamakoshi Bel Juice Processing Company	2003	Ten forest user groups, 60 identified poor households from ten groups separately and six private entrepreneurs registered as companies. Technical backstopping from a development NGO for two years	Pro-poor company with community shareholders and private investors. Forest user groups buy shares, with NGOs supporting poorer households in their purchases. Private-sector shareholders as well, who also provide specialized marketing services
China	Pingshang Bamboo Group, Guizhou Province	2004	Collective enterprise in village forests	Management committee; one government representative
India	Andhra Pradesh	2001	Village forest protection committees and women's self-help groups are the main instruments of CFEs	Women's groups federated at village, district and state levels; district-level federations often arrange investment funds for enterprises. Groups maintain mandatory savings accounts, leverage savings to obtain more credit
Philippines	Ngan Panansalan Pagsabangan Forest, Compostela, Compostela Valley	1996	Former commercial timber concession area given as community forest management unit to Mansaka-Mandaya tribe of 1051 households; Cooperative (NPPFRDC) created to comply with government laws	Harvesting and mill run by professionals (mostly former employees of the logging company that operated concession previously), policies by the Cooperative's General Assembly and Board of Directors with Mandaya-Mansaka tribal group representation
Papua New Guinea	Madang	1996	Indigenous/clan groups and village-based landowner's association with NGO support; households work individually but market through enterprise	Association and business advisors from NGO run enterprise with members of community and business advisors as shareholders

*Box 5: The case of AGROFORT: government regulation and Indigenous forestry associations in Bolivia*

In the 1990s, the Bolivian government enacted comprehensive policy reform which privatized state enterprises, decentralized regulation to local government entities, and introduced new land policy and environmental laws. In a series of laws and amendments, local grassroots organizations received legal recognition and a constitutional amendment recognized Indigenous land ownership. Most importantly, the 1996 forest law granted domestic user rights over renewable natural resources to all farmers or communities that hold forests as individual or collective property. The law grants commercial exploitation rights as long as it is done in compliance with regulations on sustainable forest management, and allows the formation of ASLs whereby local people (including former illegal timber traders) can legally obtain access to forest concessions for managed, sustainable extraction.

In 1997, a group of three friends involved in timber extraction in the Tumupasa region of Bolivia decided to organize themselves and other local workers and neighbours as an ASL in order to gain forest concessions for legal timber extraction under the new forest law. They formed the Agroforestry Association of Tumupasa (AGROFORT), which today is one of the most successful and well-functioning Indigenous forest management associations in Bolivia. AGROFORT accounts for 7% of all legally extracted timber sold in the province.

From the very beginning AGROFORT members were beset with legal, regulatory and logistical obstacles. AGROFORT members waited for three years after applying for ASL status, only to be informed that they could not receive ASL

concessions because their forests were located in an officially designated Indigenous territory and Indigenous groups have exclusive user rights in such areas. Most of the AGROFORT members are of Tacana origin, so AGROFORT began consulting with the Indigenous organization that holds legal claim to the lands and was eventually assigned a forest management area as an Indigenous group. Finally, by 2002, AGROFORT was able to begin operations with an approved forest management plan.

Along with these regulatory obstacles, AGROFORT has struggled with infrastructure and supply-chain limitations. Unable to obtain the capital necessary to purchase equipment for independent extraction and processing, AGROFORT had to contract other companies to extract felled timber and a nearby sawmill to process the logs. Both relationships were troubled by lack of appropriate equipment and skills and contract breaches, resulting in delayed timber extraction and waste. In the past two years, re-organization of management structures within AGROFORT and the formation of a better relationship with a new timber extraction company has brightened the future for the enterprise. The group's leadership is an outstanding example of self-regulation and initiative in innovating new designs for group management and business structure. Through their self-initiated reforms, AGROFORT's timber extraction has more than doubled in the past two years, soaring from 2,366 m<sup>3</sup> in 2002 to 5,628 m<sup>3</sup> in 2004. Timber extraction and sales are expected to increase further as new relationships deepen and the enterprise continues to learn from past experience.

*Source: Benneker 2006.*

### **Internal constraints**

A number of internal constraints related to the community or collective enterprise structure were documented in the case studies (Table 5). These include internal social conflicts, the mismanagement of resources and income by individuals, a lack of organizational and business skills, and an unwillingness to adapt practices to market demands. The more sophisticated and mature enterprises have grown

beyond some of these but have encountered others arising from their greater sophistication and new opportunities. CFEs face tensions over assigning employment opportunities, the degree to which activities will be targeted to marginal or poorer members of the society, management decisions related to low knowledge and skill levels, limited negotiating power vis-à-vis outside government, donor or NGO advisers, the capture of benefits by elites, the loss of professional knowledge in CFEs

*Box 6: Effective stakeholder participation and sustainable forest management in San Nicolás, Colombia*

The San Nicolás valleys are the main watersheds for two hydropower dams, which together generate more than 30% of Colombia's electricity. The management and natural resources of the region are administrated by the Autonomous Regional Corporation of Rio Negro-Nare (CORNARE). CORNARE began the San Nicolás project in 1998 to comply with new regulations to encourage forest conservation. The main goals were to create a participatory forest management plan and to create an institution to facilitate the implementation of the plan and the trade of products and services in the covered ecosystems, including carbon sequestration.

The project faced daunting challenges, including the lack of an economic valuation of the forests, competition for land from cattle ranching, farming and illegal drug cultivation, and the general instability of rural communities threatened by violent conflict in the region. In response, the project partners created a strong institutional structure for the program, including a regional forum that facilitated more than 170 meetings with the community, industry partners and municipalities. Together, the community partners created a 25-year forest management plan that includes provisions for plantations, agroforestry and silviculture systems, conservation and restoration activities, and activities eligible for the CDM. The project also created the corporation

MASBOSQUES, a public-private partnership to implement the management plan and facilitate the commercialization of products and services. MASBOSQUES was established in September 2003. The corporation is directed by a General Assembly with representation from all 23 member groups. The MASBOSQUES portfolio includes activities in technical and social areas along with promoting and facilitating the trade of timber products and NWFPs in national and international markets. Benefits from the project and its activities include improved conservation and biodiversity, reforestation, implementation of forest management practices, soil protection, the restoration of watersheds, and improved supply of timber and forest products. Additional social returns include empowerment of local communities, creation of public-private partnerships, capacity-building for local community members, higher average local incomes, and improved food security. The success of the San Nicolás valleys' project is partly due to the efficient mobilization of resources and participation from a wide range of national and international actors, facilitated by the high-value and high-profile nature of the area. Multilateral participation, an effective institutional structure and frequent communication were also keys to the project's success.

*Source: Robledo and Tobón 2006*

that rotate leadership positions to increase community involvement in the enterprise, and limited knowledge of marketing opportunities or strategies.

In the case of Sociedad Sur in Mexico, government forest management plan requirements contradict the internal work group arrangements designed to reduce conflicts, since 'scientific' rotations would exclude parcels for many years that work groups rely on for regular income. Conflicts have arisen in Cameroon because the governance structure options established in law can run counter to local institutional dynamics or be co-opted by elites. By law, communities can organize as cooperatives, associations, common interest groups (CIGs) or businesses, each of which has different status vis-à-vis taxes or capitalization.

Government officials have discouraged the more popular CIGs, which involve the community as a whole, because they perceive these as informal and confusing; on the other hand, the association or cooperative model can lead to elite capture (elders register a small set of friends as the association) or complexity (cooperatives require complex procedures or documentation). The cooperative organization in Ngola-Achip was promoted by an NGO advisor and currently faces challenges from elite villagers.

Some case-study CFEs are members of larger associations for marketing or group processing. In Guatemala, eleven out of a total of 16 first-tier CFEs (twelve community concessions and four cooperatives or municipal *ejidos*) have joined

Table 5: Internal constraints to CFE success

Country	Case Study	Internal constraints
Mexico	Santa Catarina Ixtepeji	Rotation of CFE managers causes time lag but also creates sensitivity
Mexico	Sociedad Sur (SPFEQR)	<i>Ejido</i> conflicts led to work group subdividing second-tier organization; lack of financing for planning and technical assistance
Mexico	El Balcón	Unemployment in rainy season; need to diversify employment and gender
Guatemala	Carmelita	Limited technical and managerial capacities; blend between social organization and enterprise; changes in board of directors led to discontinued development processes; employment effect limited to a relatively small number of members
Guatemala	Arbol Verde	Limited technical and managerial capacities; blend between social organization and enterprise; unclear investment policy; changes in board of directors; limited employment among members
Honduras	COATLAHL	Competition from illegal logging; limited training opportunities
Colombia	San Nicolás	Expansion of armed conflict with influx of outsiders into the catchment; risk of continued commitment of public corporation; could be an issue in lower-priority watersheds without infrastructure
Brazil	Manicoré	Internal differences regarding future direction of association and whether to become a cooperative or not. Internal political rivalries and strong dependence on leadership (both internal and from timber company)
Brazil	Mamirauá	High illiteracy; lack of trained managers; flood patterns not guaranteed annually to transport logs downstream
Bolivia	AGROFORT	Lack of skills and organization; limited access to capital and negotiating power
Cameroon	Ngola-Achip	Lack of knowledge of rights and options; conflicts over the division of profits; steep learning curve in organization; elite urban capture and control
Gambia	Bulanjor village	Low skills' level, poor planning; economies of scale require collaboration between villages
Tanzania	Amani Butterfly Group, Tanga region	Training of new members; increasing farm productivity for raising pupae; dependent on NGO for technical assistance, funds and guidance
Nepal	Chaubas-Bhumlu Sawmill	Developing sense of ownership; involving poorer members; government versus insurgents; quality and quantity scale
Nepal	Tamakoshi Bel Juice Processing Company	Lack of skills and business capacity; complex company structure is hard to make participatory; raised expectations create risk of over-reaching market
China	Pingshang Bamboo Group, Guizhou Province	Limited labour force to expand operations; distance from market
India	Andhra Pradesh	Poor information on markets, since biofuels is a new sector; absence of linkages between private industry and CFEs
Philippines	Ngan Panansalan Pagsabangan Forest	Dependence on community-based timber enterprise for livelihood makes community vulnerable to government rules/certification requirements; process distorts community process of growth
Papua New Guinea	Madang	Poor negotiating skills with buyers; limited investment capital for sawmilling; lack of capacity; large distance to export markets

the cooperative group of producers known as FORESCOM. This new regional structure for secondary wood processing, group marketing and enterprise investment could develop into an interesting business model for addressing scale and capacity but can also become a source of conflict. The potential lies in a clear division of labour between CFEs engaged in primary wood processing and the commercialization of precious woods (mahogany, tropical cedar) and second-tier associations and cooperatives in charge of the secondary transformation of precious woods, primary and secondary processing of LKS, and the commercialization of the derived

products. Actual and potential conflicts lie in the competition between CFEs and second-tier cooperatives, in particular in terms of employment generation and benefit sharing; these conflicts result in a lack of planning security for FORESCOM, when first-tier CFEs are reluctant to commit certain volumes of wood for processing and marketing by FORESCOM (Stoian and Rodas 2006a, 2006b).

In remote forest areas where community concession arrangements are more recent, such as AGROFORT in Bolivia, the Madang Forest Resource Owners Association (MFROA) in Papua New Guinea, and producer groups sawing timber in most states of the

Table 6: Case studies by region and market segment

Market segment	Africa	Asia and the Pacific	Latin America
Commodity timber	Central River District, Gambia CAFT, Cameroon	Chaubas-Bhumlu Sawmill, Nepal NPPFRDC, Philippines	El Balcón, Mexico* Ixtepeji, Mexico* Carmelita, Guatemala AGROFORT, Bolivia* Mamirauá, Brazil
High-value, appearance-grade timber, furniture	Ngola-Achip, Cameroon	Madang, PNG*	Arbol Verde, Guatemala* Carmelita, Guatemala Sociedad Sur, Mexico
NWFPs	Central River District, Gambia Amani Butterfly Group, Tanzania CAFT, Cameroon	Adilabad, India Tamakoshi, Nepal Pingshang Group, China	Manicoré, Brazil Arbol Verde, Guatemala Carmelita, Guatemala Ixtepeji, Mexico
Ecosystem services		Adilabad, India	San Nicolás, Colombia

\* processing industry included in enterprise activities

# processing capacity planned

Brazilian Amazon, CFEs are constrained by the lack of basic commercial services such as transporters to carry sawn wood, businesses selling parts or servicing equipment, and intermediaries able to broker with exporters. This puts considerable strain on these CFEs at start-up as they bear the additional costs and to take responsibility for a wider range of roles than they are technically prepared to handle. Once operations reach scale and as more CFEs emerge in these regions, these business services are likely to become available in response to increased demand. Initially, CFEs can be highly dependent on donors or NGOs to initially provide some of these services on a pilot project basis. Or, as in the case of AGROFORT, they may be forced to find their own solutions to the lack of services.

In frontier areas where forests are rich, significant short-term incentives may be needed to change traditional short-term perspectives on economic returns. In frontier Amazon forests, settlers will sign timber contracts for short-term cash, even recognizing the loss of long-term NWFP income. In Papua New Guinea, NGO advisors have struggled to find sufficiently high market prices for sawmillers, such as the MFROA, to encourage incipient enterprise members to look beyond lucrative short-term logging contracts. Unless there is a minimum short-term return, it is impossible to foment a long-term enterprise (van Helden and Schneeman 2000).

### Economy of the CFE: participation of CFEs in the various market segments

*Timber and wood markets.* Fourteen of the 20 case studies produce timber or processed wood. Seven produce timber and wood products exclusively as their commercial activity and two are actively planning to diversify. Table 6 summarizes the economics of these 14 enterprises by region and market segment. There is wide variation in the kinds of market segments accessible to the CFEs. The highly integrated CFEs in Mexico and Guatemala have access to high-value appearance-grade timber markets, to commodity markets for construction-grade timber, and graded markets for pine. CFEs in the more remote tropical areas—Papua New Guinea (PNG), Brazil, and Bolivia—can only make logging financially viable if they process high-value timber. Fuelwood is an important part of some CFEs as a by-product of graded lumber, as a parallel enterprise, or, in some cases, as an enterprise in its own right.

*NWFP examples.* Ten case-study CFEs produce NWFPs commercially, some in addition to their timber operations. These include mushroom collection and dried mushroom cultivation in Mexico, water bottling in Mexico, palm shoots, honey, cacao and fruits in Gambia and Cameroon, ornamental palms in Guatemala, botanical and medicinal plants and fibres in Mexico and Guatemala, and ecosystem service credits and carbon credits in Colombia. Those that

*Box 7: Amani butterflies, Tanzania*

The Amani Butterfly Enterprise (ABE), located in the East Usambara Mountains in highland forests, is one of the few cases of participatory forest management in Tanzania. ABE has been breeding and exporting dry butterfly specimens and butterfly pupae to live butterfly exhibits in the UK, Europe and North America since December 2003. It also conducts conservation, social-development and training activities among local communities. In 2005, the company earned US\$45,000 in sales, up from US\$20,000 in 2004, and has a potential annual income as high as US\$100,000, partly due to the large market and limited competition. Proceeds from sales are divided as follows: 7% goes to a community development fund, 28% is used for ABE management salaries and running costs, and 65% is paid back to farmers, giving them an average 15% increase in household income.

ABE is an exemplary CFE because it simultaneously addresses, in a sustainable way, several local issues: promotion of forest conservation, particularly in biodiversity 'hotspots'; gender conflicts; under-employment; communal development; the desire of farmers to produce as individuals rather than in a group; and the need for more successful models

of CFEs in Africa. The enterprise manages all stages of production and sales, receiving administrative, training, technological and start-up assistance from a national NGO called the Tanzania Forest Conservation Group (TFCG) and outside donors; it has the support of local authorities.

The impact of the enterprise on the natural environment is minimal and occurs mainly when farming is first initiated. After the first six months, farmers breed their own butterflies and spend far less time in nearby forests. By providing viable alternative sources of income, the enterprise has reduced reliance on illegal timber extraction and chameleon poaching. Simultaneously to ABE farming activities and administrative processes, environmental education and awareness-raising is conducted among tourists, ABE staff and local schools and villagers.

In order to expand this enterprise and the number of villages benefited and forest lands conserved, ABE requires financial and technical support primarily for the start-up stages of the expansion. With limited support, ABE has developed greatly and has the potential to continue growing.

*Source: Scurrah-Ehrhart and Blomley 2006*

produce commercial NWFPs exclusively are in Nepal, with bel juice and bel juice extract as a health food, India, with managed forests and reforestation plantations of *Pongamia* oilseed trees for energy generation and soaps, China, with bamboo for culms and chopstick manufacture, Brazil, with organic brazil nut production in Manicoré, and Tanzania, with butterfly farming.

In Nepal, ten forest user groups have collectively established a bel fruit juice extraction operation in partnership with private investors from the community and are commercializing the anti-oxidant fruit juice in the Katmandu market for high returns. In the Gambia, some groups produce only honey. In Brazil and other parts of the Amazon, a growing number of settler associations have been granted extractive reserve concessions that enable them to more effectively manage NWFPs in areas of high biodiversity and

to improve incomes and biodiversity. The brazil-nut extraction operation in Manicoré, Brazil, is a perfect example. Some of these same extractive reserves are now producing timber as an additional product but making this mixed system economically sustainable so distant from markets remains challenging and there are few successful examples. Mamirauá and some Cameroonian associations are considering diversification to NWFPs. In China, chopstick manufacturing has proved an attractive enterprise for a Miao village in a specialty niche with high demand, and one with less competition than in the larger, industrial bamboo sector. All of these products have good market potential and are relatively high value, particularly when processed (dry mushrooms, juice). Some, like mushroom and palms, require connections with exporters who buy from collection points and ensure refrigerated transport to market.

*Box 8: Bel fruit juice in Nepal*

In parts of Nepal, community members and members of forest user groups are collaborating in an enterprise venture to make and sell juice from the fruits of the bel tree. The enterprise involves all members in all stages of juice production, from the harvest and collection of the fruit, to juice production, bottling and labeling. The enterprise is supported by a special forest user group fund but also by substantial private investment. In 2005, total production was 24,451 bottles of juice, with an expected profit of NRs632,739.

The Tamakoshi Bel Juice Processing Company is a company of ten forest user groups managing 714 hectares of forested lands and employing 142 people, including 62 women. The project is rejuvenating degraded forests and creating a successful market for NWFPs. The bel fruit is readily available from the forests managed by the forest user groups, and the juice is in high market demand. The emphasis on NWFPs has also encouraged the protection from timber extraction activities of species with non-wood value; the regeneration of fruit-tree species like the bel tree was three times higher in 2004 than it was in 2000.

Continuing prospects for the Tamakoshi Bel juice Processing Company are quite good. Demand for the juice is increasing in the area and its reputation is growing; consumption of Coca-Cola in local communities is being replaced by bel juice. There are also good market prospects for other types of fruit juice, which the enterprise is investigating for future trials and possible expansion.

*Source: Paudel 2006*

*Box 9: Medicinal plants in Himachal Pradesh, India*

The Pangi Valley is a remote, high-altitude area in the Chamba district in northwest Himachal Pradesh. Most of the residents in the region subsist on single-season cash cropping, animal herding, road-building and, most recently, the collection and sale of medicinal plants and herbs from the region's forests.

More than 86% of residents surveyed in the Pangi Valley collect some herbs from the forest during the collecting season of mid-June to mid-October. In most villages, income from medicinal herbs is 10–20% of total cash income per household. Generally, those who engage in the most medicinal herb collection are individuals with fewer opportunities for income, less available land for cultivation, and fewer local labour opportunities.

Since the collection of medicinal plants for sale did not begin until the 1970s, medicinal herb extraction for sale is not specified in forest settlement agreements. The Forestry Department requires a seasonal permit (Rs. 1) to extract medicinal plants for sale, but enforcement is selective and none of the 58 collectors interviewed had an extraction permit. Permits are also required for the transport and export of forest medicinal products.

This case contrasts with the situation in far-western Nepal, also in the Himalayas, where multi-donor support for a market and technical network organization and Nepali forest user groups led to better markets for essential oils and medicinals, investment in an NWFP paper-processing enterprise, and better resource extraction and management.

*Sources: Agarwal and Prasanna 2005; Subedi 2002*

## Economy and profitability

Table 7 provides data on the production, sales, employment and profitability of the case-study CFEs. Some of the more mature enterprises have reached a high level of vertical integration and diversification. The most advanced communities in Mexico and Honduras produce export-quality sawn timber of multiple grades, finished products for ornamental or construction finishing, furniture, and fine crafts. They have also branched into the commercialization of NWFPs at scale, targeting urban markets, and begun ecotourism enterprises and formal or voluntary agreements based on the provision of ecosystem services, the least developed of their market segments. A number of the case studies document important issues related to attempts to balance multiple goals and objectives without losing control of the enterprise or the marketplace.

Some communities diversify for the same reasons as private-sector companies—to take advantage of additional market opportunities and increase returns from a given capital and resource base, including human capital, to expand into a related niche, or to invest profits. Other communities channel capital into lower-risk, less capital-intensive operations to create employment for other segments of the community, such as women and youth; it may also be more compatible with conservation goals and can capitalize on an integrated resource management strategy to reach fair-trade or organic certified markets or to secure payments for the ecosystem services they provide. In rural areas with high out-migration, diversification is also an attempt to create jobs for migrating youth and to attract the next generation into the enterprise.

Certainly there are high levels of inefficiency in many of the CFE case studies related to a lack of infrastructure and small scale of production, limited quality control which, in turn, limits the ability to sell higher on the value chain or to supply buyers sensitive to the timing and regularity of supply. Maximizing profitability and employment has been a challenge for CFEs, particularly when other factors are at play (maximizing social returns from the enterprise, keeping cultural ownership of the enterprise by limiting roles of outsiders as managers or advisors, or ensuring that benefits do not lead to wide disparities in household income). The older enterprises have lived through various decision-making challenges that are somewhat site- and circumstance-specific. A parallel study of

markets for CFE timber has found that CFEs face serious competition from imported plantation wood, even in niches where they have a natural competitive advantage from their natural stocks. This problem, while not unsolvable, requires commitment, organization and a conscious strategy for addressing it.

Some enterprises—such as El Balcón and Sociedad Sur in Mexico—generate revenues in excess of US\$2 million per annum with profits of 30% or more. Arbol Verde and Carmelita, the Guatemalan case studies, are two of 22 members of ACOFOP, a political support association instrumental in fighting for community concessions in the 1990s. They have benefited from associated status as part of ACOFOP and from membership in FORESCOM. The Rain-forest Alliance is supporting FORESCOM by linking it to potential buyers of certified wood. In 2005, the communities received orders for more than 1.5 million board feet of certified wood, worth \$3 million, including milled lumber, floorboards, decking and various construction components (McNab and Fajardo 2005).

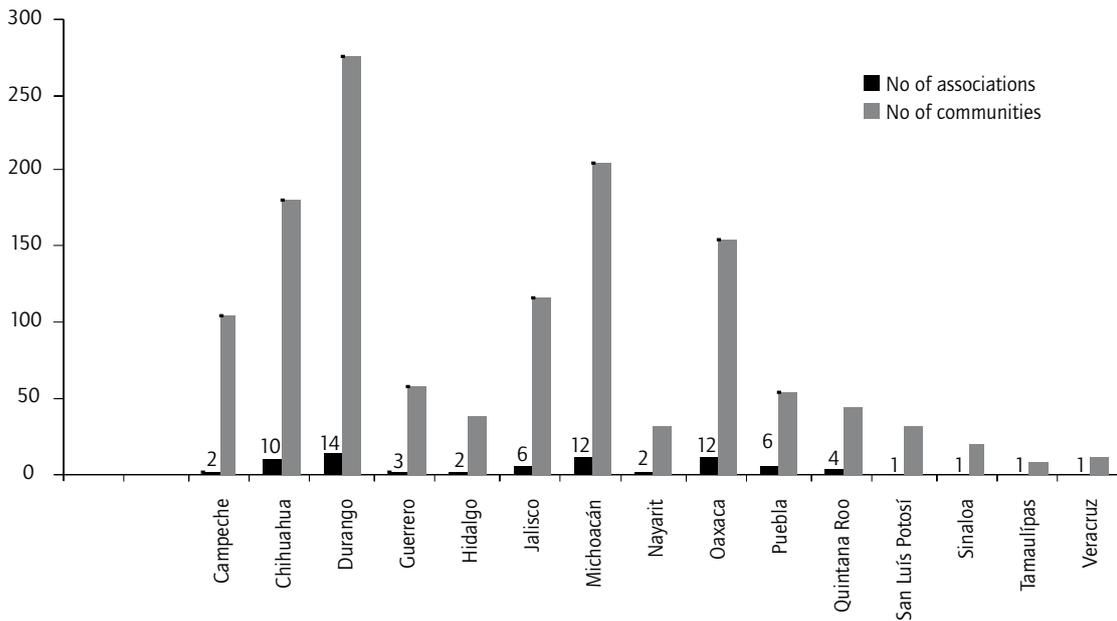
Many CFEs emerged in Mexico (see Figure 5) in response to policy reforms made in the 1980s which returned harvesting rights to communities. While the initial response of a transfer of lumbering operations from industry to communities was a decline in overall timber production, the new enterprises regained productivity relatively quickly, despite pursuing more conservative cutting regimes. In fact, some operations surpassed previous production levels, as data from the state of Oaxaca demonstrate (Figure 6). Production is in some cases community-specific, while in some geographic regions there has been a tendency for several communities to associate to gain working capital and economies of scale. In Guatemala, CFE members of FORESCOM are ambivalent about collective marketing and continue to sell wood and non-wood products in parallel and to invest in their own milling capacity to keep their options open. Varied forest size and quality and varied levels of social cohesion complicate multi-CFE collaboration. In Mexico, CFEs located south of Sociedad Sur in the Quintana Roo lowlands had an arrangement like that of FORESCOM in the 1990s but split up because of the varying capacities of individual CFEs. Mexican experience has been mixed in forming second-tier associations. Where these thrive, CFEs can reduce certification and technical service costs and increase group capital and group market share.

Table 7: Economics of case-study CFEs

Country	Case Study	Forest Area	Products	Volume of production	Sales	Employment	Profitability
Mexico	Santa Catarina Ixtepeji	21,058 ha, of which 80% is under forest use	Timber, tourism, bottled water, mushrooms, trout farming	Total production: 12,825 m <sup>3</sup> pine; 5,057 m <sup>3</sup> oak; 7,717 m <sup>3</sup> processed; 77% sawnwood; 2% roundwood; 20% secondary roundwood	1,581 ha conserved for watershed protection; registered in national forest fund program with US\$47,400 for 5 years	120 permanent jobs; 180 seasonal jobs	Profits hampered by tax system; taxed on timber they own already unless enterprise separates from community governance and 'buys' its timber as recorded expense
Mexico	Sociedad Sur	271,104 ha	Timber, eco-tourism, artisan groups	Total production: 28,923 m <sup>3</sup>	US\$2 million; fluctuating returns on mahogany and limited market for LKS	1,918 <i>ejidatarios</i> involved	Variable among the workgroups; shared profits limit ability of full enterprise to invest in new equipment
Mexico	El Balcón	15,000 ha, of which 11,000 ha logged	Timber, sawn wood, mescal/cactus	Total production: 24,000 m <sup>3</sup>	US\$3.6 million	120 permanent and 180 seasonal jobs	23% profit (17% reinvested in firm)
Guatemala	Carmelita	53,798 ha concession with 20,000 ha timber production (since 2003); 33,798 ha NWFP production	Timber, sawn wood, NWFP ornamental palm ( <i>Chamaedorea</i> ), allspice, chicle; starting ecotourism in El Mirador	Annual production: 800–1,500 m <sup>3</sup> on 300–500 ha	2001–04: sawmilling with rented equipment Since 2004: own processing plant Certified mahogany sold at US\$1,781/m <sup>3</sup> in 2006, LKS sold in domestic or Mexican markets	Employs 50–60 people in timber (seasonal), 60–80 in NWFPs (seasonal), 25 in sawmilling (primary species mahogany, tropical cedar)	Certified mahogany sales, LKS sales in Mexican and national markets – growing international demand for LKS; NWFP good complementary income
Guatemala	Árbol Verde	64,973 ha concession with 33,079 ha production forest	Timber, sawnwood, and tourism	Annual production: 800–1,500 m <sup>3</sup> on 1,000–1,500 ha	Certified mahogany sold at US\$1,760 m <sup>3</sup> in 2006, LKS sold in domestic and Mexican markets	Employs 30 people in timber (seasonal), 5–10 in sawmilling (precious woods and LKS), 19 in administration, forest management, guards, tourism	Certified mahogany sales, LKS sales increasing with growing international demand, NWFP good complementary income
Honduras	COATLAHL	10,000 ha, of which 5,100 ha are productive forest	Timber, sawnwood, furniture	5,000 m <sup>3</sup> (1975) 700–1,000 m <sup>3</sup> (2004)	US\$48,000 from sale of finished goods; paid US\$30,000 to member groups for logs	6 permanent employees in the sawmill	8% sawnwood and 21% finished products
Colombia	San Nicolás	40,000 ha of conservation and 32,000 ha of multiple-use forest	Agroforestry, perennial cropping, plantations, fruit orchards and mixed cropping, carbon, watershed protection	Projected carbon production: 750,000 tonnes at the end of the 40-year period, with drops in year 21 when harvesting of timber intensifies	N/A	Individual smallholder families and farmer cooperatives employed more full-time	depends on cropping system, whether profitable
Brazil	Manicoré	388,197 ha divided into 18 harvesting areas	Organic certified brazil nuts with shells and shelled; sold in bulk (plans to shrink-wrap)	2004–05 production: 128,418 kg	The association pays at least R10 upfront. Association then finds buyers and pays extra sale price to producer. Average price: R\$7.77/can (12.5 kg)	773 community members participate as producers (no paid positions in the association)	2005 harvest: producers earned at least R\$49,675. Volatile seasonal market. Families earned US\$475 on average from brazil nut sales

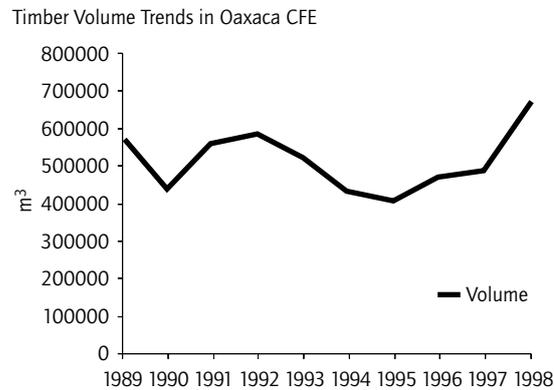
Brazil	Mamirauá	260,000 ha divided into 4,200 ha lots	Timber, with hopes to expand to sawnwood, NWFPs	2004 production: 905 m <sup>3</sup> 2003 production: 8,507 m <sup>3</sup> (logs)	2000-04: R\$68,768	No new jobs but more security and legality of activities	Divided between participants
Bolivia	AGROFORT	7,707 ha	Timber, thinking of diversifying to palm oil and wild cacao	6546 m <sup>3</sup> over 2 years allotted; only 68% extracted	16 cooperative members received US\$ 186 per month for 6 months of the year	16 members employed year-round	US\$4,400 in 2004 US\$9,500 in 2003 US\$5,700 in 2002 US\$1,000 in 2001
Cameroon	Ngola-Achip	4,200 ha	Roundwood, thinking of diversifying to NWFPs as well	Unknown; community sub-contracts logging to private operators	US\$0.80 per m <sup>3</sup>	72 mill employees; unknown number of harvesting employees	Unknown; costs are born by contractors, not the community
Gambia	26 villages in Western, Lower and Central River divisions 26,000 families	3,309 ha	Mixed products (11); honey and body cream (>50%); timber, fuel; rhuu palm products	Honey 2004: 121 litres honey, 18 jars body cream; Timber: 30 truckloads in Central River District Fuelwood: 10 truckloads in Central River District	Bulanjor group honey: US\$ 155 Timber: US\$31,323 Fuelwood: US\$5,020	72 groups in 26 communities (average size: 22 members) Bulanjor 15 people; Jamorai: Timber and Fuelwood Federation 2004 (JATIFF)	Bulanjor: 15%; Central River District timber profit: US\$24,000 Central River District fuel profit: 41,502 JATIFF: 65% profit
Tanzania	Amani Butterfly Group, Tanga Region	8,380 ha	Butterflies (larval stage)	27 butterfly species to 16 buyers in 2005; 250-300 pupae every 2-3 weeks per supplier	US\$20,000 in 2004 (13 buyers), US\$44,968 in 2005 (16 buyers); On average US\$ 1.50-1.75 per pupae (depending on species)	350 members (butterfly farmers)	Average annual income per farmer: US\$90; Potential for US\$67/month for individual farmers during periods of high production
Nepal	Chaubas-Bhumlu Sawmill, Kavre Dist.	297 ha	Timber, planks	10,000 cu ft round timber; 5000 cu ft sawn timber	US\$12,000 on average per annum generated	293 families in FUGs 6,000 person days/year	50% return but small cut volume
Nepal	Bel Juice, Tamakoshi enterprise	714 ha	Bel juice bottled for local consumption	24,451 bottles of juice	US\$8,800 in net returns; sales of \$ 20,000	142 people out of 1200 families in 10 forest user groups	40% (\$0.35 per bottle)
India	Adilabad District, Andhra Pradesh	At least 1 million Pongamia trees planted on degraded land	Oilseed converted into biodiesel; carbon credits	Over 2,800 tonnes of CO <sub>2</sub> , oilcake for fertilizer, lighting in 6 villages	Carbon sales worth US\$ 14,000 in verified emissions reductions from 35 villages	4-5 persons per village	36% return on plantation; gains in employment and income; 25% increase in cotton yield from use of oilcake
Philippines	Ngan Panansalan Pagsabangan	14,800 ha	Timber, sawnwood	8,609 m <sup>3</sup> sold in 7 years to 2004; another 5,000 m <sup>3</sup> per year at capacity + plantations	US\$125,000 remitted in forest charges; hardwood values US\$350+ per m <sup>3</sup>	90% of employed are members, 10% are non-members; shifts of 21 workers x 2 shifts/day	2004: US\$12,300 2003: loss 2002: US\$7,500 2000: US\$36,641
PNG	Madang	10,000 ha of natural forest	Timber, ecotourism, eaglewood	Potential for production is more than 10,000 m <sup>3</sup> per year but less than 1,000 m <sup>3</sup> milled per year	US\$30,150 in last year's timber sales	20 members of MIFROA currently; 25 total with surveys, 170 interested in whole association	Shared, therefore difficult to determine

Figure 5: Emergence of Mexican community enterprises and associations since the 1985 reforms, by state.



Source: Wilshusen 2006

Figure 6: Timber volume trends in Oaxaca, Mexico



Source: Antinori and Bray 2005

The Mexican experience also yields interesting comparative data on profitability and vertical integration. The profitability of the enterprise is not always linked to processing sophistication and finishing. Roundwood-producing CFEs in temperate and tropical forests can generate a higher percentage of profits than vertically integrated CFEs in Mexico, but limited employment (Antinori and Bray 2005; see Annex III for a field survey of experiences in Mexico). Some case-study CFEs are on the margin of profitability and barely break even after paying the costs of inputs and labour. The profitability of COATLAHL, for example, has fluctuated greatly over

the cooperative's 30-year history, depending on the enabling environment created by government, its own internal business decisions on purchasing arrangements with member work groups, and marketing and milling strategies.

Generally, milling fewer board feet with a targeted market has proved more competitive in a tropical hardwood operation than producing large amounts of sawnwood for undifferentiated buyers. This is related to the stiff competition from cheap, illegally logged wood in the domestic marketplace and to the common problem faced by a number of enterprises in the tropical forests—that the market for LKS is limited. In Brazil, 70% of the wood produced is from one species (*Hura crepitans*) because of market preferences. Producers in Quintana Roo and Cameroon face similar issues. Diversification is a preferred strategy for a number of enterprises, to both create more employment and reduce risk, at the very least until markets for a wider range of timber species are available. The Bolivian, Cameroonian, Guatemalan, Mexican and PNG case studies all seek greater diversification, in part because investments in non-timber activities tend to be less capital-demanding and financing sources continue to be limited. Very few of the case studies present data on the depreciation of equipment and machinery, but this is a common problem in Mexico, as enterprises fail to account for depreciation and struggle for cash flow when a

key vehicle or piece of machinery falls apart. One achievement of the government-sponsored technical assistance project in Mexico, PROCYMAF, has been to attract agricultural credit lenders to communities to lend money for new transport or harvesting equipment.

Market analyses conducted with the support of NGOs and external donors working with government forest departments have identified important opportunities for CFEs in Nepal and the Gambia. In the latter, FAO assisted a wide set of communities with forest management rights to analyze their current consumption and commercialization strategies and develop better or new markets for forest products. The result was a diverse set of income opportunities in the region (Lecup and Nicholson 2000, 2004; FAO 2005a; see Box 10). Timber, which was the product that many CFEs initially planned to exploit, was found to be less lucrative than other products, such as honey, in specific cases. In one community in the Central River District, plans to sell fuelwood were abandoned in favour of a mill for sawnwood, supported by German donor and technical assistance, when a participatory analysis indicated a three-fold return compared to fuelwood because of the greater scarcity of local supplies of sawnwood in nearby markets. Table 8 shows the range of communities in the area of analysis and Table 9 shows the activities of and returns from the emergent enterprises. Rhum palm and kembo posts had a strong indirect economic impact on the communities, as these substituted for over-harvested alternatives that were no longer available in sufficient supply for local building needs (Thoma and Camara 2005).

Mamirauá's Sustainable Development Institute (MISD), the regional corporation in Colombia, MASBOSQUES, the TFCG in Tanzania, the regional development program in Andhra Pradesh, and the Everest Development Gateway Corporation working with the Nepal Tamakoshi enterprise have all provided important enterprise and market analysis support to the enterprises. For the carbon credit and water payment scheme examples, a support organization provided technical assistance for measuring and monitoring the ecosystem services created.

Many of the CFEs have benefited from outside technical and financial support from government and NGOs, and from donor-assisted funding. Where this support has been directive, however, it has limited the emergence or growth of the CFEs. The community

concessions in Petén, Guatemala are an interesting example of this. Because of the high conservation value of the lowland forests, a large number of donors, government and NGO programs operated in the Petén before and during the emergence of the community concessions. Community organization was not effective, however, until an internal process of mobilization and consolidation took place within the communities. Those models of support that emerged as instrumental were from those NGOs who had been the most flexible in providing guidance and services, and built their assistance in recognition of the local knowledge of both settlers and long-term residents of the resource base and its productive options (Sundberg 1998). The concessions themselves also drew upon the rich experience of Mexico, looking at the diversity of organizational types in the *ejidos* to the north and paying attention to the lessons and pitfalls in their development (Pacheco et al. 2004; Rosa et al. 2003).

The case of Petén, Guatemala is quite interesting because of the role of the second-tier community advocacy association, ACOFOP, which emerged as a leading force and support mechanism in the political struggle to create the concession rights. ACOFOP has not only provided political and organizational support but also a community-based mechanism for backstopping services. For example, the USAID-funded government program BIOFOR worked with agricultural credit banks to create lines of microfinance for individual community concessions, with technical assistance and guarantees from ACOFOP (Spantigati and Springfors 2005; Chemonics International 2003). The microfinance model was so favourable that the share of forest concession lending made up 50% of the total portfolio of one of the two institutions, Bancafé, in 2003 and 2004 (Spantigati and Springfors 2005). This contrasts with cases like Mamirauá, where the NGO providing technical assistance in the Mamirauá Biosphere Reserve, MISD, developed a very comprehensive forest management support program, and the Amani Butterfly enterprise in the Eastern Usambaras, Tanzania which emerged with support from the donor-funded Tanzania Forest Conservation Group and has still to become financially and organizationally independent.

The potential for CFEs in India is quite significant when the membership of women in self-help groups, the area of managed plantation and restored forest areas, and the number of village forest management

*Box 10: Market analysis and development in community forests of the Gambia*

Today, 43% of the surface area of the Gambia, about 460,000 hectares, is forested. In the early 1990s, the Gambian Forestry Department recognized that central control was not working to prevent rampant deforestation. Shifting away from a top-down approach to forest management, the government created a policy to encourage participatory forest management and the formation of joint forest management programs. Today there are 264 community forest committees (CFCs) in the Gambia, controlling 22,100 hectares of the nation's forested lands, and another 24 joint forest management initiatives proposed which would involve an additional 240 communities.

Twenty-two of Gambia's CFCs are developing their markets and managing their forests using the Market Analysis and Development methodology through a joint project of the Gambian government and FAO. The Market Analysis and Development (MA&D) program is a three-phase program that trains and empowers community members to identify and develop successful forest enterprises and to manage them independently. MA&D enables communities to link forest management and conservation activities directly to income-generating opportunities and, in the Gambian case, it has also encouraged the substantial diversification of marketable forest products. The program emphasizes sustainable institutional development for the community enterprises and extensive networking between businesses and local organizations. In the Gambia, 22 CFCs have used MA&D methodology to develop 72 community enterprises.

Some of the communities now involved in successful enterprises have been entitled to commercialize community forest products since

1992 but prior to the MA&D training were hesitant to do anything other than protect their forests or were repeatedly cheated by middle-men or Forestry Department staff. The communities produce eleven products from their forests, including fuelwood, logs and timber, honey, palm handicrafts, netto fruits, oil-palm fruits and nursery seedlings. Fuelwood and timber are among the most promising products for successful enterprises, but so is honey, and none of the community enterprises solely produce fuelwood or timber. All community enterprises in the MA&D model produce at least one commercial NWFP along with their timber production and a number of them also produce rope, fibres, fruits, tubers and herbs for domestic consumption. Through program-sponsored artisan workshops, community members have learned skills to make new products from their forests, especially beds, sofas and chairs, that are then sold to local ecotourism lodges and hotels in the coastal tourism area.

Gambian CFEs are making use of forest species that are valuable for more than just their timber. For example, the rhun palm has largely disappeared from Gambian forests because of over-exploitation for its valuable trunk timber. But the rhun palm is also valuable for its durable and termite-resistant stem used in many construction projects; its leaves are used for thatching, fencing and wickerwork and its edible nuts and palm hearts are an important part of rural diets. For the 18 beekeeping and honey-producing enterprises, beekeeping is expected to account for 15% of their total yearly profits. In a short period, the Central River District region has become the producer of 20% of the total honey supply in Gambia.

*Source: Thoma and Camara 2005*

groups are taken into account. Andhra Pradesh, the state in which the Adilabad tribal district is located, is a leader in forming and developing women's self-help groups, hosting half of the nation's total. These groups take on roles in their communities as contractors, natural resource managers and primary sources of capital. In 2003, 500,000 women's self-help groups in India represented 5 million members and controlled

assets worth Rs11,195 million or US\$238 million (D'Silva et al. 2004). If these funds are properly leveraged with local financial institutions, self-help groups could have access to lines of credit worth US\$1 billion. In addition, 6,271 Indian forest protection committees protect 1.5 million hectares of forest assets worth an estimated \$US5 billion in timber and non-timber values (D'Silva 2006).

Table 8: History of enterprise creation in Gambia

Village	Date community forest management agreement awarded	Selected products for enterprise development	No of independent groups	No of members in independent groups	Date enterprise development plan established
Kafuta	Feb 2000	Fuelwood, logs/timber	2	10	Sep. 2002
Tumani Tenda	Feb 2000	Ecotourism, honey, netto	3	13	Nov. 2002
Buram, Bulanjorr, Kanuma	Jan/Feb 2000	Fuelwood, logs/timber, honey, palm oil	11	132	Oct/Nov. 2002
Jakoi Sibirik, Nyangit, Tampoto, Batelling	Dec 1999	Fuelwood, logs/timber, honey, palm oil, forest walks	11	57	Oct. 2002
Batending, Kandonk, Somita, Ndemban	Dec 1999	Fuelwood, logs/timber	4	72	Oct 2002
Brefet	Dec 1992	Ecotourism, honey	2	10	Sep 2002
Bessi, Brefet Ndemban,	Dec 1992	Fuelwood, logs/timber	2	18	Oct 2002
Jassobo	Mar 2000	Logs/timber, honey	2	15	Jul 2004
Nema, Bambako	Nov 2002	Honey, tree nursery	2	10	Jun 2004
Manduar	Mar 2003	Fuelwood, honey, kembo posts	3	12	Jul 2004
Bureng	Dec 2001	Honey, Handicrafts, rhun palm splits	3	26	Jun 2004
Korup	Aug 2002	Fuelwood, logs/timber, honey, handicrafts, Rhun palm splits	5	18	Jul 2004
Dobo, Boraba	Apr 2000	Fuelwood, logs/timber, honey, handicrafts, rhun palm splits	9	37	Summer 2004
Kunting, Bustaan	Apr 2000	Logs/timber, honey, handicrafts, rhun palm splits	8	24	Summer 2004
Tabanani, Dobo	Apr-Jul 2000	Fuelwood, logs/timber, honey, handicrafts, rhun palm splits	10	35	Summer 2004

\*Note: This table shows the enterprises where logs and timber are a significant product. Other villages were much more reliant on NWFPs for their enterprise

Source: Thoma and Camara 2005

Table 9: Production, sales, expenses and profit, Gambia's Central River District, 2005

Product	Unit	Quantity	Gross income [US\$ equiv]	Production & marketing [US\$ equiv]	Taxes, fees, & royalties [US\$ equiv]	Net profit [US\$ equiv]
Logs/timber	Truckload	30	31,271	3,154	4,691	23,427
Firewood	Truckload	10	5,007	2,744	801	1,461
Honey	Litres	1,180	2,176	273	324	1,579
Handicrafts	Piece	154	1,243	558	232	453
Palm splits	Piece	1,990	3,692	1,076	623	1,993

Note The Central River Division is the most economically significant of the country's three geographic divisions for logs and timber

Source: Thoma and Camara 2005

## Social and environmental benefits of CFEs

All the CFEs studied invest in important social infrastructure and create environmental and social benefits for their members and neighbouring communities (Table 10). In some instances it is difficult to separate the economic returns and profitability of the enterprise from the social benefit stream, since one of the social benefits valued by CFE members is employment generation. Profits from the CFE can be reinvested in the existing enterprise, used to purchase social goods separate from enterprise activities, or invested in new economic enterprises that generate additional employment. There is also a set of intangible social benefits that is extremely important to community development.

Direct benefits include: investment in schools, school buildings, scholarship funds, health and pension funds, emergency services, micro-credit funds, employment through new activities, training and specific skills'

building, access to subsistence products from the forest as a result of better management, and investment in road infrastructure. Indirect (or intangible) social benefits include the improved self-esteem of CFE members, improved credit ratings for families seeking loans outside the community, social capital formation in the community, political prestige and leverage in the local and provincial government structures and access to loans and donor support.

Environmental benefits include reduced clearing at the agricultural frontier and less deforestation, access to better water supplies, reduction in the risk of damage from disasters, improved biodiversity and forest resource integrity, and, in Nepal at least, agricultural productivity increases as a result of improved natural pest control from regenerated forest. In some cases, detailed evaluations of environmental impacts have been carried out as part of donor-funded programs or preparation exercises. In Guatemala, studies have demonstrated that the CFEs in the region invested more than \$150,000 of their own funds in

### *Box 11: Chopstick production by the PingShang Bamboo Group*

Prior to the formation of the PingShang Bamboo Group (PBG), most chopstick production in Guizhou Province was conducted by single family units linked to single, wholesale buyers. The community had a rudimentary system that produced only basic unfinished chopsticks, irregularly collected and transported to wholesale buyers regardless of market prices. In July 2004, the community formed the PBG to enable local community members to analyze production possibilities and make more informed decisions about production, market demand and the sale of their products. As an enterprise composed of more than 70 local families, PBG is the largest coordinated producer of chopsticks in Chishui County.

PBG began producing packaged chopsticks ready for use by consumers, instead of the unfinished bulk product they once produced. The producers' group is involved in all aspects of the production chain including forest management, harvesting, production, packaging, marketing and delivery. The long-standing PingShang village committee, an entity separate from PBG, manages the bamboo

stands and access to forest products, while PBG group manages production, marketing and sales. It works with managers from the nature reserve to increase the qualitative and quantitative understanding of bamboo resources, including sustainability, regeneration, culm quality and soil conditions.

There is tremendous regional, national and global demand for chopsticks and although PBG is the largest producer of chopsticks in the region, it contributes less than one percent of China's production of packaged, table-ready chopsticks. Given the great market demand, there is room for considerable expansion of PBG chopstick production.

Since the establishment of PBG, finished chopsticks sell for roughly 18 US cents more per pair. Greater volumes of chopsticks produced by PBG and higher prices for finished chopsticks are directly responsible for increased average annual household income, which means reduced poverty and improved food security, school attendance and women's health.

*Source: West and Aldridge 2006*

Table 10: Social and environmental benefits

Country	Case Study	Social benefits	Environmental benefits	Spin-offs/ issues
Mexico	Santa Catarina Ixtepeji	Pensions, social infrastructure, scholarships	High conservation value forest (HCVF) conserved, areas set aside; agricultural frontier checked; fire control institutionalized	Access to markets that value certified wood; access to environmental services markets
Mexico	Sociedad Sur	Political clout, vehicles available for personal use, capture development grants, roads, social infrastructure, pensions	HCVF conserved, areas set aside; agricultural frontier checked; fire control institutionalized	Project model copied in countries such as Ecuador and Guatemala
Mexico	El Balcón	Pensions, social infrastructure, scholarships; 82% of 2005 profit reinvested in forest and enterprise, 18% in social goods	HCVF conserved, areas set aside; agricultural frontier checked; fire control institutionalized	Have cancelled contractual relationships with US buyer (Westwood) for delays in payments; community member trained as professional manager of CFE
Guatemala	Carmelita	Social capital, employment, self-esteem, networking, tenure security, social infrastructure, political capital alone and with ACOFOP	HCVF better conserved relative to other protected areas, own set-asides; agricultural frontier checked; fire control institutionalized	Diversification of activities to generate greater income from xate, chicle, black pepper and spices; exploring ecotourism options; association with FORESCOM for marketing certified LKS
Guatemala	Árbol Verde	Social capital, employment, self-esteem, tenure security, diversification of income streams, social infrastructure	HCVF better conserved relative to other protected areas, own set-asides; agricultural frontier checked; fire control institutionalized	Hotel and restaurant initiative, community carpentry, association with FORESCOM for marketing of certified LKS
Honduras	COATLAHL	Organizational maturity of producer groups with spin-off effects on other activities and initiatives; political voice; greater tenure security	HCVF conserved, areas set aside; agricultural frontier checked; fire control institutionalized	COATLAHL produces finished products; buys only part of AMI (see Box 14) production; export market in certified Europe niche
Colombia	San Nicolás	Empowerment of local communities; creation of public-private partnerships; improvement of local capacities, family income and food security	Productive potential of land and soil in the region restored; water flow and quality in hydropower and water generation watershed protected; tradable carbon credits created; land practice knowledge improved	Diversification of tradable credits is part of the program; emergence of associations and new structures for civil society, private and public interaction; creating new sources of employment and income generation
Brazil	Mamirauá	Creation of a social fund to cover costs of medical service, but most benefits are at the level of individuals	Illegal logging virtually eliminated in the area	Communities block timber extraction by external actors
Brazil	Manicoré	Inter-/intra-community organization where none existed; increased self-esteem and valorization of brazil nut activity; increased knowledge of business practices	Organic processes removing aflatoxin from supply; access to FSC through timber company partner; decreased slash and burn through environmental education; increased forest management knowledge	Organic certification process with new market opportunities, both domestic and international; national producer group of community brazil nut producers emerging
Bolivia	AGROFORT	Self esteem, family credit rating improved	Check agricultural frontier, institute integrated management	With better organization and skills, plan to invest in their own sawing and transport operation to cut costs; plan to add cacao and palm fruit oil
Cameroon	Ngola-Achip	Built 72 new houses in community with zinc roofing purchased from outside	Fire controls in areas of slash and burn; checked deforestation; wildlife management	Better internal organization and conflict resolution with youth and elders/elites; new investment strategies for profits; better marketing strategies; lobbying for reforms

Table 10: Social and environmental benefits (continued)

Country	Case Study	Social benefits	Environmental benefits	Spin-offs/issues
Cameroon	CAFT	Employment – estimated generation of 200 jobs in the Ngoyla region; skills' development in cutting, carpentry, artistry, dyeing, herbalism, management, marketing	Professionalized and mainstreamed local natural resource management practices based on Indigenous knowledge; formalized decision-making processes that incorporate conservation and biodiversity concerns	Financial incomes from timber sales will augment and reinvest in traditional local agriculture; plans to reinvest revenues from CAFT timber sales in housing, water and sanitation, electricity, health and education
Tanzania	Anani Butterfly Group, Tangga Region	Producer associations gain business and accounting skills; improved productivity of farms in the region; more employment; improved organizational and advocacy strength	Pressure on reserve declined, increased biodiversity in agroforest areas; local community acting as nature advocates	Close to reaching goal of US\$50,000 in sales per annum with hopes of making the group independent of donors and NGO support system
Cambodia	Bulanjor village	Employment, income, infrastructure	Fewer forest fires, community-monitored sustainability	Produce 20% of total country honey supply after 5 years, so will quickly reach scale within domestic market
China	Pingshang Bamboo Group	Employment, skills' building, income	Conservation of bamboo forest at low cost to nation; long-term social organization for management	Improvements in quality and quantity will yield much higher returns as market demand for product is strong
Nepal	Chaubas-Bhumlu sawmill	Fuelwood and NWFPs to community, social infrastructure, training, schooling,	Community has vested interest in sustainable practices	Danger from Maoist conflict and political backtracking; lobby to reform value-added and sales taxes on products; accountability of district forest office; further develop business organization with equity
Nepal	Tamakoshi Bel Juice Processing Company	Regenerated forests with fruit NWFP and natural pesticide effect on crops; social confidence; better governance of forest user group; drinking bel not coca-cola	Reforestation; regeneration of fruit species; decrease in pest epidemics	Continue to build entrepreneurial skills; balance social and business goals; cost-cutting on sample testing
India	Adilabad District, Andhra Pradesh	Improved incomes and employment; reduction in carbon emissions from the use of biofuel in village machinery	Reduction of use in chemical fertilizers; reduction in carbon emissions from the use of biofuel in village machinery	Carbon credits for restoration of degraded forests; Pongamia becomes the basis for a new oil economy for the rural poor
Philippines	Ngan Panansalan Pagsabangan Forest	Employment, income, infrastructure	Four forest guards employed to prevent illegal entry and extraction (one guard per 3,700 ha)	Weak institutional support; intermittent suspensions of harvest rights
PNG	Madang	Community infrastructure development	Sustainable forest management in enterprise area	Program is taking an integrated approach to community development with forestry as the main tool

fire protection and control, protected biodiversity conservation more effectively than in the narrow biological corridors between their concessions that were retained as national biological protected areas, and complied with the environmental criteria in the certification of nearly 500,000 hectares of CFEs (Gomez and Mendez 2004; Cortave and ACOFOP 2004).

The CFEs depicted in the case studies are potentially very positive environmental actors in tropical forests. For example, many seek to develop market linkages and production lines for LKS and which increases their concern for the long-term biodiversity and ecological health of their forests. Sociedad Sur in Mexico, MFROA in Madang, PNG, and the various extractive reserves in Brazil have all focused on developing product lines with LKS.

The control of illegal logging is another benefit of CFEs. In Cameroon, the community forest management initiative has sensitized villager forest managers to the illegal logging issue. Villagers are part of an independent village monitoring committee on illegal logging in forest concessions and community forestry in and around the Dja Biosphere Reserve. This community is also very important because it contributes to the nation's strategy to implement the African Forest Law Enforcement and Governance Ministerial Declaration and Cameroon's bilateral negotiations with the European Commission on forest law enforcement, governance and traded by local and indigenous communities (Angu Angu 2006).

### **Participation of CFEs in the forest certification process**

Donors and certifier bodies have undertaken significant initiatives to include CFEs in the forest certification markets. At a global level, the major do-it-yourself (DIY) retailers and buyers concerned with the responsible purchasing of high-value wood from sustainable sources have created a strong demand for certified wood products in the international marketplace – one that has not yet been met by supply. An issue has been the higher participation in the market by producers in developed and temperate countries and the greater share of certified wood from planted rather than managed natural forests. At present, 50% of the forests in Western Europe and North America are certified for sustainable forest management and account for over 96% of the world's certified forest. Producers in Europe and North

America have a strong incentive to certify in order to capture socially responsible markets, given the continued downward pressure on prices of commodity wood and pulp from more efficient suppliers.

A number of the CFEs depicted in the case studies are certified, either as a condition of their access to forest use or in response to a perceived opportunity to improve market access and market reputation. NPPFRDC in the Philippines and *Árbol Verde* and *Carmelita* in Guatemala certified as a mandatory condition of good management, but also hoped for an improved market share. In 2004, FORESCOM initiated a group certification process under the FSC resource manager scheme with the participation of six CFEs (not including *Carmelita*, which re-certified individually in 2005). *El Balcón* has developed an agreement with a North American certified timber buyer, *Westwood*, although it recently stopped selling to this buyer because the company concerned did not pay in a timely manner.

Mexico has the most experience in the certification of CFEs. At least 26 CFEs in Mexico have been certified to FSC standards (Anta Fonseca 2006) with coverage of 587,143 hectares (Alatorre 2003). *Santa Catarina Ixtepeji* in Mexico was certified with support from an NGO and government funds but is still not getting the expected premium on its wood sales. *COATLAHL*, the cooperative in Honduras, is certified. This has been advantageous for accessing the certified market in Europe, but the FSC forest management certificate covers a much smaller number of associations than were initially part of the cooperative and acts as a kind of barrier of entry to newcomers.

The Mexican and Guatemalan CFEs have received some positive benefits from the improved forest and enterprise management, although the Guatemalan communities are still expected to meet the cost of separate evaluation requirements of both the government agencies and of their donor funders, despite holding a valid certificate (Chemonics International 2003). NPPFRDC has not found certification to be either affordable or particularly advantageous thus far. The Madang communities in PNG recognize the much higher prices that their hardwood will fetch in Australian retail markets with an ecotimber label and are working with support from the Foundation for People and Community Development (FPDC) and ITTO to develop a certified supply chain. Governments can play an important enabling role by ensuring that regulations

*Box 12: The experience of an industrial-scale sawmill enterprise: El Balcón*

El Balcón is an *ejido* in the state of Guerrero in the highly diverse temperate forests of southern Mexico. This 25,000-hectare *ejido* of 750 inhabitants has one of the most advanced FSC-certified, sawnwood operations of all CFEs in Mexico, producing first-grade, dried pine lumber from its natural forests and surrounding communities along with roundwood logs and fuelwood. Its forests have received good management prizes on a number of occasions and are renowned for their pine and oak forest biodiversity, more than 4000 hectares of protected forest area, and endemic wildlife. The enterprise employs more than 120 people in its milling operation and offers another 180 temporary jobs for timber harvesting and management. Workers are covered by health and accident insurance and proceeds from the enterprise sales are also allocated to worker pensions, community emergency funds and a number of social projects including roads, water supply, community buildings, scholarship funds and higher study grants.

El Balcón evolved in a zone characterized historically by violent social conflict related to control of the area by powerful elites, rapacious

timber exploitation, and land tenure conflicts. The residents of El Balcón colonized the area in the 1930s as part of a wave of immigration into lands that were large estates of mainly absentee landlords. In the 1960s, the population radicalized in opposition to local elites and large timber concessionaires and government created a forest parastatal to reduce conflict. *Ejido* unions emerged in response to this, and conflict increased again in the 1980s with the rise of the drug trade. The CFE emerged in 1975 as a contractor to the parastatal. In 1985, El Balcón developed a new forest management plan and in 1987 installed a sawmill in the town of Tecpan, hiring a foreign mill manager in 1989 to run it. In 1997 the mill burnt to the ground and was replaced with a world-class mill. In 2002, an *ejido* member became the CFE manager. Until recently, El Balcón sold most of its timber to an FSC-certified US company, Westwood. In 2005, the *ejido* made a profit of US\$3.6 million after taxes – 82% of which was reinvested in the CFE, including environmental investments, and 18% in social goods and services.

*Source: Garibay Orozco 2006*

are supportive of certification processes, but if certification becomes a form of conditionality to CFE development it could stifle growth and also direct scarce public resources to a small number of CFEs at the cost of the majority (Segura 2004).

For most emerging CFEs in the tropics, the main barriers to success are much more important to resolve and, usually, buyers (particularly those in domestic market chains) are unlikely to be interested in certified forest products. Were additional funds made available

to these CFEs, it is questionable that they would prioritize investment in certification over more pressing priorities, particularly as their failure to remain in business is a greater present threat to the resource than less-than-optimal forest management practices. The debate is strong even in Mexico, where the government is exploring a national standard that will enable more CFEs to participate and where many communities have not been able to improve their profits or market share through certification.

## 4 Case-study analysis, issues for moving forward

### Factors in the successful emergence of CFEs

A number of the case studies talk about a “unique combination of advantages”. This is consistent with the literature review, which indicates that different products and product mixes require different scales and structures of operation and that market and policy conditions differ considerably from one geographic region to another, but a number of conditions and configurations of conditions are often present in successful initiatives. These include:

- secure land tenure (Bolivia, Honduras, Guatemala, Mexico);
- strong community and/or producer organizations (Mexico, Guatemala, Nepal, PNG);
- commercial value of the forest product (all);
- market accessibility (Nepal);
- political support and political and social stability (Bolivia, Guatemala, Mexico);
- strong existing social organization or external capacity-building support that developed a shared vision of the enterprise (Gambia, Mamirauá, Nepal, PNG);
- enabling regulatory frameworks (China); and
- appropriate access to technical support, market information and financing (Gambia).

Many of the case-study CFEs have been supported by government or donor funding and technical assistance. At the same time, in almost all cases, community members have provided a substantial start-up contribution in the form of free labour, a willingness to wait for deferred returns, and reinvestment of profits into the building of the enterprise. According to Richards (1991), the relative success of community forestry in Quintana Roo, one of the most effective models of tropical forest management in the world, stemmed from a “unique combination of advantages” including secure land tenure, strong producer organizations, the high commercial value of forest products, ease of extraction, market accessibility, political support, low demographic pressures and political and social stability.

### Competitive advantages of the CFE model

On the positive side, CFEs have some key potential competitive advantages in the marketplace. Increasingly, they are gaining tenure rights over significant forest and agroforested lands. Often they have proximity to and knowledge of local markets, the flexibility to supply small and fresher quantities to local traders, and lower opportunity costs for land and labour. Because they integrate resource management decisions into the overall livelihood and well-being strategies of the community or village, CFEs value the complementary benefits of the enterprise, which can potentially lead to lower prices, through resident owner-managers in some examples, a focus on the sustainability of management systems rather than boom-and-bust scenarios, and in-built incentives for local monitoring and forest protection. CFEs also have the ability to brand in specialized markets as “social producers” (Scherr et al. 2004).

CFEs have advantages that employment in a private-sector enterprise does not bring. For example, it can politically empower the community and its own authorities, which can lead in turn to multiplier effects in other development activities. It can provide impetus to address issues of agricultural encroachment both within and outside the communities, as has occurred in the CFEs studied in Mexico, Colombia, Brazil and Guatemala. Case studies note self-esteem-building and cultural stability, all enabling conditions for further development and problem-solving. Communities in Mexico have certified their forests even when economic returns were not higher, both to secure communal tenure in a privatizing society and – related to self-esteem – to demonstrate their sustainable management to conservation movements.

CFEs provide a very different model of development for the rural areas in which the case-study CFEs are situated. In a number of the cases, the enterprise structure has incorporated the social and cultural values of community participants, modifying a strict financial or economic approach with management for long-term biodiversity, ceremonial, recreational and subsistence values, the maximization of local employment opportunities, and attention to the wealth distribution balance for community social well-being. The search for the long-term stability

*Box 13: Sawmilling by MFROA in PNG*

The low returns to customary forest landowners in PNG from industrial concessions and the lack of alternative employment opportunities in rural areas has encouraged 50 landowner groups in Madang province to form an association of sawmilling groups, MFROA, with support from an NGO, the Foundation for People and Community Development (FPCD). Recognizing the potential to export sawn timber with an ecolabel to Australia and New Zealand, members of the MFROA have been investing in portable sawmills since 1998 with technical support from FPCD. The aim is to create a set of viable forest enterprises that maximize local employment and income and pursue sustainable forest management in areas that otherwise would be designated for industrial-scale concessions. The potential returns are enormous. Sawn timber produced by resource owners could fetch up to US\$150 per m<sup>3</sup> domestically and US\$450 internationally. The current area covered by the scheme in Madang is 10,000 hectares but local communities could potentially manage more than 800,000 hectares. There are many challenges. Limited business and technical skills, a lack of financial resources or

credit to finance forest management and cutting plans, a lack of business providers who can repair or supply parts for portable mills and other equipment, limited numbers of buyers interested in the small scale of production, and the lack of savings for the replacement of outdated equipment all hinder progress. Transport problems are being addressed through the use of buffalo and the MFROA is also exploring other appropriate technology solutions such as log transport by air balloon. It faces a future legal challenge related to plans to cooperatively process and market timber, as its status as an association does not allow it to operate for profit.

The FPCD is the main source of technical support to MFROA and other similar groups. It has learned the importance of promoting self-reliance among CFEs in management decisions, skills' building and financial planning, given the uncertainties of donor financing and the need to develop long-term relationships with private-sector buyers and service providers. Other landowners are watching the experience closely to see if this is a business model to follow.

*Source: Bun and Baput 2006*

of the business enterprise and a balance with social and environmental goals provides the main impetus for sophisticated CFEs to diversify forest management and productive activities to encompass a larger number of end-products and services and to include different groups within the community(s) as beneficiaries and participants. Local knowledge is another important defining characteristic of success that sets CFEs apart. A number of case studies include examples of innovation that have resulted from the particular local knowledge and experience of CFE members, a valuable resource that cannot be replicated easily in individual SMEs or private-sector industry.

### **Competitive disadvantages**

CFEs can face serious obstacles for competing in both domestic and international markets. These are related to: (1) the remoteness of many of their communities and lack of infrastructure for reaching the marketplace; (2) a lack of the business organizational skills and

social dynamics needed by a profit-making enterprise; (3) the small scale of operations, limiting their competitiveness where large-scale producers participate (pulp, paper, commodity wood) or where wood substitution holds down prices and demand; and (4) the relatively high cost of production of timber and NWFPs given the multiple objectives of the CFEs and the desire to maximize environmental services. Some of these limitations can be mitigated by appropriate training, information exchange, technical outreach and a levelling of the playing field through adjustments in government subsidies and regulations. Others are inherent to the CFE and determine the kinds of markets and market segments in which CFEs can fail or thrive.

Internal obstacles—conflicts among local stakeholders, limited management and business skills, a lack of political power to advance their agenda with policy-makers, and elite capture—are common constraints. The horizontal sharing of experiences between CFEs,

*Box 14: A cooperative timber enterprise in the tropical north-coast forests of Honduras*

COATLAHL is a unique cooperative east of the commercial port of San Pedro Sula on the north coast of Honduras. It was promoted in the 1970s as part of a large number of social forest enterprises in this region as a means of organizing a disparate set of farm families who had settled illegally in the tropical forests to practice agriculture in a frontier environment. Groups or associations of farm producers (called AMIs, or integrated management associations) were organized around the manual logging and hand-sawing of extra-high-value cedar and mahogany as a legal way of creating incentives to contain agricultural expansion, conserve the forest resource and generate local incomes. COATLAHL was a processing and marketing cooperative for these groups, of which there were 25 (700 members in total) in the initial years of organization, reduced to seven now (105 members). Initially, COATLAHL milled all of the wood produced by the AMIs, nearly going bankrupt in the process, particularly as cedar and mahogany became scarcer. Currently, COATLAHL only purchases a portion of the wood, and the rest is sold in the open market. This is the outcome of a difficult process during which inefficiency, combined with unstable government policies, competition from illegal logging and slow procedures for approving permits, led AMI members to leave COATLAHL and turn to illegal logging. The cooperative and its members were amongst the first CFEs in the world to certify their operations and have recently re-certified under the reorganization of the cooperative to purchase only high-quality certified raw material,

preferentially process the wood, and sell to a small number of high-value markets. The strategy that has been used to rethink the business model in the past few years is:

- re-certification with a new business plan and focused on the original supplier groups;
- identifying specialized market niches where certified products obtain a premium;
- focusing on producing using LKS to add value to forest resource through more balanced forest extraction and management;
- better sources of financing;
- more attention to the full productive chain and elimination of unnecessary costs or inefficiencies; and
- monitoring the chain of custody for certification purposes.

In 1992, the country's forest and agricultural legislation was modified to eliminate industrial concessions and ensure the rights of private forest landholders, but it limited the scale of community concessions (of which only a limited number remained) exempt from public timber auctions to operations of 1,000 m<sup>3</sup> per year. This has, in turn, limited the expansion of COATLAHL as it is not profitable to purchase auctioned timber. COATLAHL produces high-quality sawnwood and, more recently, specialty wood for the certified European market. Some AMIs also produce rustic furniture from sawn by-products.

*Source: del Gatto et al. 2006*

good technical assistance, and the development of collaborative relationships with the private sector are all strategies that have been used to address these obstacles (Scherr et al. 2004).

Successful strategies used in the case-study CFEs have included:

- maintaining second-tier and community-level organizations to reach larger scales and group technical services (Guatemala, Mexico);
- developing an efficient CFE administration that is consistent with social and cultural values and interests;
- networking with similar CFEs to learn from parallel experiences regarding options for sound social and business organization types and possible solutions to common problems;
- generating enough capital or savings to replace equipment, invest in higher productivity, or diversify to multiple products and productive activities;

- accessing market information for learning how to better respond to a buyer with the quality and quantity needed; and
- developing a political base and alliances to lobby for needed reforms and finance.

### Obstacles and barriers to CFEs

Table 11 summarizes the obstacles and constraints that have hindered the development of the case-study CFEs.

#### Market-related

In many cases, participation by the poor in forest markets is constrained by underlying market weaknesses: physical isolation, the low commercial value of forests, high transport costs, or highly fragmented markets with high transaction costs. With the

increasing consolidation of forest companies, large-scale buyers can manipulate the market to the disadvantage of weaker suppliers, and large vertically-integrated producers can set up un-scalable barriers to new entrants in the market.

A number of market barriers must be overcome for CFEs to be successful. Efforts are needed to reduce forest market monopoly buyer and seller control and to diversify the pool of market intermediaries. For example, the use of 'tied' credit deals that oblige local producers to sell to individual private traders often consolidates control and market power in the hands of the buyer. Local producers harvesting in public forests should be free to sell to any buyer and should not be restricted to selling to a forest agency monopoly. Agencies should not be allowed to sell the right to collect NWFPs from public forests. Minimal volume rules for bidding on forest concessions or purchase

#### *Box 15: Internal constraints on community forestry in Cameroon*

The Association of Balagbo, Pa'a and Bamouh Families of Ngola-Achip is a confederation of four villages in eastern Cameroon. The Association has rights to 4,200 hectares of community forest, and the organization is governed by a select group of villagers in the association bureau or governing board. Nominally, all villages and individuals have equal access to the forests under the association's constitution, and the Cameroonian government has made significant progress in decentralizing forest management to local actors through a series of forest policy reforms. However, significant obstacles to continuing growth and CFE success exist, largely due to internal conflict and constraints on CFE operations.

The most significant problem with the new regulatory structures implemented through Cameroon's forest policy reforms is that the new structures do not capitalize on existing traditional leadership roles in the village (ie village chief, village elders). The new regulations cause a distortion of traditional institutions and relationships within the villages and create a new village elite among the managers of the lucrative community forestry concessions. Although the bureau members in charge of the association are officially elected, they cannot make decisions that go against the wishes of the village elites.

When the bureau tries to make decisions that do not suit the interests and aspirations of the elite managers, the elites exercise their power and influence with the government to stall and block decisions or to revoke concessions and permits for the community as a whole. Internal conflicts in the past have resulted in a suspension of community forest status for six months – a devastating situation for the community.

The villages also suffer from internal conflicts between generations; the youth in the community are bitter about the elders usurping control and then poorly managing the community forest and forest concessions. The primary forest product in these villages is timber, but the communities lack the necessary technical infrastructure to carry out harvesting themselves, so they contract outside companies to do the work. This further removal from independent community management also leads to corruption within community governance and financial mis-management. Though vast, these problems are not insurmountable, and these internal conflicts could be addressed with careful and appropriate governance mechanisms within the association.

*Source: Angu Angu 2006; Subedi 2002*

Table 11: Obstacles to and constraints on CFE development

Country	Case study	Market barriers	Internal barriers	Regulatory barriers
Mexico	Santa Catarina Ixtepeji	Lack of markets for certified products	Rotation of CFE managers leads to lag time in new learning curve, but also creates sensitivity	Complex forest management planning rules
Mexico	Sociedad Sur	Small market for LKS; changing market standards for mahogany; competition from mahogany substitutes	<i>Ejido</i> conflicts have led to subdivision in work groups, reducing collective investment and returns	Expensive cost of forest management plans; tax filing rules for SMEs; lack of recognition of subdivisions of work groups
Mexico	El Balcón	Seasonal products	Unemployment in the rainy season	Complex forest management plan rules
Guatemala	Carmelita	Limited markets for LKS; high certification cost unless group-certified	Limited technical, managerial capacity, change in cooperative board slows processes, limited quality controls, employment generated for only some members	Concession period not secure beyond 25 years; private lands have only usufruct rights; certification can be an impractical burden; national protected-area authority has discretionary powers vis-à-vis community
Guatemala	Arbol Verde	Same as above	Same as above	Same as above
Honduras	COATLAHL	Limited market for LKS	Competition from illegal logging; incipient settler organizations; limited training opportunities	Limited area assigned to AMIs; policy instability; complex forest management planning rules
Colombia	San Nicolás	High cost of transactions relative to other possible actors		No local voice in the CDM and other schemes
Brazil	Mamirauá	Transport costs; vulnerability to floods; damaged roads	High illiteracy rates; lack of management skills	Complex forest management plan; inadequate legislation
Brazil	Manicoré	Seasonal demand; high transportation costs; wholesale buyers monopolize markets	Power disputes; distance between association members limits communication; concentrated decision-making process (fewer participants)	Multiple required permits are difficult to obtain and require complicated bureaucratic maneuvering through different offices throughout the state; process is poorly explained and information is inaccessible
Bolivia	AGROFORT	Transport costs and competition from illegal logging	Lack of skills; poor access to capital; limited negotiating skills	Ill-suited forest management plan process; ban of chainsaws favours illegal logging
Cameroon	Ngola-Achip	Transport costs are high and access is difficult and there is a limited labour market; limited buyers to remote area	Lack of knowledge of rights and options; poor negotiating skills; steep learning curve in organization	Inefficient bureaucracy and legislative support; artificial criteria in law for size and structure of CFE
Gambia	Bulanjor village	Transport costs; poor market access	Poor planning skills	Complex forest management plan
Tanzania	Amani Butterfly Group	Highly seasonal demand (northern hemisphere summer); rapid transport is critical and sensitive; security	Difficulty in achieving managerial self-sufficiency (relationship with NGO); potentially risky transition to independence; lack of business skills; internal gender/power conflicts	Delays in legal authorization of village and community forestry reserves; access to private and public reserves regulated almost entirely by informal agreements
China	PingShang Bamboo Group, Guizhou Province	Limited access to wider (non-local) markets	Poor location of processing machinery; bottlenecks in production (finishing machines under-utilized); informal membership structure	Ambiguous land and resource rights; uncertain ownership results in unmanaged resource; daunting bureaucracy
Nepal	Chaubas-Bhumlu Sawmill	Irregular supply; small market for finished goods; heavy tax burden	Elite capture	1999 Environment Day decree forbade green tree felling; government trying to regain control of forest user group resources
Nepal	Tamakoshi Bel Juice Processing Company	Bureaucratic hurdles imposed by government during transportation; competition from large companies	Lack of long-term business planning; low entrepreneurial knowledge	Business permits difficult to obtain; bureaucracy encourages bribery
India	Adilabad District, Andhra Pradesh	Transport cost, poor transportation infrastructure	Lack of market information; lack of credit and knowledge about how to obtain financing; lack of business experience	Joint forest management does not provide assured long-term rights to communities
Philippines	Ngan Panansalan Pagsabangan Forest	Unstable supply leads to erratic sales	Limited alternative sources of livelihood	Lengthy certification process; lack of government policy support
PNG	Madang	Transport and access	Conflicts over the division of profits	Lack of government policy support

should be lowered or dropped, as should minimum area limits for participation in forest development and conservation projects. National trade policies commonly disadvantage community forest producers. For example, Indonesian policy-makers earlier imposed high export taxes on both sawn timber and logs to promote domestic wood processing, harming millions of rubber farmers who sell rubberwood (ASB 2001).

To level the playing field for low-income local producers, discriminatory tax, fee, royalty and subsidy systems often need to be reformed. Forest and other agencies can devise alternative revenue strategies that streamline collection costs, are more equitable, and do not disrupt economic activity (Landell-Mills and Ford 1999). In forest revenue structures, it is important not to front-load permits; more money may be raised by back-end taxation, as is done in most other economic sectors, which would be fairer to local and low-income producers. Stumpage fees for wood from public forests should be set to reflect real values so that such wood does not out-compete wood from privately owned forests. Subsidies for forest plantations should also be designed in a non-discriminatory fashion. Comprehensive reforms to encourage local participation in forest product markets are under way in a few countries, such as Bolivia (see Box 5). Reform has been made easier by the fact that many governments have developed lucrative alternative sources of revenue, such as wholesale and retail market taxes.

Market barriers documented in the case studies include:

- lack of minimum infrastructure for the transport of products to market (Bolivia, Cameroon, Mexico, Nepal, PNG);
- lack of credibility with investors or buyers, leading to expensive intermediation;
- limited ability of emerging enterprises to meet demand for quality and quantity of products (PNG, China);
- limited markets for a broad range of timber species in tropical landscapes (Bolivia, Brazil, Guatemala, Sociedad Sur in Mexico);
- lack of financing for forestry planning and technical support (Cameroon);
- frequent changes in supply, lowering prices cyclically or permanently; and
- changing buyer demands.

### **Policy and regulatory factors**

CFEs often operate in an inherently contradictory context. On the one hand, governments in many tropical producer countries have invested considerable resources in supporting local participation in forest management as part of a more rights-based approach to the sector and a trend towards decentralized government responsibilities, including those for natural resource management. Programs and funds have been invested in promoting and supporting CFEs and forest laws and regulations have been adjusted to foster local participation in forest management and enterprises. On the other hand, the forest sector continues to be one of the most regulated sectors, with an historical carry-over of regulations geared to a different scale of operation and to a different set of behaviours. All of the case studies document struggles by the CFEs to develop their enterprises in a context of incomplete policy reforms and/or inappropriate or counter-productive regulations. Governments widely subsidize or provide privileged access to large-scale producers and processors, establish market rules that especially burden small-scale producers, set price policies that under-value the forest resource, establish official buyer monopolies, create artificial incentives for outside actors to clear local forests, and set excessive taxes and forest agency service charges.

In Mexico and Bolivia, the forest legislation clearly recognizes the authority of indigenous communities, *ejido* collectives and producer associations over decisions regarding the nature of the enterprise and the organizing principles to be applied to its administration and decision-making. In most other CFEs studied, governance rules impose administration or forest management decision-making to foster “good practice”, regardless of whether these rules are practical. For example, cases include predetermining the structure of the governing body for managing the forest (forest user groups in Nepal, CFCs in the Gambia), mandating membership in decision-making committees (women and marginal ethnic populations to be included), and imposing government officials into community structures (forest department officials as technical secretaries of joint forest management committees in India), rather than fostering learning or genuine co-management.

Markets for ecosystem services pose special challenges for policy-makers and regulators. Markets that have evolved voluntarily or in response to international conventions have concentrated transactions in

*Box 16: External constraints on community forestry: policy and market regulation obstacles in the Philippines*

The Ngan Panansalan Pagsabangan Forest Resources Development Cooperative (NPPFRDC) of Compostela Valley is a community forestry initiative based on natural forests and tree plantations in the Philippines. With 324 members and control over 14,800 hectares, the NPPFRDC has had community forestry status since 1996. There are 1,051 households dependent on the cooperative, which engages in both timber harvesting and processing. The NPPFRDC is a pioneer for the forest certification it received through SmartWood in 2000. However, the enterprise has suffered significant setbacks due to the high transaction costs of certification and permits, and restrictive forest policies.

Although a progressive concept, in practice timber certification has imposed an additional cost on CFEs like NPPFRDC that ultimately does not produce adequate dividends to merit the expenditure. Most importantly, the enterprise does not have access to markets for certified wood. Further, the policy and institutional structure on the regulatory side is insufficiently supportive to warrant the additional investments in time and resources necessary for certification.

NPPFRDC has also encountered regulatory obstacles produced by the Philippine government's

policy on forest enterprises. The cooperative must pay high transaction costs for permits and regulatory requirements and also a relatively high rate of tax on forest activities to the government, which amounted to 7 million Philippine pesos between 1997 and 2004. The national coordination of required resource use plans has restricted enterprise progress and negatively affected community welfare and forest rehabilitation activities. NPPFRDC must operate under an unstable and restrictive forest policy that tends to micromanage community enterprises while providing only weak institutional support. In the Philippines' environment, where alternative sources of livelihoods are scarce, CFEs like NPPFRDC suffer decreased economic returns and organizational pressures from these policies. The future success or failure of CFEs in the Philippines depends on the creation of a more stable policy environment. Necessary policy reform would include more responsible decentralization that returns ultimate resource and decision-making rights to communities, improved institutional support systems for community enterprises, and an institutionalized certification process consistent with national regulatory requirements for community forestry.

*Source: Pulhin and Ramirez 2006*

wealthier countries and where there is more stable governance. Scale is important, as is risk. CFEs have been advantaged for ecosystem services that only they can supply (water flow and quality in specific catchments or high-priority biodiversity on their lands) or as an extension of their existing activities. Government policies therefore need to ensure forest tenancy and safeguard tenure and resource access rights so that markets are rewards for services, not new claims on the resource base. Since markets favour communities with strong institutional structures, there is further reason for regulators to ensure they are not mandating set types of organizational structures that in fact are not socially compatible or resilient through their development over time.

### **Enabling conditions**

A number of issues are common to almost all the case studies, including those seeking ecosystem service payments or market schemes.

Tenure security and access to products:

- the importance of secure tenure rights over land and forest products (Colombia, Mexico);
- negative impacts of changing policies or incomplete tenure reforms (Cameroon, Gambia, Honduras); and
- artificial limits on CFE access to forest areas or allowable cuts which undermine the viability or future expansion of the CFE (Cameroon, Honduras).

*Box 17: The Mamirauá community timber enterprise in the Várzea flood region of the Amazon*

A successful CFE intervention in the Brazilian Amazon is the Mamirauá Community Timber Enterprise, which has been promoted over a long period of time with the assistance of the Mamirauá Sustainable Development Institute. While Mamirauá is an area of high biodiversity, with a complex ecology centred around an annual forest flood cycle, the area has long been under pressure from illegal and unsustainable logging activities. The inhabitants of local settlements have extracted timber from the flooded forests traditionally but in a precarious cycle, in which buyers extended food, goods and credit in advance of the harvesting season to local loggers but paid very marginal prices for the timber in return. Learning from a long, mixed experience of intervention in the region, the MISD was able to implement a highly participatory process of engagement with the local settlements and, based on a participatory and low impact forest

management planning methodology, organized the loggers into production groups by settlement, parcelling lots for sustainable logging by group. MISD assisted the logging groups with financing so that they would have the cash flow needed to negotiate better prices with traders and share knowledge about the market options.

Over the past decade, the settlement-based enterprises have organized into a series of associations to comply with legal requirements for harvesting, each association harvesting within an area of about 4,000 hectares with a maximum of five trees per hectare, including the raft trees for floating the logs downstream. Associations have developed strong internal rules and management regulations, are learning careful accounting, and are adapting management plans according to their local knowledge and new techniques.

*Source: Pires 2006*

## Policy and regulatory frameworks:

- negative impact of unfavorable taxation and regulatory frameworks for production and marketing (Philippines);
- risk of imposing artificial or overly demanding rules for management plans, monitoring or organizational structure on CFE forests (Cameroon, Nepal, Tanzania);
- the high transaction costs attached to specific regulations, particularly on marketing, and the likelihood of regulations fostering corruption (Honduras, Nepal);
- the high cost of forest management plans and/or onerous procedures for their submission and approval (Bolivia, Nepal and Philippines);
- the high cost and delays of transactions for permits and other bureaucratic requirements (Nepal); and
- limited market information and technical and business services for CFEs in general.

## Consistency of development policy in other sectors:

- direct and indirect subsidies to industrial-scale operations that undermine price structure (ie road-building, planting subsidies, or tax breaks);
- the need for regulations that acknowledge the multiple stream of products and services and therefore very different economic and financial parameters of a successful community enterprise and the need to avoid taxes or rules that limit profitability in the value chain, future earnings or additional benefit creation (Mexico, India); and
- rules of association or governance that hinder the operation of the CFE either established in forest-sector policy or in rules for SMEs (Gambia, Cameroon, Mexico).

## 5 Lessons learned and recommendations

### Lessons learned

This study has identified a changing political and market context within which CFEs are emerging and maturing, with far-reaching implications for the shape of the forest sector in ITTO tropical member countries. The structure of market demand has changed with growing trade in timber, NWFPs and ecosystem services. Demand has increased dramatically in the emerging economies, and a new set of goods and services has gained market share domestically as well as due to changing tastes in international markets. The larger processing industry is relying increasingly on plantations to supply raw material for timber and NWFPs. Natural forest managers and SMEs face increasing competition from plantations and wood-substitute products.

Tenure over the forest estate is shifting dramatically as well, with a large portion of tropical forests already under Indigenous and/or community tenure or in transition. The NWFP market is poorly understood. It is known to be huge and diverse, and many products have limited commercial potential as a significant source of income. Statistics are available for only a small subset of non-traditional wood products and NWFPs—perhaps 6,000 of the 30,000 or more harvested commercially in ITTO producer countries—and are not collected consistently across countries. Markets for ecosystem services are proliferating, with a myriad set of arrangements for watershed and water services and biodiversity and new arrangements for carbon sequestration trading, posing both threats and opportunities. The rules are still being formulated, and how these markets are defined will have a major impact on the role of CFEs within them. In principle, markets for ecosystem services could be useful mechanisms for capturing some of the non-economic or less tangible values of CFEs. CFEs have emerged as important and potentially major players within the forest marketplace. Many of the case studies document the emergence of CFEs as an outcome of support for community-based natural resource management (China, Guatemala, Honduras, India, Mexico, Nepal, Philippines). None of the examples existed prior to the 1980s, and most of the examples from Africa and Asia are quite recent (2000 onward). This is due to the recentness of policy reforms that provided

communities and collective groups with access to forest trade and rights to engage directly in value-added processing activities. The potential scope for growth in the case-study regions is huge, as indicated in Table 12.

The potential exists, therefore, for a significant number of CFEs to emerge and grow in tropical timber-producing countries where forest dependence and SMEs are a significant part of the forest economy. In fact, the situation is quite complex. In some countries, extensive experience exists of CFEs; in others, policy and regulatory environments have placed major barriers against their emergence. This makes it very difficult to assess the comparative or competitive advantage of CFEs and other private-sector or joint arrangements. It is also difficult to separate problems of incipient enterprises and inherent problems that will limit CFE success. While the elasticity of markets and the competitive edge of CFEs are certainly issues in all three types of enterprises—wood, non-wood and ecosystem service providers—there is evidence of an adaptability and creative innovation among existing CFEs that allow them to respond to new market challenges and options. CFEs can find it hard to compete in an undifferentiated market segment for commodity wood, but there are clearly many niches and plenty of room to expand. Flexible CFEs exploring multiple products and markets can find many ways to succeed, even if large numbers of CFEs emerge under favourable policy and enabling conditions. Private-sector partnerships with CFEs will depend on secure tenure and use rights. CFEs would also have a much greater chance to explore their comparative advantage were policies around plantation subsidies and infrastructure investments modified to recognize the potential of CFEs rather than concentrated on large-scale commercial activity.

Where positive support for market information, technical training, business and organizational capacity building, horizontal exchange, and financing to fill gaps has been provided, a number of CFEs have gained efficiency. Where this support was in the form of projects, or provided without addressing underlying tenure and regulatory barriers, the picture was less positive.

Table 12: Potential area for CFE emergence and growth in the vicinity of the case studies

Country	Case-study area ('000 ha)	Key mechanism(s)	Area of similar forest resources/ownership transition ('000 ha)
Colombia (1 case study)	20	Peace Accords; Hydropower watershed basin	400
Mexico (3 case studies)	100	Ejidos/communities with forest management plans	14,000
Central America (3 case studies)	500	Social forestry or community concessions	3,000
Amazon region (3 case studies)	100	Indigenous territories, associations or extractive reserves	30,000
Nepal (2 case studies)	3	Forest user groups	1,000
India (1 case study)	70	Joint forest management, community forestry/ agroforestry	20,000
West/Central Africa (3 case studies)	53	Village forests	4,200
East Africa (1 case study)	2	Village forest reserves and joint forest management	3,342
China (1 case study)	0.3	Village bamboo forests	4,000
Philippines (1 case study)	10	Community-based forest management areas	1,570
PNG (1 case study)	10	Customary lands	1,000
<b>TOTAL</b>	<b>868</b>		<b>82,512</b>

Only a fraction of those villages in the case study countries have been empowered to formally assume management responsibilities and/or to engage in commercial enterprises. In the cases of Gambia and Cameroon, for instance, 170,000 hectares (1995) and 4 million hectares (1995) have respectively been categorized as community forests, yet only 13,000 hectares in Gambia and 40,000 hectares in Cameroon have government-approved handover plans enabling legal forest utilization. Ghana is engaged in a similar process. In Nepal and India, community-based forest management and joint forest management have been established in 1.4 million hectares and 18 million hectares respectively, yet support for establishing value-added enterprises in the form of legal permits, technical assistance or access to finance has been much more limited and recent. In terms of ecosystem service markets, those communities with a long social history, such as in South Asia, have a comparative advantage for buyers and may be perceived as a less risky organizational option.

Certainly, the success of existing or new CFEs is not guaranteed. As in the Amazon, Central America, Mexico, Nepal and PNG, many CFEs will be unable to garner the needed internal social organization, develop the capacity to deliver quantity, quality or variety to the marketplace, or create the needed alliances with other CFEs or private-sector companies to establish a competitive niche or develop an

appropriate business model. But experience indicates that many others will find a niche successfully.

Some of the important lessons learned from the case studies include:

- starting a CFE requires a strong commitment from CFE members to weather long processes of approval, production and marketing problems, and the social pains of organizational growth;
- illegal logging undermines price structures for forest products and acts as a disincentive for members to remain part of a 'legal' organization. At the same time, it can be an important training ground for members who learn about the business and develop technical expertise;
- governments, policy and regulatory frameworks can be a major barrier to CFE emergence and growth, particularly when designed for industrial-scale operations or a small number of elites;
- international and non-governmental sector support for CFE development have been key in some cases to create political space for innovation and to weather instability in government policies towards SMEs and CFEs (Guatemala, Honduras, Philippines, PNG);
- too much control by government or donor supporters can stifle capacity building in CFEs and limit their innovations and market adaptations;

- creative support institutions can foster self-sustaining, participatory enterprises while providing important information for technical and market decisions, and new product development;
- CFEs can generate a wide range of goods and services and in parallel contribute to diversification, assist rural livelihoods, foster biodiversity conservation, invest in social infrastructure, and support social and cultural well-being;
- as CFEs mature they tend to diversify into multiple income streams to create more employment and returns and to address social issues that are hard to tackle early on;
- inclusion is a complex goal, and CFEs have mixed records on incorporating women and the very poor. However, many of the case-study CFEs fostered inclusivity as CFEs matured;
- sharing experiences among CFEs with similar product mixes and organizational types can be key to finding solutions to problems or identifying opportunities. This is particularly important for ecosystem services; and
- taxation at the point of extraction and some value-added taxes are counter-productive, reducing the overall economic returns at higher points in the value chain.

### **Recommendations for enabling CFE emergence and growth**

CFEs are extremely diverse, depending on the type and size of resource that they manage, the relationship of the enterprise to the economy of the region and to the community or communities, the range and type of forest products and market segment participation, and the individual history or cultural characteristics of the community(s) and enterprise. Organizational structure and types of decision-making and conflict resolution vary as well, depending on the economic, political or social importance of the CFE to the community members. Changes in market opportunities and in policies have a strong influence on these characteristics. Government, civil-society or private-sector support can be instrumental in the emergence or development of a viable and more equitable CFE, but it can also distort and stifle a CFE's development. There are many models of success, and CFEs are dynamic, changing characteristics and structure over time. Success is not guaranteed, nor

can it be reliably predicted by comparing CFEs in early stages of growth.

What is clear in the analysis of existing CFEs and the opportunities in the countries and forests where they have emerged is that enabling conditions—both internal community dynamics and external policies, regulations and available support—are very important in stifling or nurturing these business models. Second, a long time horizon and flexibility is necessary. The successful, long-standing CFEs presented in the case studies have emerged through a long organizational process, often weathering sizable shifts in market opportunities and demands and in policy and regulatory environments. Recent changes in the marketplace, both in domestic demand, new international niches and burgeoning markets for ecosystem services provide new dynamics but simultaneously expand the options for CFEs to improve their income streams while managing their resources for conservation and multiple goals.

#### *Box 18: Some roles for producer country governments*

- **Create enabling conditions for CFE growth at national and regional level**
- **Reduce regulatory barriers**
- **Secure tenure and use rights**
- **Promote business and technical support services**
- **Support CFE networking and market information**

The key recommendations of the analysis (Box 18) are that countries that have identified the potential for CFEs to manage important forest and agroforestry resources and participate in domestic and international markets for products and services should continue to create an enabling environment. Checks and balances need to be carefully selected in light of experience in the country, the of experiences of CFEs in other ITTO producer countries, and the changing dynamics of the CFEs and marketplace. In most cases, this analysis has found more barriers than support, more restrictions on the size of the resource and the uses to which it can be put than too much lenience, and more imposition of models and structures than nurturing of internal processes of CFE

growth. There is tremendous potential for sharing lessons and knowledge among CFEs and tremendous knowledge gaps, even in countries and regions where a number of support programs are in place.

The potential is huge. But CFEs need the space and time to find their niche. And support services are needed that are sensitive to the unique needs and potential of CFEs and which support horizontal learning and the development of market savvy and political voice.

Governments and donors should foster a positive environment for CFEs by:

- reducing barriers to the creation and operation of CFEs in terms of secure tenure or access to forest resources, an appropriate level of regulation, flexibility in rules and incentive structures, elimination or reduction of taxation at lower levels in the productive and value chains, avoiding indirect subsidies to large-scale producers at the cost of SME competitiveness, and reducing costly processes and procedures, particularly delays in approvals;
- providing better information to CFEs on their market opportunities and the lessons of experience, financing exchanges of experience among CFEs, supporting their networks, improving the flow of market intelligence, and providing assistance to develop technical, organizational and business skills;
- supporting proposals by CFEs and their associations with direct finance, fostering an enterprise plan of development based on local analysis and processes, and avoiding the creation of external business structures that are not appropriate to local conditions or cultural values;
- recognizing the broader goals and benefits of CFEs in serving economic, environmental, social and cultural objectives, and ensuring that economic analyses of the forest sector internalize these multiple benefit streams; and

- fostering clear rules of the game for company-community agreements, particularly a legal basis for agreements/contracts and a stable policy environment.

Activities that member governments could finance and support include:

- internal networking of CFEs horizontally and regionally;
- market analyses which identify opportunities which can be disseminated to emerging CFEs;
- analyses of enabling regulatory frameworks and existing barriers to shape reform agendas;
- the capitalization of growing CFEs and related technical assistance;
- business skills' development and training, including opportunities for CFEs to visit private industry and other SME operations;
- enhanced and more consistent participation of CFEs and their members in rule-setting for emerging markets (carbon, watershed services, ecotourism and biodiversity and certification). Some of the CFEs generate very positive conservation benefits in areas of HCVMs. In some cases, conservation is as effective in CFE-managed forest as in neighbouring protected areas.

Actions for the International Tropical Timber Council:

- support analyses of CFE tenure, forest management, enterprise structure and potential role in the marketplace;
- privilege projects that support CFEs;
- promote exchanges among CFEs to transfer lessons and inform policy-makers;
- establish a new financial instrument to directly support CFEs and their associations; and
- host an international conference to disseminate findings.

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## ANNEX I: Terms of reference and methodology

### Consultancy on ITTO study and international conference on forests and forest industries managed by Indigenous and other local communities

#### Terms of reference

1. Implement a study to review experiences of community-based forest industries in tropical countries. The study will:
  - (i) Report on the status of community-based forest industries in support of sustainable forest management in ITTO producer countries through reviewing relevant literature, including ITTO projects in this area;
  - (ii) Identify twenty communities experienced with community-based forest industries in ITTO producer countries and invite papers describing their experiences in developing community-based forest industries in one or more of the following areas: i) the production of timber and timber products; ii) production of non-timber forest products; and iii) forest environmental services;
  - (iii) Conduct field surveys of the development of community-based forest industries focusing on the production of timber and timber products as well as non-wood forest products such as bamboo and rattan) in selected ITTO producer countries;
  - (iv) Analyze and report on:
    - Factors in the success of community-based forest industry development in the production of timber and timber products in selected ITTO producer countries.
    - Common constraints to community-based forest industry development, in the production of timber and timber products and other products such as rattan and bamboo, in selected ITTO producer countries.
    - Lessons that could be learned from other sectors with successful community-based industry development.
  - (v) Recommend strategies that ITTO could adopt to assist producer countries in promoting community-based forest industry development to support the sustainability of the tropical forest sector, including community-based forest management programmes;
  - (vi) Prepare and present for the consideration of the Committee on Forest Industry a preliminary report at its Thirty-sixth session (June 2005) and a final report at its Thirty-seventh session (November 2005); and
  - (vii) The final study report should take into consideration comments of the Committee and compile invited papers. A written report along with a print-ready CD-ROM shall be submitted.
2. Taking into account the results of (1) above and any other relevant information and data available, prepare a summary report (20-30 pages) on forests and forest industries managed by indigenous and other local communities, with emphasis on:
  - (i) Extent of community-managed forest and community forest industries, the range of forest/forest industry ownership arrangements and the socio-economic importance of community forest enterprises; and
  - (ii) Identification and assessment of policies, measures and other conditions promoting or constraining development of community-managed forests and community forest industries, with particular attention to land tenure, policy and other regulatory barriers/incentives to management and trade and their relationship to illegal logging and illegal trade.
3. Develop a methodology for simple case studies and reporting on forest and forest industries managed by local and indigenous communities. The methodology should enable the studies to cover basic information on the forests/enterprises, their operations and reasons for success or lack of development. A model format for a five-minute Power Point presentation for showcasing a community-based forest/forest industry should be developed.

## Methodology for case studies of community-based forest enterprises

### Introduction

There has been an increasing recognition by ITTO producer countries of the role of forests in supporting livelihoods, rural incomes, and its potential to reduce poverty. There are major shifts underway in policy thinking in the tropical, forested countries on the face of the forest industry and the models that are best suited to maximize sustainable forest management, meet consumption needs, and realize economic returns in the marketplace through forest product and service trade. In particular, small-scale enterprise makes up the majority of the forest industry and employment, and changing tenure and regulatory frameworks are providing these enterprises a more level playing field in the marketplace.

Specific goals of the ITTA renegotiated in January 2006 include:

- (a) Promoting better understanding of the contribution of non-timber forest products and environmental services to the sustainable management of tropical forests with the aim of enhancing the capacity of members to develop strategies to strengthen such contributions in the context of sustainable forest management, and cooperating with relevant institutions and processes to this end; and
- (b) Encouraging members to recognize the role of forest-dependent indigenous and local communities in achieving sustainable forest management and develop strategies to enhance the capacity of these communities to sustainably manage tropical timber producing forests;

Community-based forest enterprises have emerged as effective economic and multi-valued models of wood and non-wood forest production, but only over the last few decades, and in limited numbers because the bulk of the forest estate continued to be officially owned and controlled by the State. The presence of tenure and regulatory restrictions make it difficult for community forest enterprises to emerge or operate legally – two factors that challenge the study and understanding of CFEs, their comparative niche, their success or failure, or to identify the opportunities or barriers for their emergence and growth. Key questions for tropical producer countries are the ability of these enterprises to supply significant quantities of raw and processed material to the

forest products industries and to efficiently supply forest services, including tourism, water flow and quality, or other ecosystem or global services.

### Rationale and design of scoping study

This scoping study has applied a methodology to analyze the emerging community-based forest enterprises so that enterprises can be compared across regions and countries and so that the benefits, returns, and limitations of these enterprises can be understood in the multi-dimensional context of their social, environmental and economic returns. Studies have shown that CFEs are different from private firms. “CFEs have unusual institutional features that force a reconsideration of theories of the firm, unique management tensions, varieties of possible institutional arrangements governing stocks, and flows of the natural resource, and may have special importance in delivering economic equity, and environmental protection” (Antinori and Bray, 2005).

The scoping study has therefore analyzed CFEs along a range of dimensions—economic, environmental, institutional, and social/cultural—and attempted to capture benefit streams and economic returns which encompass the multiple dimensions, goals, and activities of specific CFEs. It has analyzed both internal and external limitations, and analyzed best practices to identify lessons learned for policy, tenure and regulatory reform and to design appropriate technical and business support. It has also analyzed the horizontal linkages among CFEs and with private industry, as well as vertical linkages in second and third tier organizations or within a production or marketing chain.

The universe of enterprises included in the scoping study are formal or informal enterprises of groups of producers at the level of a community or group of communities or a community-based organization which owns or administers the forest resource upon which their enterprise is based. Economic activities of the enterprise can include production, processing and/or marketing of timber, wood, or non-wood forest products or ecosystem services. The universe has excluded farm forestry, government or private industry outgrower schemes on agricultural lands, and household-based or cooperative forest enterprises by individuals or communities with no ownership or management of forest resources.

Scoping of secondary literature included a review of recent literature of international and national and sub-national research institutions, building on information gathered by Forest Trends and partners on making markets work for low-income producers,

global trends in markets and payments for ecosystem services, global trends in community conservation, and global trends in timber supply and demand. Literature from extended research projects on timber and non-timber forest products commercialization and trade (e.g. ITTO, IIED, CIFOR, IUCN, FAO, ICRAF) was reviewed, along with literature on community conservation, adaptive co-management, integrated conservation and development projects, and community forestry (e.g. IUCN, CIFOR, WRI, Winrock, RECOFTC).

### **Case study selection criteria**

Case studies were selected from Latin America, Asia, and Africa to present a range of possible models for successful CFEs. The sample was heavily weighted to Latin America, where tenure and policy reforms have created conditions for the emergence of a significant number of CFEs, and included examples from Asia and Africa. Given the limited tenure transfers thus far in Africa in the ITTO Tropical Producer countries, two of the three case studies included non-ITTO producers countries (Gambia and Tanzania), one by FAO of enterprises emerging from the Market Analysis and Development methodology and the other highlighting the limitations that community forestry reforms have had in fostering a climate for CFE emergence and growth, in contradiction to assumptions in the community forest management literature. Joint forest management in India and Africa was not sampled, as the government does not transfer responsibility or administrative control to the communities concerned to enable enterprises to emerge.

This scoping study adopted the following criteria and would recommend its use in the future.

1. Privilege selection of enterprises with a minimum of 5-10 years experience with production, processing, and or marketing.
2. Based in an ITTO producer country in Africa, Asia and the island states or Latin America, or be an enterprise model with a high degree of relevance for CFE's or policy in those countries.
3. Sample to include a range of tenure arrangements in the forest:
  - a. full ownership, including ancestral domain,
  - b. joint forest management with local, regional or national government
  - c. co-management arrangements in areas of high biodiversity (reserves)
- d. customary tenure arrangements with usufruct rights
- e. private lands managed through cooperative arrangements, in some cases customary authorities.
4. Sample to include a range of ethnically homogenous, distinct minorities as well as complex, hierarchical and multi-ethnic communities and associations
5. Sample to include raw material producers as well as vertical integration to processing, grading, and trading of timber, wood and non-wood products
6. Case should have secondary data available on economic and financial dimensions of the enterprise, social cultural dimensions and relationships between enterprise and ecosystem management and valuation.

### **Data collection and analysis**

The data collected for each case covered the basic information on forest enterprises, their operations and reasons for success or lack of development. The information collected from each case follows. This format was also used for organization of the five minute Power Point presentation.

1. Economic and financial data on enterprise operations
  - production volumes, and cost structure
  - profitability and risk management
  - market participation and buyer-seller relationships
  - employment generation and skills
  - enterprise vertical or horizontal integration
  - enterprise diversification and new markets – links to agriculture
  - creative use of technology to solve scale, documentation or distance problems
2. Relationship to subsistence, livelihoods, local economy
3. Skills and knowledge building
4. Impact on environment and ecosystem services and values and resource base
5. Impact on cultural and social dimensions, political capital formation
6. Market participation, competitive advantage, niche markets

7. Barriers and constraints
  - internal and biophysical
  - policy-within and outside the sector
  - regulatory-procedures and application of regulations
  - market-monopsonies
8. Challenges for the future
  - Competitive advantage in marketplace and for forest conservation
  - Policy and regulatory enabling environment
  - Lessons for growth with equity
  - Intergenerational succession planning; risk management
  - Asset creation and diversification
- d. Include a range of community enterprise structures, including:
  - i. Community forestry enterprises
  - ii. Community-company partnerships
  - iii. Outgrower schemes with a collective dimension
- e. Include a range of ethnically homogenous, distinct minorities as well as complex, hierarchical and multi-ethnic communities and associations
- f. Include raw material producers as well as vertical integration to processing, grading and trading of timber, wood and non-wood products
- g. Cases should have secondary data available on economic and financial dimensions of the enterprise, social-cultural dimensions, and relationships between enterprise and ecosystem management and valuation.

### **Methodology for case studies of community-based forest enterprises (CFEs) and reporting on forest and forest industries managed by local and Indigenous communities**

#### **Template for reporting case studies**

##### *I. Selection Criteria: Recommended future criteria for selecting case studies*

- a. Privilege selection of enterprises with a minimum of 5-10 years experience with production, processing and/or marketing
- b. Based in an ITTO-producer country in Africa, Asia and the island states or Latin America, or be an enterprise model with a high degree of relevance for CFEs or policy in those countries
- c. Include a range of tenure arrangements in the forest, including:
  - i. Full ownership, including ancestral domain
  - ii. Joint forest management (JFM) with local, regional or national government
  - iii. Co-management arrangements in areas of high biodiversity (reserves)
  - iv. Customary tenure arrangements with usufruct rights
  - v. Private lands managed through cooperative arrangements, in some cases customary authorities
- a. Provide economic and financial data on enterprise operation:
  - i. Production volumes
  - ii. Cost structures
  - iii. Profitability and risk management
  - iv. Market participation and buyer-seller relationships
  - v. Employment generation and skills
  - vi. Enterprise vertical or horizontal integration
  - vii. Enterprise diversification and new markets – links to agriculture
  - viii. Creative use of technology to solve scale, documentation or distance problems
- b. Relationship to subsistence, livelihoods and local economy
- c. Skills and knowledge building
- d. Impact on environment and ecosystem services and values and resource base
- e. Impact on cultural and social dimensions, political capital formation

##### *II. Data Collection & Analysis*

Data collection for each case should cover basic information on forest enterprises, their operations, and reasons for success or lack of development. Data should also be summarized in a five-minute Power Point presentation.

- f. Market participation, competitive advantage, niche markets
- g. Barriers and constraints : internal and biophysical, policy – within and outside the sector, regulatory procedures and application of regulations, market monopsonies
- h. Challenges for the future:
  - i. Competitive advantage in marketplace and for forest conservation
  - ii. Policy and regulatory enabling environment
  - iii. Lessons for growth with equity
  - iv. Intergenerational succession planning: risk management
  - v. Asset creation and diversification

### **General information**

How long has the enterprise been in existence?

How much experience do enterprise members have in production, processing, and/or marketing?

Where is this enterprise based? Why does the location or enterprise model merit particular attention?

What are the forest tenure arrangements for the local people and enterprise members involved in this case study?

Classify the community enterprise structure. (Community Forest Enterprise, Community-Company Partnership, Outgrower Scheme with a Collective Dimension)

Explain the community type and structure of the community involved in this case study.

What form of forest industry do community members and local peoples in this case study engage in?

Is secondary data available on:

economic and financial dimensions of the enterprise?

social and cultural dimensions of the enterprise?

relationships between the enterprise and ecosystem management and valuation?

### **Data collection & analysis**

#### *Economic and financial data on enterprise operation*

What are production volumes for the enterprise?

Explain cost structures.

Explain profitability of the enterprise and how the enterprise members approach risk management.

How does the enterprise engage in market participation? Characterize buyer-seller relationships.

How does the enterprise generate employment in the community? How does involvement in the enterprise or forest industry develop skill-sets for community members?

Is the enterprise organized around primary collection or extraction and sale or vertically-integrated with value-added processing?

Does the enterprise diversify existing forest industry activities and open local enterprise to new markets?

How does the enterprise or community make creative use of technology or traditional knowledge or practice to solve scale, documentation or distance problems?

#### *Other enterprise data and analysis*

What relationships are there between the enterprise and local subsistence, local livelihoods, cultural values, and the local economy?

Explain skills and knowledge building that result from enterprise involvement. How does this relate to traditional knowledge?

Explain enterprise impact on the environment, ecosystem services, ecosystem values, and the local resource base. Mention any available data documenting impacts on forest quality, ecosystem health, or biodiversity.

Explain enterprise impact on cultural and social dimensions and political capital formation.

Explain aspects of enterprise market involvement: market participation, competitive advantage, and niche markets.

Explain barriers and constraints to success, including but not limited to: internal and biophysical constraints, policy constraints within the forest sector, general national, regional or local government imposed policy restraints, inappropriate or cost-heavy regulatory procedures, inequitable or misapplication of regulations, and market monopsonies.

Reflect on challenges for the future, including but not limited to: competitive advantage in the marketplace, competitive advantage for forest conservation, policy and regulatory enabling environment, lessons for growth with equity, intergenerational succession planning and risk management, asset creation and diversification.

## Annex II: The Rio Branco Declaration\*

### Rio Branco, Acre, Brazil, July 20th 2007

We, the managers and representatives of the Communities and Community Forest Enterprises (CFE) from forty countries, gathered together for six days in this conference, during which we have been able to exchange our experiences and community forest management models, sharing our needs and our potentials, dialoguing with governmental representatives and organizations of cooperation, and analyzing global problems of community forestry, based on conclusions that our work groups have made, declare that:

- Government policies and international agreements about forests should be based on the principle that we the local communities and the indigenous peoples are the principal actors in the sustainable management of forest ecosystems. Communities and forests can and should live in harmony.
- Governments should recognize the rights of local communities, and push for legal mechanisms that guarantee land tenure and the sustainable management of forests.
- It is necessary to create a global fund to support community forestry, since it has been demonstrated that the sustainable production of goods and services of forest ecosystems managed by communities contributes in a vital way to the mitigation of climate change and to human development.
- The incipient interchange of experiences and models of conservation and production of goods and services of the forest has proven to generate a human development potential through mutual learning and development of local capacities. We demand that the governments, international organizations and NGOs support these processes of interchange and implementation of local solutions.

- The applied research and cutting edge technology related to products and services of forest ecosystems should become a social technology, strengthening capacity transfers and a constant flow of knowledge from universities and research centers towards the communities and Community Forest Enterprises.
- Currently the costs of the processes of certification are very high, which makes them inaccessible to the majority of communities. Mechanisms of access should be created for forest use certification for both timber and non-timber products, in conditions that permit sustainability over time.

We delegate to the Global Alliance of Community Forestry and to the Rights and Resources Initiative as well as local, national and regional organizations represented here, to follow up on the recommendations stemming from the community groups gathered together in this conference, and to act to ensure their fulfillment at their corresponding levels.

We thank the people and the government of Acre, as well as the Federal Government of Brazil for its hospitality and invaluable support for the successful execution of this event, which provided great lessons and expectations to benefit the communities in all of our countries.

We also thank the International Tropical Timber Organization (ITTO) for its vital financial contribution to this conference, and for its support of the participation of the community groups in their office spaces. Finally we thank RRI, GACF and CSAG for their financial and logistical contribution, and for the efforts of their members to achieve the foreseen objectives of this conference.

\* Made by participants at the International Conference of Community Forest Management and Community Forest Enterprises held in Rio Branco, Acre, Brazil, on 15–20 July 2007, organized by the International Tropical Timber Organization, the Rights and Resources Initiative and the Global Alliance of Community Forestry in cooperation with IUCN – the World Conservation Union. It was hosted by the Government of Acre and the Government of Brazil through the Brazilian Forest Service.

## **Annex III: Field survey of community forestry operations in Mexico, with Oaxaca data**

Annexes III–VI are not contained in this volume. They have been published online and can be found at [www.itto.or.jp](http://www.itto.or.jp).

## **Annex IV: Survey of cases of community participation in markets for ecosystem services**

Annexes III–VI are not contained in this volume. They have been published online and can be found at [www.itto.or.jp](http://www.itto.or.jp).

## **Annex V: PowerPoint summaries of case studies**

Annexes III–VI are not contained in this volume. They have been published online and can be found at [www.itto.or.jp](http://www.itto.or.jp).

## **Annex VI: Case studies**

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