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SMALL-SCALE FORESTRY



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Small-scale forestry

Small-scale forestry – here meaning all activities related to forest ownership, management and enterprise – can contribute significantly to social and economic development when the circumstances are right. This issue of *Unasylva* examines the conditions and support that make it work. We don't define "small" by numbers, but use the term loosely. Small enterprises, for example, are those with less power, those owned by individuals or communities close to the resource base – those with real potential to contribute to sustainable livelihoods and rural development.

The first article looks for lessons beyond the forest sector: C.T.S. Nair examines some of the economic issues confronting small enterprises in general, and small forest enterprises in particular, in a rapidly globalizing world. The article examines links among scale, markets and economic performance, with special attention to the challenges of small enterprise participation in global value chains.

Clear, secure forest tenure is fundamental to sustainable management of forests by smallholders and to successful small forest enterprises. In Africa, most forests are publicly owned and managed, but several countries have reformed tenure systems to support locally based forest management. F. Romano gives several examples, pointing out enabling factors for their success.

In rural China, where land is owned by the State or by collectives, the household responsibility system has brought most collective forests under the management of individual households. J. Liu and J. Yuan outline some aspects of recent forest tenure reform that have influenced household forestry, noting the institutional challenges (in terms of policy, legislation and administration) that influence it.

About half of Europe's forest area is in private hands. F. Hirsch and co-authors summarize the results of an enquiry on private forest ownership conducted in 2006/2007, noting trends that need to be considered in policy-making such as urbanization and ageing of owners, increasing numbers of smallholdings and fragmentation of ownership.

Small enterprises are often vital to the quality of life of forest-dependent people. Yet they are frequently disadvantaged by isolation from market information and financial and business development services and by policies favouring larger enterprises. D.J. Macqueen discusses how to connect them better, both to each other through associations, and to decision-makers, service providers and markets.

Next, T. Hill and co-authors review progress in Burkina Faso of Village Tree Enterprise, an initiative aimed to build the capacity of poor rural households to generate income from non-wood forest products. The focus is on pinpointing opportunities for commercial trade and overcoming isolation from markets.

Microfinance services for small enterprises have become increasingly available in recent decades, but in many developing countries they are hard to obtain outside urban centres. In Petén, Guatemala, however, commercial banks have provided financial services to community forest concessions. R. Junkin evaluates the conditions that motivated the banks to get involved, as well as the advantages for the enterprises.

Cooperatives and associations help reduce isolation in small-scale forestry by providing information, advice and management support, as well as chances for networking and communication. L. Jylhä describes Finland's well-developed network of Forest Management Associations, which links private forest owners at the local level and beyond; it has also provided a model for other countries.

In Lithuania, forest owners' cooperatives are a relatively new phenomenon, only appearing with the return of private ownership following Lithuania's independence in 1991. The ongoing land restitution process has created many small, fragmented forest holdings, presenting challenges for sustainable roundwood supply. A. Gaižutis relates how through networking, the Forest Owners' Association of Lithuania has helped to create a services and marketing system for wood trade from private family forests.

Small-scale producers and poor households in developing countries reap only a small portion of commercial benefits from forest plantations. A.A. Nawir *et al.* examine incentives that can stimulate smallholder tree planting under various schemes – farm forestry, government-initiated collaborative management and private corporation initiatives (outgrower schemes). Based on examples from Asia and Africa, the article outlines enabling conditions for sustainable smallholder tree growing.

Where forest communities require modest volumes of sawn timber, small-scale harvesting – including the use of animals, simple tools and the breakdown of logs in the forest – can create employment and income opportunities while avoiding damage to the environment. P. Dugan looks at the benefits of small-scale forest operations at several locations in Asia and the Pacific.

Obtaining certification – which can encourage forest owners to manage their forests sustainably – is a challenge for smallholders. In Japan, where most of the forests are owned by smallholders, forest owners are pursuing certification through cooperatives. I. Ota highlights the success story of Yusuvara Forest Owners' Cooperative.

A central message in every article is that supportive policies and legislation and clear, secure forest tenure and forest management rights are fundamental to provide a favourable environment for small-scale forestry. The other key message is that smallholders and small entrepreneurs need one another. Cooperatives and associations enable them to benefit from economies of scale and to obtain the advantages of larger holdings/enterprises – to manage their forests, market their products, obtain financing, achieve certification or share knowledge and expertise.

Scale, markets and economics: small-scale enterprises in a globalizing environment

C.T.S. Nair

In many sectors small enterprises have long dominated economic activity, yet they face new challenges in the context of globalization. What lessons for forest-based small enterprises can be drawn from the larger picture?

“Greater performance in a mechanical system is obtained by scaling up. Greater power means greater output: bigger the better. But this does not hold for biological systems. There size follows functions. ... Increasingly, therefore, the question of the right size for a task will become a central one. Is this task best done by a bee, a hummingbird, a mouse, a deer or an elephant? All of them are needed, but for different tasks and in a different ecology.”

Drucker, 1990

A lead article in *Time* magazine in December 2005 highlighted the decline of the once-renowned Italian wooden furniture industry, primarily attributed to competition from Chinese exports (Gumbel, 2005). Interestingly, in both countries furniture is largely produced by small and medium-sized enterprises. Regardless of size, even long-established and flourishing enterprises, as in the case of the Italian furniture industry, are vulnerable to changes in their external environment. This is nothing new, except that the increased pace of globalization and the emergence of a “flat world” (Friedman, 2005) has enhanced the uncertainties, and such changes are better documented and reported now than before.

Small-scale enterprises have an important role in almost all sectors – agriculture, animal husbandry, fisheries, forestry, industry, services, etc. – and in some countries they form the basis of livelihoods for most of the population. Traditionally most small enterprises have been designed to meet the demand from local markets. Going beyond the

local markets requires upscaling in the volume or value of production. In a business environment that is primarily oriented towards the development of large enterprises, small enterprises operate on an uneven playing field. Globalization has added a new dimension to this imbalance; while new opportunities have emerged, so also have challenges, especially when political, social, economic and technological differences among countries enhance the unevenness of the playing field. Managing this disparity has become the major thrust of discussions relating to world trade and development.

Small enterprises play an important part in the processing, transport and marketing of wood and non-wood products. Increasingly even wood production is moving into the domain of smallholders in many countries. Provision of environmental services such as recreation is another area in which small enterprises are increasingly involved.

This article examines some of the economic issues confronting small-scale enterprises, including those in the forest sector. It focuses on the links among scale, markets and economic performance, particularly in the context of globalization. After analysing the dynamics of the development of small enterprises, including the implications of changes in value chains, it presents key issues relating to the future development of small enterprises and the relevance of various interventions.

CHANGING MOSAIC OF ENTERPRISES

Human enterprises range along a size continuum. At one end are small family-

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managed units (microenterprises) with limited investments, largely drawing on local resources and skills and producing for local markets. In forestry these include enterprises dealing with sawn-wood production through pit-sawing, charcoal production and collection and processing of non-wood forest products. At the other end are large corporations with multi-billion dollar investments drawing on resources from almost everywhere and catering to markets on every continent. These are represented in forestry by large sawmilling, plywood and pulp and paper units, large plantation companies and furniture retailers. The distribution of enterprises along the continuum changes over time depending on changes in the overall economic, political and institutional environment. The current and emerging role of small-scale enterprises needs to be understood in this larger context.

Small and medium-sized enterprises dominated all spheres of economic activity until the beginning of the industrial revolution when technological advancements, especially in manufacturing and transportation, enabled some of these enterprises to scale up production. Larger enterprises, both public and private, benefited significantly from improved access to inputs and to emerging large markets, national and global. They became symbols of progress, influencing policies, legislation and investment priorities. Of considerable importance was the emergence of transnational corporations, whose share in the production and distribution of products and services has increased enormously in recent decades, as has their direct and indirect influence on national and international policies.

Nevertheless, small-scale enterprises remain a vibrant segment of most economies. Notwithstanding efforts to provide an identity based on criteria such as size of landholding, number of workers employed and capital invested, small enterprises comprise highly heteroge-

neous activities, producing a variety of products and services, using diverse technologies and catering to the demand from different markets. Increased attention to their development largely stems from their role in enhancing income and employment, production of basic needs goods and alleviation of poverty (FAO, 2005; Kozak, 2007).

The large number of start-ups and closures reflects the dynamism in the small-scale sector. Small enterprises epitomize individual initiative; since the investment requirements are low and entry is relatively easy, individuals can take risks and invest in small enterprises and leave the business when the going becomes tough. As a corollary, many small enterprises lack the necessary skills and resources to operate effectively and are ill prepared to deal with problems. In particular they face severe constraints in attracting management skills.

Consequently, closures of small-scale enterprises are high. In India, for example, almost 37 percent of 23 million small-scale industrial units surveyed during 2001/2003 were found closed. Detailed data collected from about 750 000 of the working units revealed that about 14.5 percent were ailing, with erosion of net worth by more than 50 percent, delay in repayment of loans by more than 12 months or decline of

gross output during the three consecutive years (Government of India, 2003). A majority reported lack of demand as the main problem.

THE DYNAMIC WORLD OF SMALL-SCALE ENTERPRISES

The future of small-scale enterprises, including those in the forest sector, will depend in large part on their ability to adapt to changing markets, technological improvements, transition from the informal to the formal sector and the characteristics of the value chains in which they take part.

Changing markets and scale of production

The scale of enterprises is closely related to the size of the markets, the characteristics of products demanded and the technology adopted. Transportation constraints have particularly favoured small-scale production, processing and trade of wood and non-wood forest products in many countries. Both demand for products and supply of inputs have been dictated by local socio-economic conditions favouring the adoption of simple traditional technologies.

During the past few decades, however, the products demanded and consequently the characteristics of the enterprises have significantly changed. As the demand for many traditional products declines, new

Despite a decline in the demand for traditional products such as bamboo baskets and mats, new markets are emerging – for example, these bamboo structures from China are marketed in the United Kingdom as gazebos for hot tubs, gardening or entertainment



UK BAMBOO SUPPLIERS

markets are emerging. Bamboo products provide an example. In many countries, small-scale production of bamboo baskets and mats catered to the demand from the agriculture sector – until changing agricultural practices and the emergence of substitute products, especially plastic wares, undermined the demand for them. New technologies and markets have led however to the emergence of enterprises producing a variety of other bamboo products, including handicrafts and panels. However those who lost out by the decline in demand for traditional products are not necessarily the ones who are benefiting from the new opportunities.

Catering to mass markets requires scaling up of operation at some stage in the value chain. Economies of scale are particularly significant in mechanized processing, transportation, innovation and marketing. Sawwood, panel products and especially pulp and paper are increasingly produced in larger units, which helps to reduce unit costs and thus increase competitive advantage over small-scale production. Scale economies are less pronounced in production processes involving land and labour, as illustrated by the increasing emphasis on smallholder involvement in wood production through industry–community partnerships.

Innovation and scale of production

As the characteristics of the products demanded in the market change, technological improvements become necessary. Successful enterprises invest substantial resources in innovation to create new products or improve existing ones, and more importantly to promote them. However, scale economies in innovation and marketing confer distinct advantage on large enterprises. Indeed many large enterprises focus on these as their core competencies, while outsourcing production to smaller units. Investment in innovation has high risks; few small-scale enterprises venture into

product development and promotion. Large enterprises are also in a better position to safeguard their innovation, e.g. through patents.

In recent years, the overall technological and capital intensity of production has increased substantially for small-scale enterprises as for others. Enterprises that depend entirely on natural factors of production, especially land and unskilled labour, are unable to cater to changing markets requiring high-quality refined and processed products.

Yet new and miniaturized production tools are revolutionizing small-scale production. Those small-scale forestry enterprises with low technology intensity are likely to be overtaken by others that are more technology intensive and efficient.

Scale, transaction costs and the informal sector

A large proportion of small-scale enterprises, especially in developing countries, operate in the informal sector, outside the framework of established rules and regulations. The informal sector is relatively easy to enter and to leave, hence its predominance in low-income situations. Informality also compels enterprises to operate on a smaller scale and to be less “visible”, as is the case with many small-scale forestry enterprises. Such enter-

prises often provide only part of owners’ and workers’ income and employment. Many small-scale forest enterprises (e.g. collection and processing of non-wood forest products, charcoal production, pit-sawing and tree farming) are part-time or seasonal activities.

The preponderance of the informal sector is also due to the enormous barriers to entry to the formal sector, including complex rules, procedures and regulations (World Bank, 2006) and, in the forest sector, ill-defined property rights. In many countries registration of enterprises is extremely tortuous and time consuming and often involves substantial costs, including bribes. For most small-scale units these costs are not commensurate with the benefits of entering the formal sector. Depending on the overall state of governance and transparency, the transaction costs that small-scale enterprises incur can be very high. There are hence strong incentives to operate in the informal sector (see Box).

Operating in the informal sector however imposes a number of other costs. The informal sector remains crowded, driving down income and causing depletion of resources. This is particularly so in the forest sector, for example in the collection of wood and non-wood forest products. Of course the informal sector also has rules and regulations, enforced

Extent of informal economy and the share of small and medium-sized enterprises

The size of the informal economy and the share of small and medium-sized enterprises vary depending on the level of development. Typically in low-income countries, informal activities, including small and medium-sized enterprises, account for 47 percent of gross domestic product (GDP), while registered small and medium enterprises contribute 16 percent and large enterprises the rest. In middle- and high-income countries the share of informal activities in GDP declines to 31 and 13 percent, respectively, while that of small and medium enterprises increases to 39 and 51 percent, respectively. This enormous increase in the share of small and medium-sized enterprises is due to an improvement in the business environment, especially a reduction in the transaction costs of moving to the formal sector.

Source: ILO, 2007.



Historically, small-scale enterprises – including many that are forest based – have operated in the informal sector and been part of local value chains, where opportunities to improve income are limited (market for local handicrafts, Brazil)

by individuals or groups operating outside the framework of established systems (often criminalizing the activity). Removal of entry barriers and reducing the transaction costs seems to be the only option to encourage the shift from the informal to the formal sector.

Value chains and small enterprises

One of the most important impacts of globalization has been the rapid growth of international trade and the corresponding changes in value chains. A value chain is the connected series of enterprises, activities, resources and knowledge streams involved in creating and delivering products and services to end users.

As more and more of the production is traded, the proportion of imported products in the consumption basket increases, signifying the growth of global value chains and a corresponding contraction or stagnation of local value chains. Long-term performance of small-scale enterprises will depend on their linkage with the value chains and the extent to which they are able to influence the distribution of benefits along them. While value chains can be local, regional, national or global, for convenience of analysis attention here focuses on the local and global value chains.

Local value chains. Historically, small-scale enterprises – including many that are forest based, for example enterprises producing bamboo baskets and mats, charcoal, pit-sawn wood, furniture and non-wood forest products – have been part of local value chains which are characterized by a limited number of stages between production, processing, trade and end uses. Sometimes many of these functions coalesce in one enterprise.

Income generated by small enterprises depends largely on the nature of local demand and the overall state of the local economy. Enterprises catering to low-income markets, typical of most

developing countries, often find it difficult to make ends meet. Very few are able to generate surpluses that could be reinvested in enterprise improvements. Often, small-scale forestry enterprises are more isolated from markets and key services (such as finance) and are operated by socio-economically weaker sections of society (often indigenous peoples). Having limited opportunities, these groups reap less income from such enterprises and are therefore less able to invest to improve product quality, scale up production and improve enterprise management.

Moving up the value chain entails

Small enterprise assistance for people who are marginalized or isolated from markets and services: a resource person shows indigenous people in the Sierra Madre mountains of the Philippines how best to extract almaciga resin (Manila copal), exported for use in the manufacture of varnish, paint, soap, printing inks and paper sizing



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substantial costs for small enterprises, including scaling up of production and moving into the formal sector. Small enterprises are also vulnerable to competition from low-cost producers elsewhere, especially when the quality or characteristics of the products are perceived to be better. In a number of instances low-cost production linked to global value chains has more or less decimated local small enterprises.

The future of small-scale enterprises linked to local value chains, especially in low-income environments, is precarious. As income goes up and lifestyles change, the enterprises have to upgrade their products or will find their market share completely eroded. Traditional forestry enterprises linked to local value chains face particular problems as they are largely dependent on locally collected low-value raw material and unskilled labour.

Global value chains. As globalization advances, the reach of global value chains is expanding. They involve multiple players and stages, linking production, processing, logistics, advertisement, wholesaling and retailing – and are thus complex to manage. These value chains are transforming production, trade and investment (Abonyi, 2007), helping to scale up the volume of production and facilitating improved processing. The survival of small enterprises increasingly depends on their ability to link with global value chains. Even environmental services such as provision of recreational amenities, carbon sequestration and protection of biodiversity will require scaling up of activities requiring some linkage with global value chains.

The share of benefits that small entrepreneurs draw from participating in global value chains depends on the indispensability of their contribution, their understanding of the overall functioning of the value chain, transparent information and communication flow up and down the value chain, and their bargaining ability. Substantial differences

exist in this regard between joining an established value chain and creating a completely new one.

Established value chains can ease the process of scaling up or qualitative improvement necessary to tap distant markets. Critical scaling up functions such as product design, logistics, branding and retailing are taken up by global players, while the small enterprise focuses on production. However, small enterprises unfamiliar with the functioning of such large value chains may not fully benefit from joining them, even if the product ends up in high-income markets (see Box). To participate in some global value chains driven by transnational retailing organizations, enterprises must adhere to rigid speci-

fications and tight delivery schedules, which may curtail their independence, initiative and flexibility.

Where well-established value chains exist, it is extremely difficult to create similar ones, leaving little option for small-scale enterprises to broaden their market access. Public pressures, especially from consumer groups, could help ensure social and environmental responsibility, enabling a fair and just distribution of benefits among the participants in the value chain. For example, the voluntary code of labour practice of the Ethical Trading Initiative, an alliance of companies, trade unions and non-governmental organizations, has significantly helped to improve working conditions (Barrientos and Smith, 2006).

Small enterprises in an established global value chain: the example of the wooden furniture industry

In the wooden furniture industry, transnational retailers who control critical functions garner a significant share of the final value of the products (Kaplinsky, Morris and Readman, 2002). Decline in unit prices has compelled retailers to source supplies from countries where costs are low, shifting the location of furniture production, for example to some Eastern European countries, China, Viet Nam and Indonesia (Kaplinsky and Readman, 2005). This race to the bottom has increased competition among small-scale enterprises often supplying the same global value chain – resulting in wage reductions, unacceptable working conditions and even the use of illegally procured timber (Loebis and Schmitz, 2005). In some instances, for example the South African furniture industry, growth in exports has actually resulted in a decline in real income (a phenomenon known as “immiserizing” growth) (Kaplinsky, Morris and Readman, 2002).

A manufacturer of fine yachts based in the United States has its factory in southern China, where costs are low



MARLOW MARINE SALES

Fair-trade organizations have helped to create new value chains focusing on niche markets, taking advantage of the willingness of consumers to pay a higher price for products that are environmentally sustainable and socially acceptable (Redfern and Snedker, 2002). Creation of such new value chains has helped to revive small-scale enterprises (see Box). However a major problem with niche markets is their volatility, especially when production and processing technologies are amenable for easy copying.

While global value chains offer new opportunities for small enterprises to overcome some market constraints, participation in them is demanding in terms of product quality specifications. Small enterprises have to work in a more formal situation and to upgrade their production and management skills. Adherence to international standards, especially on health and safety, is critical. These requirements are often beyond the capa-

city of small-scale enterprises, leading to their exclusion from the more remunerative markets (Abonyi, 2007). For example, accessing markets for certified forest products is much easier for large plantation companies than for small-scale growers.

INTERVENTIONS IN SUPPORT OF SMALL-SCALE ENTERPRISES

Many types of intervention have been attempted to promote the development of small-scale enterprises, including those in the forest sector. Examples include:

- earmarking certain products and services exclusively to the domain of small enterprises to protect them from competition from large enterprises;
- improving access to credit, technology, skills and market information (business development services);
- promoting associations, clusters and cooperatives to help small enterprises benefit from scale economies

in procurement of inputs, transport and promotion of products and research and development (Macqueen *et al.*, 2006), and to increase their bargaining power and prevent their exploitation by intermediaries or large value chains;

- creation of an enabling environment for business, in particular to remove many of the obstacles that impose high transaction costs on small enterprises (Donovan *et al.*, 2006).

While some of these interventions have been aimed to address the diseconomies of small-scale production, most have been pursued to fulfil broader socio-economic objectives such as employment and income generation, poverty alleviation and rural development.

Earmarking products exclusively to the small enterprise domain has been ineffective. It has curtailed competition, encouraged inefficiency and prevented the evolution of vigorous small-scale enterprises. Many small enterprises have become dependent on protectionist measures and substantial public subsidies, which curtail their long-term innovation, efficiency gains and ability to withstand competition in a global environment (Bhavani, 2006).

Provision of business development services in most developing countries has been largely in the public domain and has been inefficient and highly dependent on public subsidies. This is increasingly being taken up by associations, cooperatives and clusters, which often function efficiently, as in the case of tree growers' associations in some countries or clusters of furniture producers. However, their effectiveness largely depends on the overall political, social and economic environment.

Growing attention is therefore being focused on improving the overall business environment, to remove the economy-wide barriers to entrepreneurship. This is particularly important to reduce the costs of doing business and to facilitate the shift from informal to formal

Development of new value chains: handmade paper production in Nepal

Handmade paper based on lokta (the forest plant species *Daphne bhoula* and *Daphne papyracea*) has been produced in Nepal since at least the twelfth century, when it was produced in several locations for government records and religious texts. Following competition from imports, first of handmade paper products from Tibet around the 1930s and then of machine-made paper from India, by the 1960s the handmade paper industry in Nepal had almost collapsed. Traditional knowledge of lokta paper production was limited to only a few families in the Baglung and Parbat districts. Growth of tourism in the 1970s led to the revival of the industry and subsequently brought to light the opportunity for tapping international markets. The UNICEF/Agricultural Development Bank Nepal (ADBN) project "Community Development through the Production of Handmade Paper", launched in 1980, took advantage of favourable market opportunities by facilitating the creation of a global value chain. It developed a craft factory whose final products include UNICEF greeting cards. Currently there are about 600 handmade paper units in the country, including 377 registered units. Of these, 175 produce about 30 000 tonnes of paper products annually. The industry is currently growing at an annual rate of 16 percent and paper is now made in 16 hill districts. Community involvement in the management of forests through forest user groups has favoured regeneration of *Daphne* spp., and a number of forest user groups have taken up handmade paper production. The industry is reported to employ about 28 000 persons of which more than 70 percent are women.

Source: Biggs and Messerschmidt, 2005; Subedi, Binayee and Gyawali, 2006.



Niche markets and global value chains offer opportunities for small forest enterprises: small-scale enterprise in Pakistan manufacturing fine hockey sticks and cricket bats for the international market

activities, which opens up many opportunities for small enterprises including improved access to credit, markets and technology. An improved business environment also encourages innovation and entrepreneurship and helps to mobilize the resources from the “bottom of the pyramid” (Prahalad, 2005), i.e. the numerous people in the low income strata, that currently remain untapped. However, creation of a favourable business environment is a major challenge as it is linked closely to improved governance and broader political, social and economic development.

As globalization advances, a major policy dilemma that most countries face is how to protect domestic enterprises from real and perceived unfair competition from imports. Certainly political, economic and institutional differences among countries do result in unevenness of the playing field, providing competitive advantages to those operating in a supportive environment. The demand for protective barriers to prevent “unfair” competition will be strong but should be avoided in favour of building up internal capacity along with gradual opening up to competition (Bhagwati, 2004).

SMALL-SCALE ENTERPRISES: ROMANTICISM VERSUS REALITY

What will happen to small-scale enterprises, including those in the forest sector, will largely depend on the overall social, economic and technological changes. Certainly small enterprises will continue to have an important role in the production of goods and services and in the generation of substantial employment and income in almost all countries, both developing and developed. However, the character of these enterprises will change, dictated by changes in demand. Many traditional enterprises are likely to vanish as the demand shifts to different products. At the same time new opportunities are springing up as production of wood and non-wood products moves away from large public-sector and corporate entities. While many small enterprises will become strongly linked to global value chains, others will continue to function independently, focusing on national and global niche markets. A shift from mass-produced to custom goods will particularly favour small-scale enterprises.

In particular, developments in information and communication technologies will considerably benefit small enterprises, helping them to move into new areas of production. These technologies are already beginning to erode the disadvantages that small enterprises previously faced in obtaining information on

markets and prices (Moodley, 2003). E-commerce is reducing transaction costs (Cox, 2004), and improvements in transportation technology are facilitating the sale of smaller consignments. In a way, the boundaries of local markets are expanding beyond what has traditionally been regarded as local. Those who are able to take advantage of these tools will push out those who are unable to do so. Continuous upgrading of technologies will become critical for maintaining competitiveness and thus survival.

In facilitating the development of small-scale enterprises, an understanding of reality should prevail over romantic perceptions. Inherently small is neither beautiful nor ugly. Depending on the social, political and economic environment, small enterprises can exploit labour and natural resources in an ugly way, or they can contribute significantly to social and economic development and the livelihoods of the poor. What is required is an objective view of what small-scale enterprises can and cannot do. Priorities and strategies need to take the dynamics of long-term societal change into account to avoid the pitfalls of supporting enterprises just because they are small and forest based. Much of the thrust should be to nurture entrepreneurship and to provide a favourable environment for small-scale enterprises to develop on their own. ♦



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Forest tenure changes in Africa: making locally based forest management work

F. Romano

Clear, secure and diversified forest tenure systems are fundamental to sustainable management of community forests, small private forests and family forests.

Forest tenure systems in Africa are characterized mainly by public ownership, with most forests under the direct control and management of government. However, shifts are taking place, in particular to locally rather than State-run forest management. This article, based on a recent study conducted by FAO (see Box, following page), examines some specific examples and analyses enabling and constraining factors for the success of alternative tenure systems. It focuses on those alternative systems that have demonstrated particular success in addressing local needs and supporting sustainable forest management because tenure is secure and appropriate tenure diversification processes are in place, favouring locally based forest management. It reinforces the importance of security of tenure as a building block for sustainable forest management.

WHAT FOREST TENURE IS, AND WHY IT MATTERS

Forest tenure is the combination of legally or customarily defined forest ownership rights and arrangements for the management and use of forest resources. Forest tenure determines who can use what resources, for how long and under what conditions. Legally, tenure is a bundle of both rights and obligations: the right to own, hold, manage, transfer or exploit resources and land, but also the obligation not to use these in a way that harms others. Tenurial rights include but are not equivalent to ownership. Absence of full ownership does not preclude the possibility of other tenure rights over a

Although most of Africa's forests are State owned and managed, tenure arrangements are emerging that provide tangible rights to local users through locally based forest management, mainly meaning small-scale community forests, small private forests or family forests



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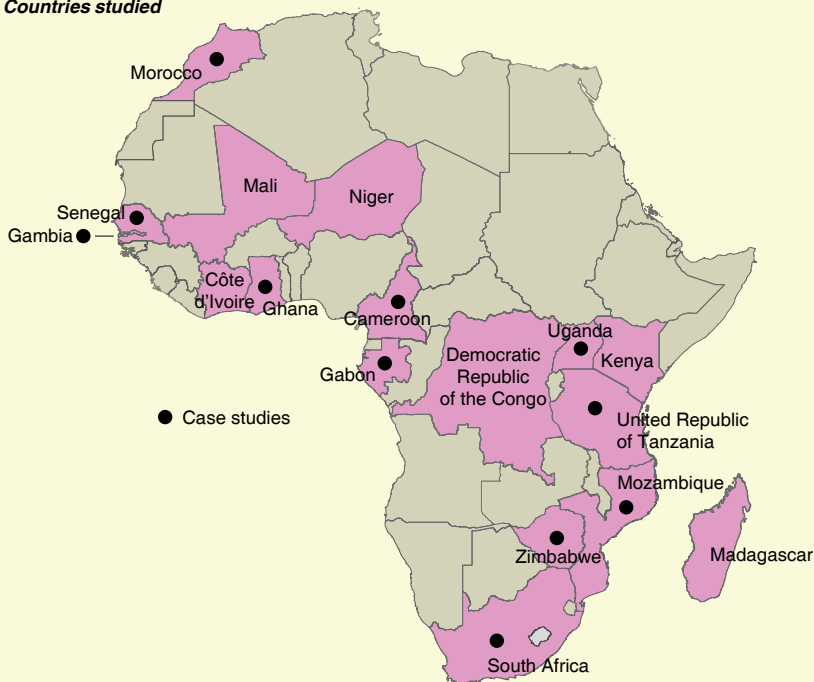
FAO's study on land tenure in Africa

As a complement to the Global Forest Resources Assessment 2005 (FRA 2005), FAO carried out studies on the status of forest tenure in South and Southeast Asia (FAO, 2006b) and Africa (FAO, in preparation). These studies aimed to clarify the mechanisms that regulate the relation between tenure, tenure shifts and reform on the one hand, and sustainable forest management and poverty alleviation on the other. The objective was to provide guidance that could help governments strengthen, adapt and formulate policies that are conducive to local management of forest resources.

The study on forest tenure in Africa analysed tenure according to two variables: the type of ownership and the level of control and access to resources. It explored the various possible combinations of forest ownership and arrangements for the management and use of forest resources.

Data were collected from 17 countries representing different ecoregions and a wide spectrum of tenure systems (see Map). Quantitative information was complemented by case studies from 11 countries analysing the relation and impact of forest tenure on sustainable forest management and poverty alleviation.

Countries studied



natural resource. Tenure security refers to the assurance, robustness and durability of tenure, and includes the right to exclude others.

In the context of this article, locally based forest management refers mainly to small-scale forestry dealing with the management of community forests, small private forests or family forests. This

management system normally implies local decision-making and planning processes taking into account traditional tenure systems (which are often based on common property in Africa, but vary by country in terms of how forests are managed and by which traditional authority), local knowledge and local needs.

While about 85 percent of the world's

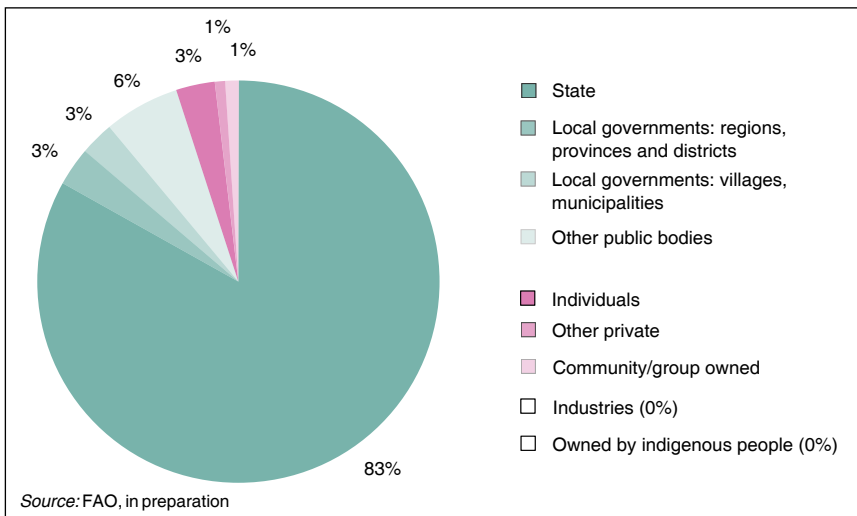
forests are publicly owned (FAO, 2006a), it is increasingly apparent that locally based decision-making and tenure security influence the sustainability of forest management (UNDP, UNEP, World Bank and WRI, 2005). Long-term tenure security is necessary to ensure accountability and control of forestry operations at the local level (FAO, 2005). However most poor rural people typically remain poor because their land tenure is insecure (Bruce, 2004). In addition, most current policies and legal frameworks limit access to natural resources by local people. As stressed by Hobley (2007), tenure reform has often been incomplete and restricted, with the State retaining most of the decision-making and control over high-value forests while showing clear limitations in managing them.

Although it is generally accepted that tenure security is important for the development of the forest sector, several questions remain mostly unanswered. To what extent does forest tenure influence land and resource use? Are secure tenure arrangements part of the solution for ending forest degradation and destruction, which continues at an alarming rate (FAO, 2005)? Are there alternative tenure systems to public ownership and public management of forest that can lead to better forest management and improved livelihoods? If such alternatives exist, what are the factors that can enable them to take root?

FOREST TENURE STRUCTURE IN AFRICA: STATUS AND EMERGING TRENDS

Most of the 330 million hectares of forests in Africa are publicly owned (95 percent), the majority by central governments (83 percent) (Figure 1).

The government generally retains most of the responsibility for forest management either through exclusive control of forests (16 percent) or by granting non-commercial user rights to satisfy local people's needs for forest products (61 percent) (Figure 2). User rights can



1
Forest ownership structure

include customary rights and permits or licences to hunt wildlife or gather dead wood and non-wood forest products (NWFPs). In many cases the forests are left unmanaged and uncontrolled.

There are many forms of locally based forest management, i.e. management that relies on local structures (either traditional or modern) and on local capacities and knowledge, and is therefore often able to respond better to local needs. Examples include community forestry and management by individuals or communes (townships) of forests they own.

Regionwide, local communities manage 3 percent of the forests jointly with the State and have full responsibility for 4 percent. Community-managed forests represent a significant share only in Ghana, Mozambique, South Africa and Zimbabwe.

Even though most of the forests remain State owned and managed, interesting and innovative tenure patterns are emerging in some countries.

The United Republic of Tanzania and the Gambia present two remarkable cases of effective titling (i.e. formalization or registration of a property act) of commonly owned forests. Village Land Forest Reserves and Community Forests,

respectively, share a common phased implementation approach through which the governments have granted indefinite ownership of forests to local communities (see below).

In Uganda, the Land Act of 1998 recognizes the possibility for individuals and communities to acquire titling certificates for private ownership (either by individuals or customary common tenure).

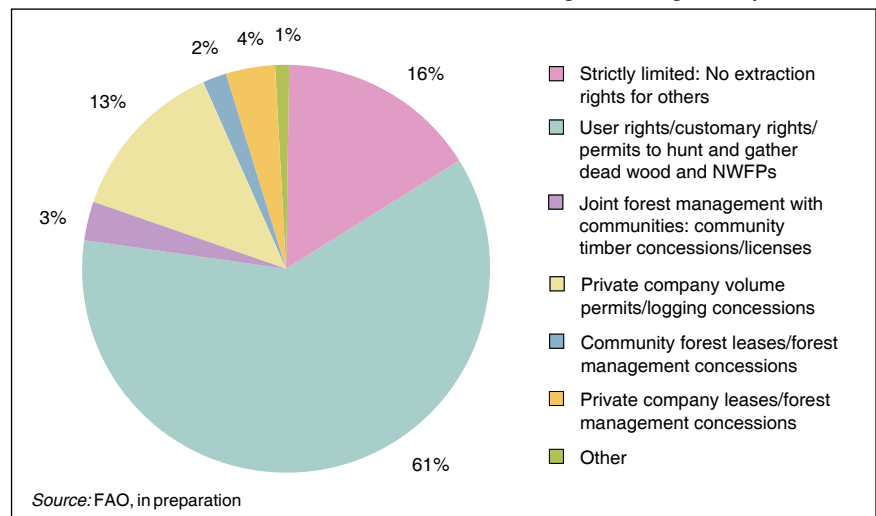
In Cameroon, the law makes it possible, upon the request of a village and its administrative representatives, for

communes to claim forests as communal lands and to acquire their ownership. This is a step towards the devolution of public forests to local authorities.

In South Africa, different but inter-linked programmes aim to reform tenure and governance in the former homelands, where land is held in trust for its occupants by the State. In 1994, the government pledged to transfer 30 percent of land owned by whites to black owners within five years. Two primary mechanisms for this transfer were put in place: restitution of land lost through racially based laws and practices, and redistribution of privately owned and public land. Alongside these programmes, the Department of Land Affairs is implementing a tenure reform programme, whose aim is to strengthen the rights of black families, groups and communities occupying land under informal systems of land tenure who have no legal status, or whose legal status is unclear.

In Mozambique, the law foresees the possibility for local communities to acquire “registered” land use rights, which are exclusive and thus empower the community to control access to the land and the resources on it. Communities receive 20 percent of the revenues collected from natural forest and wildlife exploitation and must be consulted

2
Forest management categories in public forests



before any land or resource can be granted to an outside concessionaire. The consultation process gives local communities the opportunity to negotiate benefits.

These six countries propose an alternative to State forest management based on the principle of locally based forest management. The following examples show how successful and powerful some of these changes can be, and summarize the requirements for their success or constraints that may lead to failure.

SUCCESSFUL FOREST TENURE TRANSITION: TITLING OF COMMON PROPERTY

Common property is a customary tenure system that regulates access, use and conservation of land and natural resources to communities in many African countries. Governments often face the choice of either individualizing ownership of these resources, which risks excluding the poor, or empowering communities to govern them. Because common property management is complex in comparison with individual ownership, if the State offers this option it needs to empower communities through legal provisions, institutional arrangements, capacity building for decision-making and enforcement, and recognition of indigenous systems – including customary tenure – that can contribute to sustainable use of resources (Mwangi, 2006).

Government land titling programmes do not always provide stronger security than customary laws, and may even be a source of insecurity for women and poor households which may have limited capacity to register land (Meinzen-Dick and Di Gregorio, 2004). However, at least two examples demonstrate how formalizing common property and power sharing between government forest administrations and local communities can have a positive impact on sustainable forest management: the Village Land Forest Reserves in Tanzania and community forestry in the Gambia.

Village Land Forest Reserves in Tanzania

In the United Republic of Tanzania, a village council may reserve common land as a Village Land Forest Reserve for the purpose of forest management. The village council owns and manages the trees through a village natural resource committee, other group or individual, and most of the costs and benefits of managing and utilizing the forest resources are carried by the owner (Ministry of Natural Resources and Tourism, United Republic of Tanzania, 2006). The central government has a minimal role in the management of these reserves, and district councils are responsible for their establishment and related planning, as well as for occasional monitoring of the community's implementation of the management plan. To declare a Village Land Forest Reserve, the village prepares a management plan, which must be approved by the village assembly. Villages can make bylaws to support the plan, which provide the legal basis for enforcing forest management rules. The following are some of the incentives that the Forest Act (2002) provides to encourage local communities to reserve forest resources.

- State royalties are waived on forest products from Village Land Forest Reserves, so the village can sell its products at prevailing market rates.
- Products harvested from Village Land Forest Reserves are exempt from local government taxes during transportation.
- Village Land Forest Reserves are exempt from the reserved tree species list, which entrusts the management and use of commercially important or endangered tree species on unreserved land to the district forest officer. Decisions about harvesting in Village Land Forest Reserves are transferred to the village administration.
- Any forest products harvested illegally in a Village Land Forest Re-

serve, or any equipment used to do so, may be confiscated and sold by the village council and the proceeds used to benefit the village.

As a result of these incentives, communities' interest in establishing community-based forest management is increasing. Evidence is mounting that the condition of forests is significantly improved when they are managed locally by mandated village institutions under community-based forest management arrangements.

Phased approach for community forestry in the Gambia

In the Gambia, State forests are divided into forest parks and forest reserves. A village or group of villages can become involved in community forest management by concluding an agreement with the Forestry Department over any piece of forest land that is not a forest park and that lies within the traditional lands of the village or group of villages.

The participatory forest management programme is implemented in phases. The timing for transfer to community

Community forests in the Gambia are managed based on an approved forest management plan developed by the local management committee with the help of governmental forestry field staff



PHOTOS: GROOMWELLS

ownership depends largely on the experience and readiness of the community concerned. Phased implementation is useful because it gives the partners the chance to build confidence and trust in each other.

The responsibilities transferred to the local community must be commensurate with its technical and managerial capacity to manage the forest sustainably. The process of ownership transfer must therefore include regular training sessions to build community capacity in such areas as group formation, participatory forest management planning, monitoring and evaluation, accounting, silvicultural techniques and marketing.

The management of a community forest is based on an approved forest management plan developed by the local management committee with the help of governmental forestry field staff. There are two types of plan, corresponding with the preliminary and consolidation phases of the community forestry implementation process: the three-year preliminary management plan and the five-year community forest management plan.

The Forestry Department evaluates the community's management performance before the end of the preliminary phase. If the evaluation results are positive, the final Community Forestry Management Agreement is established, which leads to the community's permanent ownership of the forest. During this three-year period, the Forestry Department provides capacity building to the local forest management committee, including training on record-keeping and book-keeping to enhance financial management by the committee.

The programme has had documented positive effects on forest cover, frequency of forest fires, gender equity, income generation through commercialization of forest products, governance, capacity building and the promotion of an integrated rural development approach (Government of the Gambia and GTZ, 2003).

In the Gambia, transfer of forest ownership to communities involves regular training sessions to build community capacity



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Common elements for success

Although different, the two processes described above share some common key elements.

- Both programmes have a phased approach. Formal recognition of ownership is the result of a long process (more than five years) which includes testing in pilot villages and monitoring of results before land titles are released.
- In both programmes capacity building is incorporated in the process.
- Mechanisms for benefit sharing constitute an incentive for titling and sustainable use of resources.

Both programmes have demonstrated a clear positive impact in terms of sustainability of forest management, improvement of forest condition, increased sense of ownership and responsibility, and reduced conflicts between government and communities. Both approaches are rooted in a process of power sharing and capacity building, rather than simply allowing communities increased access to the forest resource.

The main limitations so far have been high costs and therefore partial dependence on external funds in the case of the Gambia; and the existing poor condition of the forests devolved to community management in the United Republic of Tanzania, which has hindered the contribution to poverty alleviation.

The contribution of clear forest tenure to poverty reduction depends on the type and security of tenure arrangements. Where tenure is long-term and secure, people have the confidence and vested interest to make investments in forestry that will have positive impacts on their lives and on the resource (Alden Wily, 2001). In the Gambia, the Forest Act recognizes the communities' full ownership and rights in their traditional forest land, and the Local Government Act promotes community participation in the implementation of micro-projects and management of local resources (FAO, 2005). The FAO-supported Market Analysis and Development approach [ed. note: see p. 34] has assisted in the creation of small-scale forest-based enterprises, managed by local forest committees. Their success has been possible because of the legal and policy environment that enables local populations to manage forest lands sustainably and derive income from them.

UNREALIZED POTENTIAL: WHERE SUPPORT FOR LOCALLY BASED FOREST MANAGEMENT IS LACKING

Limited financial, technical or human capacities of stakeholders involved in tenure reform are among the most common constraints to tenure diversification and consolidation. A further general

limitation, common to many countries in Africa, is ineffective flow of information and poor communication about the reform, hampered by the use of overly complex language or inappropriate media. These constraints limit the ability of various key players to adhere to legal requirements foreseen in the reform – for example, to develop management plans, conduct forest inventories and request and register land titles.

Some potentially successful programmes such as the land titling in Uganda and the redistribution and reallocation in South Africa have been hindered by the failure of extension services and local administrations to provide the beneficiaries of the reform with adequate assistance to exercise and retain the rights, responsibilities and opportunities associated with the reform.

South Africa: inexperience and institutional conflict

The land restitution and redistribution programmes in South Africa have lagged considerably behind their targets. In most of the transfers that have taken place, the beneficiaries have been unable to establish viable enterprises or even to support themselves on the land. A lack of post-transfer support has been identified as one of the main reasons for the failure of land reform projects.

Beneficiary communities often comprise the least educated and least economically active sectors of society, and they lack experience and skills in technical aspects of production and business management. In many cases, there is a need to set up local institutions to govern community or group relations. Lack of support for building and maintaining effective local institutions is a major factor hindering the groups' ability to manage the natural resources on their newly acquired land, including forests.

In addition to limited capacities and resources, another obstacle to a successful tenure shift has been the antagonism of

In Uganda, community associations or individuals can acquire title to land, but a lack of guidelines and support has discouraged poor and marginalized people from seeking landownership certificates



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local communities towards local administrations and authorities created as part of the reform. The government created these new structures to promote democratic governance at the local level and to decentralize responsibility for administrative functions and service provision. However their creation provoked a storm of protest from traditional authorities, who feared that reformed local governance and land administration might strip them of most of their powers and privileges. The conflict between new local government structures and traditional authorities has resulted in considerable chaos regarding systems for managing and allocating land rights, setting back the implementation of the reform.

Uganda: little help for the most disadvantaged

Uganda's Land Act of 1998 allows communities to acquire land legally by forming Community Land Associations which can own the land. This provision was expected to promote responsible management of natural assets on the land, reduce degradation, promote sustainable forest management and help communities alleviate poverty. Unfortunately, no applications have been made to obtain registered landownership certificates. Impediments have included discouragement from politicians and an absence of proper guidelines for registration procedures. The lack of support has pena-

lized poorer, less educated and generally marginalized people most heavily.

SOME PRINCIPLES FOR SUCCESSFUL FOREST TENURE DIVERSIFICATION

Secure tenure has much potential to contribute to reducing forest degradation and destruction. If this potential is to be realized, governments should give far greater emphasis to supporting local users, particularly disadvantaged groups, and to providing appropriate legislation.

Experience demonstrates that security of tenure is a necessary but not sufficient condition for effective forest management. For example, where the institutional framework is weak, the devolution of forest management responsibilities to individuals or communities is bound to fail.

In many African countries, changes towards locally based forest management have had concrete results only when reform has been carried out with adequate institutional support, capacity building and timelines. The case studies summarized above illustrate how ongoing and future forest tenure reforms need to address the following priority issues.

- **Greater diversification.** State ownership and management currently dominate forest tenure. The cases from the United Republic of Tanzania and the Gambia demonstrate that a

more diversified land tenure system, including in particular locally based forest management, may be more appropriate, particularly in situations where the State has weak capacity to manage forests.

- **Clarity and security of tenure.** Regardless of the type of tenure system in place, whenever tenure rights are not secure and ambiguous situations arise, the sustainability of forest management is threatened. Clarity of tenure is a strong incentive for sustainable forest management, as it guarantees that those who have obtained rights to forest land can reap the benefits from investments made.
- **Enhanced capacity to manage forest resources sustainably.** The success of forest tenure diversification depends on the technical, administrative and managerial capacity of the different stakeholders to manage the forest resources sustainably and profitably. The granting of tenure rights and management responsibilities to households, communities, the private sector and local governments needs to be accompanied by capacity building to enable the new forest managers to exercise the rights and responsibilities acquired.
- **Appropriate process.** Tenure reform takes time. Regardless of the form of tenure selected – community forestry, individual ownership, communal ownership or private concessions – the success or failure of the reform depends on the resources allocated, including time. The cases in the Gambia and the United Republic of Tanzania demonstrate the advantages of a phased approach that takes into consideration the customary tenure system but also recognizes its limitations. The cost of testing and monitoring a new tenure system through a phased approach is high, but these steps are necessary to develop a sense of local ownership and responsibility.

CONCLUSIONS

Clear, secure and diversified forest tenure systems are fundamental to sustainable forest management and rural livelihoods based on sustainable use of forest products. However, most current policies and legal frameworks continue to limit access to forest resources.

Evidence is emerging that in many countries in Africa, tenure arrangements that provide tangible rights to local users are more conducive than full State control of forests to sustainable forest management and livelihood improvement.

A number of African countries have reformed tenure systems to support locally based forest management. Experience suggests that the process of implementing tenure reform is as important as the tenure arrangement itself. It is critical to allocate sufficient time, to identify all stakeholders involved and the steps to be taken, and to create a monitoring system that allows for “learning by doing”.

A secure and diversified tenure system that takes into account the country’s particular socio-economic context and stakeholders’ capacities, and where multiple stakeholders share responsibilities and benefits, can help to mobilize investment and ensure social as well as environmental sustainability. ♦



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Simplifying forest management planning

Many governments have put policies and laws into place to support local management of forest resources. However, experience has shown that complex requirements for the preparation of forest management plans can be a challenge to smallholders and rural communities.

In many countries, requirements for forest management plans have been developed primarily with State forests or large-scale timber concessions in mind, and tend to focus on large-scale production-oriented forest management. To prepare such plans, forest managers usually need significant technical knowledge and financial means. In many countries this type of forest management planning is also applied to small-scale and/or non-timber operations, without fundamental adaptation. Such unrealistic requirements inevitably pose a number of problems – such as high costs, delays and sometimes even halting of forestry activities, low-quality participation and overloaded extension services – to forest managers and those supporting them. They may provoke forest managers to operate outside the legal framework.

In some countries, efforts have been made to simplify the preparation of forest management plans to varying degrees. A study of forest management plans in 22 countries (FAO, 2004) examined approaches to doing this, focusing on some promising experiences. The study revealed, however, that even many of the “simplified” planning frameworks are still too complicated for small private or collective forest managers to complete without significant external professional assistance.

In simplifying the requirements, it is important to consider the four possible functions of forest management plans, as:

- a technical guide for management planning, implementation and monitoring;
- a legally required document;

- in the case of community forestry, an instrument to describe and regulate local forest governance, based on multistakeholder agreements;
- an output of an interactive learning, capacity-building and negotiation process.

Simpler forest management planning should occur in stages, with capacity of forest managers built gradually. It is not a question of simply following a checklist or a series of participatory exercises, but must include a sufficient period for internal learning, debates and negotiation. Four main stages are outlined for the forest management plan preparation process:

- development, through consensus, of local institutional structure, capacity and governance arrangements;
- development of forest management options and minimum environmental standards, local experimentation and monitoring arrangements;
- development of small-scale forest enterprise, marketing and business requirements;
- formalization and approval of forest management agreements at the local administrative level.

Policy issues that affect the preparation and

implementation of simple forest management plans include inadequate legislation, overloaded government institutions and power differences within local communities. The legal framework for simple forest management planning should be based on actual field-based practice, and should be flexible enough to accommodate local needs and diversity.

The plan preparation process itself should be used as a catalyst for facilitating capacity building, negotiation and participation in order to achieve local institutional accountability, local technical and intellectual capacity for management, economic strategies based on existing local resources, and cultural acceptance – which are all crucial for successful local forest governance.



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Some mechanisms for simplifying forest management planning

- **Allow management standards to be set and agreed by forest managers but ensure that they comply with basic environmental standards.**
- **Collect only the minimum of information needed for forest management purposes by forest managers.**
- **Develop and build on existing practices and knowledge systems.**
- **Build capacity for research and learning among forest managers rather than imposing technical prescriptions.**
- **Consider multiple-objective forest management for a range of products and services.**
- **Include aspects of market information and business planning for income generation-oriented forest management planning.**
- **Ensure that the forest management planning process includes the development of systems for accountability, representation, equity and decision-making.**
- **Build on existing institutional structures but do not reinforce inequalities.**
- **Ensure a balance between individual and collective interests.**
- **Ensure a balance between external inputs and existing local capacity.**

China's boom in household management of forests

J. Liu and J. Yuan

Through ongoing forest tenure reform, most collective forests in rural China have come under the management of individual households.



Households intercrop fast-growing trees such as *Populus sp.* with agricultural crops, and are free to harvest the trees in most cases

Rural households have an important stake in China's forests. According to Chinese legislation, land is owned by the State or by collectives. However, under a rural land use system created in the early 1980s – the household responsibility system – rights to use the land have been allocated to individual farmer households for periods of up to 30 to 70 years. Thus tens of millions of hectares of collective forests have been allocated to the management of individual households. These household forests have great importance in terms of production, protection and poverty alleviation. This article provides a historic overview of household forestry in China and outlines some recent aspects of tenure reform that have influenced it, with examples from different topographical environments.

HERITAGE OF HOUSEHOLD FORESTRY

Before 1949, most forests in China were owned by households and were managed for either commercial or subsistence production of timber, fuelwood, food

and medicines. They were also appreciated for their cultural and spiritual values. The intensively managed forests were as valuable as traditional farming systems.

The period from 1949 to the early 1980s was characterized by nationalization and collectivization. Private lands were expropriated, and within a relatively short period in the 1950s the commune movement had eliminated private landownership, including ownership of forest lands. As a consequence, there were then two kinds of forest landownership: 58 percent of forest land was owned and managed by collective farms, administrative villages or production groups, and 42 percent was owned by the State. In the 1960s, the window was opened slightly to allow households the use rights to small parcels of forest in mountainous regions, but this liberalization ended with the beginning of the Cultural Revolution in 1966.

In the early 1980s, however, China initiated rural policy reforms oriented to the free market, which strongly influenced forest tenure. Encouraged by successful

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experiences with the household responsibility system on agricultural land, the Chinese Government decided to conduct similar reforms of the collective forest tenure system. In March 1981, the “three-fix” policy (“fix forest land-ownership, fix mountain use rights, fix responsibility for forest management”) shifted the tide towards decollectivization and decentralization of forest use and management. This reform was characterized by separation of use rights from collective ownership of forest land. The government created a system involving two different tenure arrangements to allocate forest lands equally to individual households, called the “two hills” system (because the forests were frequently located in the mountains). On “self-maintenance hills” or “freehold hills” (*ziliu shan*), individual rural households were awarded the private rights to use forests for subsistence purposes. Use rights were granted for the long term, usually with no limit on the contract duration, and could be inherited. On “responsibility hills” (*zeren shan*), the use and management of collective forests were contracted to households in the village or the village production group. Contract periods ranged from 5 to 15 years in the initial phase. However, they can now be prolonged to up to 70 years under a law approved in the mid-1990s. Concomitantly with this reform, collectives came to have fewer and fewer functions in rural affairs, including forest management.

There are no official data to indicate how large an area was shifted from collective to private management under the “three-fix” policy in the 1980s, but it was certainly a large share. Lu *et al.* (2002) estimated that it was about 69 percent of collective forests. Li (1996) estimated that by 1984, 1 781 counties had completed compliance with the “three fix” policy. A total of 99.7 million hectares of forest land were titled to collective ownership, while 31.3 million hectares of forests were titled to private manage-

ment by 57 million rural households. In Jiangxi Province, it was reported that by 1986, 92 percent of collective forests had come under the management of individual households through the “three-fix” policy (Liu, 2006).

In some regions of southwestern China, for example Yunnan Province (Zheng, 2006), the “two hill” system was modified around 1990 to include a third “hill”, involving further devolution of forest land owned by collectives and State farms to individual households by contracts granted through market mechanisms, such as bidding (“contract hills”). The contract duration varied from several to 70 years. Benefit sharing arrangements also varied.

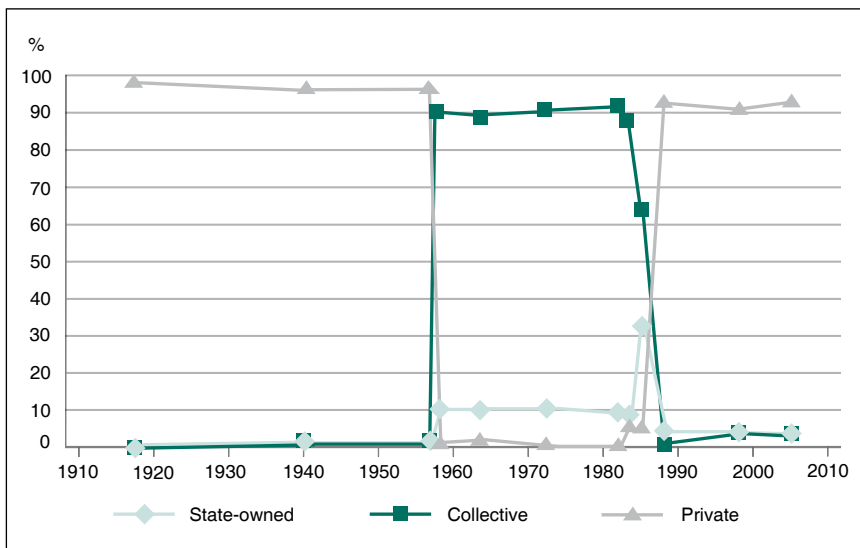
Many observers felt, however, that in its early phases the household responsibility system did not benefit China’s forestry as effectively as it did agriculture. Implementation of the “three-fix” policy was followed by vast cutting of collective forests in the mid-1980s (Liu, 2006). This was interpreted in different ways. Some academics attributed it to soaring demand for housing construction materials in rural areas following rapid rural economic development; some believed that rural farmers doubted the stability of the policy and therefore opted for quick economic returns through logging; and some ascribed it to fragmentation of forest land. Each household owned very small forests of a few hectares, usually fragmented; for instance in Liuyang County of Hunan Province, forest holdings averaged about 1 ha divided in six separate pieces. Fragmented forest lands are difficult and economically inefficient to manage.

In a few areas, the disappointment with the household responsibility system was so great that forests under individual households were returned again to collective management. In Jiangxi Province, over 92 percent of the collective forest land was under household management in 1986, falling to about 60 percent in 2000.

The development of family forests in China has faced a number of constraints, in particular insecurity of use rights. In forest areas covered by large central government programmes such as the Natural Forest Protection Programme, rural farmers are hardly permitted to harvest trees, even mature planted trees. High transaction costs and complicated documentation requirements put rural small-scale foresters at a disadvantage in the application of harvesting quotas. High taxation and other charges such as afforestation funds and forest fire protection fees deter farmers’ interest in forest management.

However, a new phase of forest tenure reform has been implemented in the past few years, extending household responsibility schemes in collective forests, expanding individual households’ rights to use forest land and making their tenure more solid. New strategies to protect rights to household forests now being piloted include small-scale foresters’ associations, shareholder forest farms, company/household partnerships and more appropriate financial and fiscal policy.

New policies, which vary by region, support transfer of ownership or sale of collective forests and safeguard private individuals’ economic return from forests, for example by promoting more transparent fee collection, favouring marketing development or lowering tax rates and charges. For instance, in Jiangxi Province charges have been reduced from around 50 percent of the value of logs produced to about 24 percent since collective forest tenure reform in 2004. Longer contracts are now given, up to 70 years. Under the strong promotion and leadership of the State Forestry Administration, tenure reform is expected to be implemented in every province in China, regardless of its share in production. Better linkages between forest policies and forest management are expected to improve the efficiency of forest management, rural livelihoods and environmental sustainability.



**Trends in forest use rights,
Jinzhou County, Hunan
Province, China**

HOUSEHOLD FORESTS IN HILLY REGIONS – THE CASE OF JINZHOU COUNTY, HUNAN

Jinzhou County, located on the south-western border of Hunan Province, is a key forest region and important timber production county, with 78 percent forest cover. Almost three-quarters of the population of 255 000 are ethnic minorities. In 2005, forestry accounted for 23 percent of total production value in the county, 60 percent of farmers' income and 20 percent of government revenue collected.

Forest property rights have shifted over time with political and social changes (see Figure). Since the late 1980s more than 90 percent of forests in Jinzhou County have been under private management, mostly by households through the following arrangements.

- Small household forests managed as part of family livelihoods accounted for about 50 percent (107 000 ha) of the total forests in the county in 2005 (see Box).
- Joint forest farms (shareholds) are created at the level of administrative or natural villages. Each household owns a share of the farm proportional to the household's capital invest-

ment, forest land and labour. The farm is governed by a directorate, supervisory board and leader group which establish rules and regulations. These three groups are responsible for decision-making, operations and distribution, and specific management and supervision of finance, respectively. In 2000, the county had 162 joint forest farms covering 52 400 ha, or 30 percent of the total forest land in the county. These farms involved almost 12 000 households, or 30 percent of the total households in the county.

- In another type of arrangement, one or several households contract a fairly

large piece of land (from tens to hundreds of hectares) from a collective or State forest farm for 30 to 50 years and plant it with fast-growing trees, e.g. Chinese fir. Lands afforested in this way include barren hills and harvested forest lands. The planting is usually carried out using paid labour.

The remaining forests in Jinzhou County are managed by the Village Committee, collective forest farms, State forest farms and private companies.

HOUSEHOLD FORESTS IN PLAINS REGIONS – THE CASE OF MINQUAN COUNTY, HENAN

Minquan County, located in the eastern part of Henan Province, is a typical county of the plains covering 120 000 ha with a population of 848 000.

Sixty years ago, forest cover was about 3 percent; moving sand dunes, sandstorms with strong winds, saline and alkaline land, drought and floods created difficult living conditions and kept grain production low and unstable. Fuelwood and timber were short. Environmental degradation and poverty went hand in hand.

This situation was reversed through shelterbelt planting, roadside and riverside greening, intercropping and agroforestry, which created a sound environment for farming and also helped provide income for farmers. By 2005, forest cover was 27.6 percent, trees numbered

A forest smallholder

Li Kaiyou is head of a five-person family from Dakai village. He has 0.6 ha of arable land and 3.7 ha of forest land.

In 2002, he sold 0.67 ha of mature planted Chinese fir (*Cunninghamia lanceolata*) at a price of 12 000 yuan (about US\$1 450). After harvesting, he regained the use rights and planted Chinese fir again in 2003.

In 1987, he rented out about 1 ha of forest land to a household from his village and reclaimed it back in 2003 after it was harvested.

He has another piece of forest of 0.5 ha planted with Chinese fir. At 14 years the trees are 7 m tall and 12 to 14 cm in diameter.

The largest piece of his forest, 1.7 ha, is covered by natural secondary mixed forests. He thinks it is a waste, as broadleaf trees provide less economic return.



Shelterbelt planting is a typical farm forest model in the plains area; trees are managed under a variety of individual and cooperative arrangements

Farm forest models and forest tenure arrangements in Minquan County

Land type	Farm forest model	Key species	Land use right	Tree ownership
Sandy land	Woodlots Intercropping	<i>Paulownia, Populus</i>	Collective or State	Contractor, State or collective
Saline and alkaline land	Forest fishery Shelterbelts	<i>Salix</i>	Collective or State	Contractor, State or collective
Along canals and watercourses	Shelterbelts	<i>Salix, Populus</i>	Collective	Collective or household
Farmland	Intercropping Shelterbelts	<i>Paulownia, Populus, fruit-tree species</i>	Household	Household
Abandoned land	Woodlots	<i>Populus, Acacia</i>	State or Collective	Contractor, State or collective
Around villages	Woodlots	<i>Paulownia, Populus, Salix, Acacia</i>	Collective or household	Household
Around residences	Home gardens Woodlots	<i>Paulownia, Populus, Acacia</i>	Household	Household

45 million and timber stocking volume was 2.8 million cubic meters. The annual timber harvest is about 150 000 m³, which is similar to the harvest of forest-rich counties in southern China. Minquan County has become a timber supplier to other regions.

Households have played a large part in this success story, by planting trees which they manage and own on farmland and around residences. Farmers are free to harvest trees in most cases. They prefer to plant fast-growing trees such as *Populus* and *Paulownia* species. Trees and forests are managed under a variety of individual and cooperative arrangements (see Table) (Zhu, 1997).

ISSUES TO BE ADDRESSED

The proportion of forests under household management in China is among

the highest in the world. Household forestry faces a number of institutional challenges:

- lack of legislative and policy framework to support development of household forests, as many elements of Chinese forestry legislation were oriented towards managing forests on a large scale;
- forestry administration targeting forests more than households, with limited opportunity for household participation;
- inflexible legislation and policy which cannot adapt well to the diversity and rapid social transformation in China.

In the long term, debate will continue on how to improve the efficiency of household forests. China is such a large country that poor performance of house-

hold forests has global impacts on forest trade, environment and equitable development. In light of increasing demands on production forests, China may need to give further consideration to reform of institutional arrangements to favour the development of family forests, for example by developing small foresters' associations and providing more adequate training on marketing and technical skills for small foresters. If reform goes in the opposite direction, it could mean a decline of household forests. ♦



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Private forest ownership in Europe

F. Hirsch, A. Korotkov and M. Wilnhammer

In Europe, private forest owners have a crucial role in achieving sustainable forest management, in sustaining the productivity of forests and in satisfying the increasing demand for wood resources from wood processing manufacturers and bioenergy producers. An enquiry on private forest ownership conducted in 2006/2007 by the Timber Section of the United Nations Economic Commission for Europe (UNECE) and FAO, in cooperation with the Ministerial Conference on the Protection of Forests in Europe (MCPFE) and the Confederation of European Private Forest Owners (CEPF), confirms the significance of private forestry across Europe.

A questionnaire was addressed to 38 European countries that are members of MCPFE and have recorded private forest area. Twenty-three countries submitted data, mostly for 2005: Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Finland, France, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, the Netherlands, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, Sweden, Switzerland and the United Kingdom. The lack of response from some countries, particularly in southern Europe and the Balkan countries, may be explained by

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The private forest ownership database and more detailed information on the enquiry are available on the Web site of the UNECE/FAO Timber Section: www.unece.org/trade/timber

an insufficient capacity to report or to collect the requested data. The relative youth of the private forest sector in some countries with economies in transition may also have played a part.

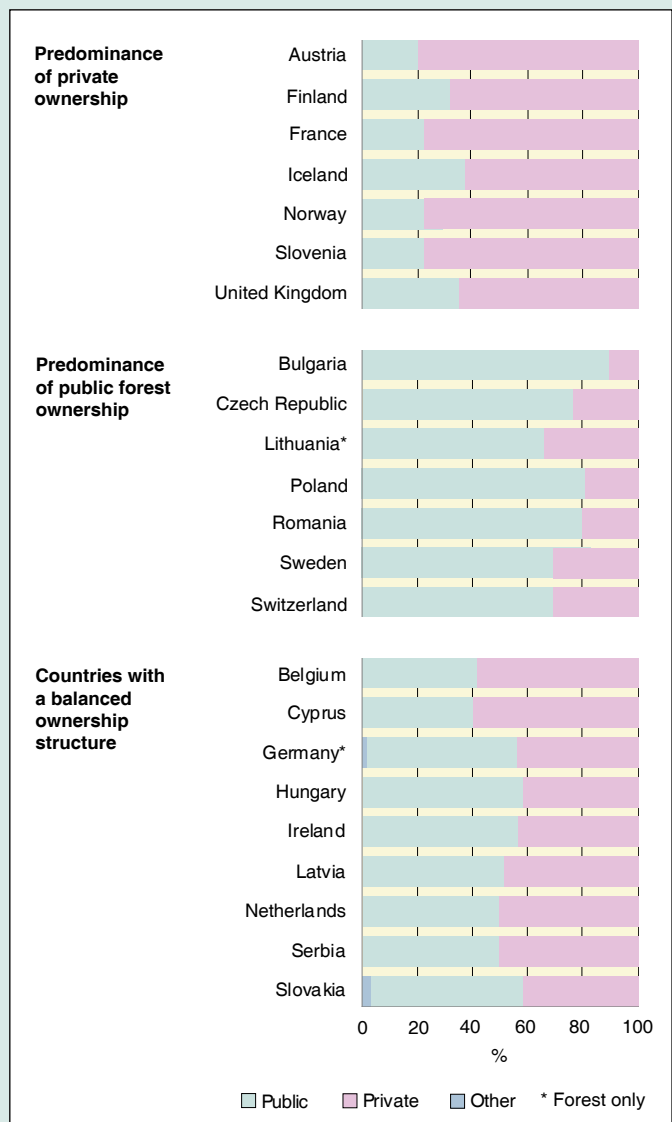
Balanced overall ownership structure, but large differences among countries

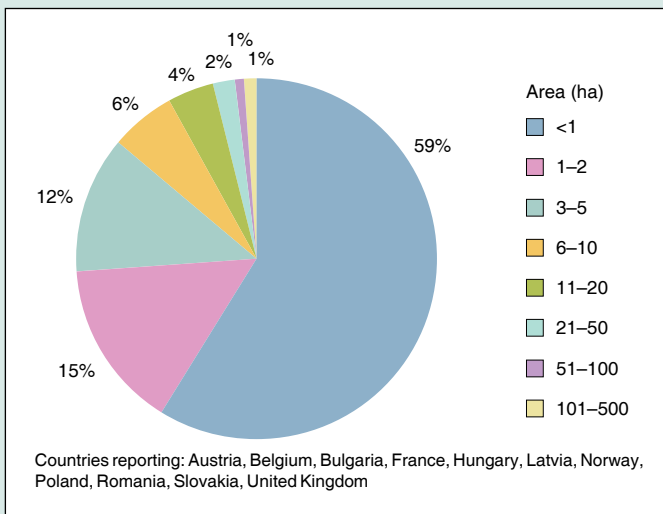
The reported results reveal an overall balance between public and private ownership: 49.6 percent of forest and other wooded land is privately owned, and 50.1 percent publicly. Other ownership, classified as neither public nor private, amounts to less than 0.4 percent. This includes, for example, German forest

expropriated within the scope of land reform in the former German Democratic Republic and now either privatized or about to be privatized.

However, the ownership structure varies greatly among countries (Figure 1). In Austria, France, Norway and Slovenia, privately owned forests account for more than three-quarters of the total forest area, whereas in Bulgaria, the Czech Republic, Romania and Poland they represent less than one-quarter. Several countries are characterized by a relatively balanced forest ownership structure, including some in Central and Eastern Europe (Figure 1).

1
Ownership structure of forest and other wooded land



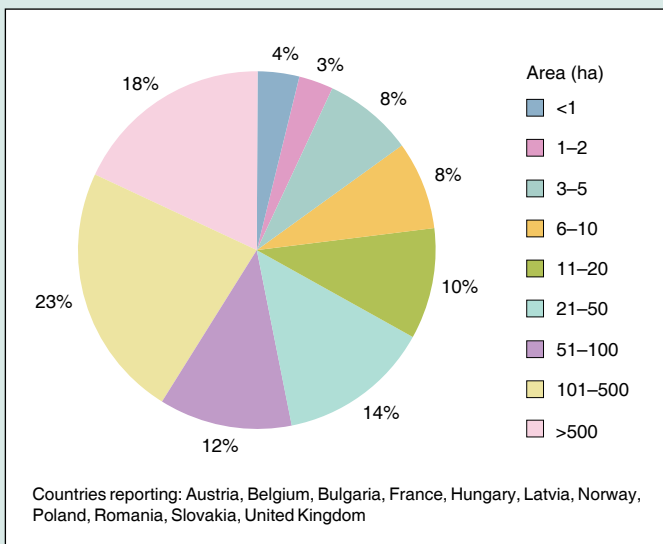


2
Share of size classes as percentage of total number of private holdings

Private ownership mostly by individuals, public by the State

More than 80 percent of private forest in Europe is held by individuals or families, followed by private institutions and forest industries. In the 11 countries that provided data on these subcategories, public forest is predominantly owned by the State; 13 percent of public forest is owned by cities, townships (communes) or municipalities and merely 1 percent by provincial governments (Figure 4).

However, the ownership structure varies significantly among countries, so it is difficult to draw general conclusions. In Finland, for example, more than two-thirds of forests are privately owned (56 percent by families, 12 percent by forest industries and private institutions), 30 percent by the State. In France, on the contrary, more public forest area is under communal than State ownership. In the Czech Republic, public ownership has declined significantly since the beginning of the 1990s, but most forested land is still owned by the State (61 percent) and communes (15



3
Share of size classes as percentage of total area of private holdings

A further point of variation is that in some countries privately owned forests are to a great extent owned by large companies, whereas in others, they are mainly owned by individuals.

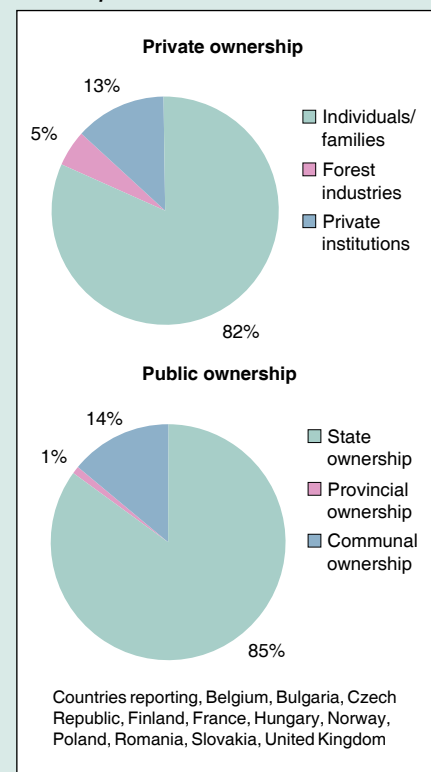
Increasing number of smallholdings in Central and Eastern Europe

Significant shifts in ownership have taken place in the formerly centrally planned economies during the past 15 years. In most Central and Eastern European countries, land restitution and privatization is nearing completion, but future changes in ownership patterns are still expected in some countries, notably Romania, Slovakia and Serbia.

In some Central and Eastern European countries the number of smallholdings has increased as a result of restitution and privatization. Holdings smaller than 6 ha represent 70 percent of the total area of private holdings in Poland and 40 percent in Slovenia, but only 5 percent in Hungary, where holdings larger than 100 ha represent over 45 percent.

At the overall European level, the number of smallholdings is vast. In number, almost three-quarters of all private holdings are less than 3 ha (Figure 2). At the same time, holdings smaller than 3 ha account for only 7 percent of the area of privately held forest in the 11 countries that reported these data (Figure 3).

4 Aggregate structure of private and public ownership



percent). The ongoing restitution and privatization has primarily increased the number of individuals and families owning private forest land (23 percent).

Socio-economic observations: ageing, urbanization and gender

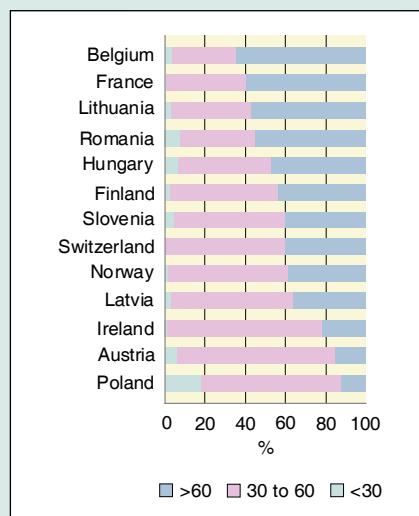
As privatization of forests continues to increase, urbanization and ageing of forest owners can be expected to continue to have an impact on forest management in Europe.

Few European private forest owners are under 30 years of age, and in many countries a large proportion is over 60 (Figure 5). As a result, in the near future many forest holdings will be inherited by new owners whose attitude and motivation towards forestry is uncertain.

Austria, Finland, Iceland, Norway, Poland and Sweden reported an increasing number of urban owners, whereas the Czech Republic and France reported no changes in ownership. A large share of individual owners is occupied outside the traditional agriculture/forestry sector (Figure 6), which may affect owners' knowledge of and attitudes towards forest management.

The majority of private forest owners are male; the proportion of women varies among countries from 20 to 40 percent (Figure 7).

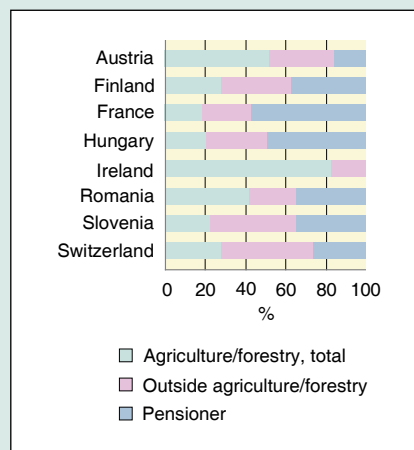
5 Age of individual private forest owners



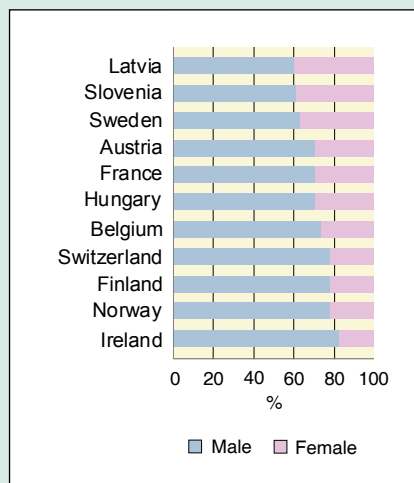
Policy implications of fragmented ownership

Twelve countries reported that the fragmentation of private holdings represents a hindrance to sustainable forest management. Small-scale owners may find it more difficult to draw profits than larger entities, and transfer of knowledge and access to infrastructure can be complicated when owners are many. Local and regional cooperation among owners is thus crucial. The enquiry revealed that membership in national associations and the proportion of organized owners differ substantially among countries.

6 Occupation of individual private forest owners



7 Gender of private forest owners



A workshop on "Mobilizing Wood Resources", organized in January 2007 by the UNECE/FAO Timber Section and partners (see www.unece.org/trade/timber/workshops/2007/wmw/recomm.htm) recommended facilitating cooperation of forest owners and servicing of professional units. Governments, academic institutions and professional bodies should provide information and educational programming to help forest owners take sound decisions about forest management. Enhanced capacity building among owners would benefit both public and private ownership structures.

Further information needs for adequate policy-making

The UNECE/FAO study contributes to improving information on private forest ownership in Europe, in particular with regard to the restitution and privatization processes in Central and Eastern Europe. Nevertheless, the level of information on some aspects of private forestry remains low, notably on the number of smallholdings, the different private ownership categories, the social background of individual owners and the objectives of ownership. Further improvements in the information base are essential for appropriate policy decisions.

The continuing urbanization and ageing of owners, the increasing number of smallholdings and the resulting fragmentation of ownership are trends that potentially affect the whole private forest sector and must be considered in policy development and application. Owning approximately half of Europe's forested area, private forest owners can make an important contribution to promoting the sustainable management of the region's forests and sustaining their productivity.

Connecting small enterprises in ways that enhance the lives of forest-dependent people

D.J. Macqueen

Some recommendations for how to connect small forest enterprises, not only to each other through associations, but also more broadly – to decision-makers, service providers and markets.

Forest enterprise has been extensively examined as a means of alleviating the widespread poverty among forest-dependent people. When poverty alleviation is considered solely in terms of income generation, small forest enterprises may or may not compare favourably with larger enterprises. However, when broader dimensions of well-being are considered, small forest enterprises are seen to have a vital role in enhancing the quality of life of forest-dependent people and lifting them out of poverty. Beyond basic health and subsistence, these broader dimensions of human value include security and freedom from oppression; decent, creative and fulfilling work; social relationships and networks; appreciation and management of a beautiful environment; and identity, faith and culture. A large body of international law supports these values by according them the status of legal rights (Macqueen, 2007) – for example, the rights to life, liberty and physical integrity of the person, to food, to justice or to a clean environment [ed. note: see related piece on p. 31].

Much is known about the circumstances under which small forest enterprises flourish and help to reduce poverty (Arnold, 2006), for example when:

- general macro-economic conditions and income levels rise such that consumers shift from gathering to buying a product;
- products can be tailored to specific markets in ways that are difficult for mass-produced goods;
- the small scale of the production process does not create significant economic disadvantages;

- the production process can be made more efficient economically as competition increases;
- parts of a larger production process can be carried out efficiently by outsourcing to small forest enterprises.

Yet despite their potential to improve quality of life and reduce poverty, small forest enterprises still face difficulties that may prevent them from doing so. Business deficiencies are often exacerbated by isolation from market information and financial and business development services and by policies biased against small-scale actors. A study in 27 countries suggested that these difficulties are linked by four underlying problems (Macqueen, Barrance and Holt, 2001):

- lack of representation of the poor and their enterprises in policy- and decision-making;
- inappropriate laws, policies and practices that result;
- locally weak institutions that lack sufficient clout to influence these;
- isolation of the poor from supportive infrastructure and services.

If one had to summarize these problems in a few words, it might be “being unconnected”. This problem is most acute in least developed countries where government resources do not provide the infrastructure, information technology or networking opportunities for forest-dependent people and their enterprises to flourish. To address poverty for forest-dependent people means to connect them – but how and to whom?

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A small enterprise making beehives for the local market, Ghana: small forest enterprises can be isolated from supportive infrastructure and services

CONNECTING WITH OTHER ENTERPRISES – THE ROLE OF ASSOCIATIONS

Small entrepreneurs in the forest sector often sense a need to connect with one another. They work together to strengthen their political voice and their bargaining power in the market – collectives being much harder to ignore or mistreat than individuals. Associations help small enterprises adapt to new market opportunities and reduce their transaction costs (Macqueen *et al.*, 2006). In Uganda alone, there are estimated to be 2 000 to 3 000 forest-based associations (Kazooru *et al.*, 2006).

How small-enterprise associations contribute to quality of life: some examples and possible pitfalls

Fostering local entrepreneurship.

Joint investment through associations can provide employment opportunities, build entrepreneurial capacity and protect labour. In Brazil, for example, the Cooperativa de Produção Agropecuária e Extrativista dos Municípios de Epitaciolândia e Brasiléia established a Brazil nut processing plant which is now investing in processing different products, including animal feed from the shells. The cooperative also plans to launch a new line of rubber products and to process the pulp of a local palm fruit (Campos, Francis and Merry, 2005). In India, the

Gujarat Timber Merchants' association has fought the closure of small sawmills threatened as a result of strong conservation legislation (Bose *et al.*, 2006).

Basic salaries and worker health and safety, however, are often worse in small forest enterprises than in larger ones (May, Da Vinha and Macqueen, 2003; ILO, 2001). Overcoming competitive pressure, inefficiencies of scale, inadequate access to capital and disabling policy environments in order to reverse that trend is a major challenge for associations.

Providing local income opportunities and developing community services.

Associations provide income and services to the community either directly or through the accrual of wealth that is spent locally. For example, in South Africa, the Kwangwanase Association of small timber growers hires a truck at harvest time to reduce members' transport costs and improve their income (Bukula and Memani, 2006). Associations, more than individual enterprises, often contribute to developing social services. In India, the Harda District Timber Merchant Association collects money and makes loans to particularly needy members who have suffered losses beyond their control (Bose *et al.*, 2006).

There is the perennial danger, how-

ever, that costs of membership may outweigh perceived benefits or that lack of financial transparency may erode trust in association leadership, as occurred in the Amerindian Handicrafts Association in Guyana (Ousman, Macqueen and Robert, 2006).

Building systems of local environmental management and accountability.

Associations of indigenous peoples in the southern states of Mexico, angered about the degradation of their forests by external concessionaires, fought a successful campaign to wrest environmental control away from outsiders into local hands (SEMARNAP, 2000). As a result, 80 percent of Mexico's forests are now owned under a social tenure system with around 8 500 agrarian nuclei inhabited by an estimated 12 to 15 million people and 43 indigenous groups. Some 2 500 of these nuclei have forestry permits and 46 communally managed Forest Stewardship Council (FSC) certified operations now cover more than 800 000 ha, helping to pioneer not only certification, but a model that is built around community management.

Forest enterprise associations do not always work towards greater local environmental awareness and accountability, however. For example, the Board of Directors of the Association of Rural Workers in the Boa Esperança/Entre Rio settlement in Brazil became embroiled in illegal sale of land plots and timber (Figueiredo, Porro and Pereira, 2006).

Underwriting local social networks that reduce isolation.

The Federation of Rajasthan Handicraft Producers in India has instituted awards for outstanding handicraft producers. It organizes an annual symposium to share designs and runs seminars on trends in home furnishing, visual merchandising and export promotion. Leading members are selected to participate in European trade fairs (Bose *et al.*, 2006).

Yet in some circumstances associations

may fail to enhance social networks, especially if they have been established for some ulterior motive. For example, many associations were formed in Para, Brazil solely to take advantage of a government credit programme. While they achieved this aim, they did little to further social networking and reduce the isolation of their members (Campos, Francis and Merry, 2005).

Reducing tensions that arise from external interference in local resource use.

Associations often help to shape an enabling environment that creates more equitable opportunity for small forest enterprises. This in turn reduces tensions and conflicts that arise from inequitable systems of forest resource use. For example, the Uganda Wood Farmer's Association was formed specifically to sue the Uganda Investment Authority for creating an industrial park on land where trees were planted and managed by farmers. The presiding judge ruled in favour of the farmers and granted compensation equivalent to four tree rotations (Kazoora *et al.*, 2006). Members of the Guyana Manufacturers and Services Association are lobbying for a new land-use strategy based on small forest enterprises that could increase forest revenues and employment without compromising sustainability (Mendes and Macqueen, 2006).

Inevitably, there are also many examples where association management is at the root of conflicts, even in successful associations. For example, the Saharanpur Wood Carving Association in Uttar Pradesh, India successfully campaigned for changes in tax incentives and export policies over a period of 40 years, but disputes among the office holders in 2004 caused the president to leave and establish the Saharanpur Wood Carving Manufacturers and Exporters Association, which is now a direct competitor (Bose *et al.*, 2006). While competition can be healthy, lasting social tensions can result if such splits are not carefully handled.

Enhancing cultural values and recognition and voice for ethnic minorities. In Guyana, the Makushi identified their culture of sustainable interaction with surrounding forest resources as a key asset within their communities (Ousman, Macqueen and Robert, 2006). The North Rupununi District Development Board, an umbrella association of local Makushi communities, helps to develop tourism enterprises and promotes local language, dance and weaving. It also supports and guides the Makushi Yemkun Cooperative, a community forestry cooperative group that operates in line with Makushi decision-making structures.

Customary approaches that champion particular cultural values may not be entirely egalitarian, however. Ethnic communities are often highly differentiated, and customary (and often male) élites circumscribed by traditional systems of rules (such as the *adat* system in Indonesia) often capture the benefits of community enterprises based on local forest resources (Hobley, 2007).

CHALLENGES OF GETTING CONNECTED MORE BROADLY

Despite the substantial gains that can be made by connecting to one another in forest enterprise associations, many small forest enterprises fail even when they have such support. Common problems include excessive State bureau-

cracy, unstable national policies and regulations, insecure tenure, inaccessible credit, poor market information, inadequate technology, poor infrastructure, lack of bargaining power and insufficient business expertise – many aspects of being unconnected at a broader level. Community forest enterprises often have problems of connecting to markets and to the bureaucratic processes that govern legal operation (Molnar *et al.*, 2006) as well as to potential business development or financial service providers (Donovan *et al.*, 2006).

There are a number of key functions that any small or medium-sized forest enterprise needs to develop (see Figure). These include:

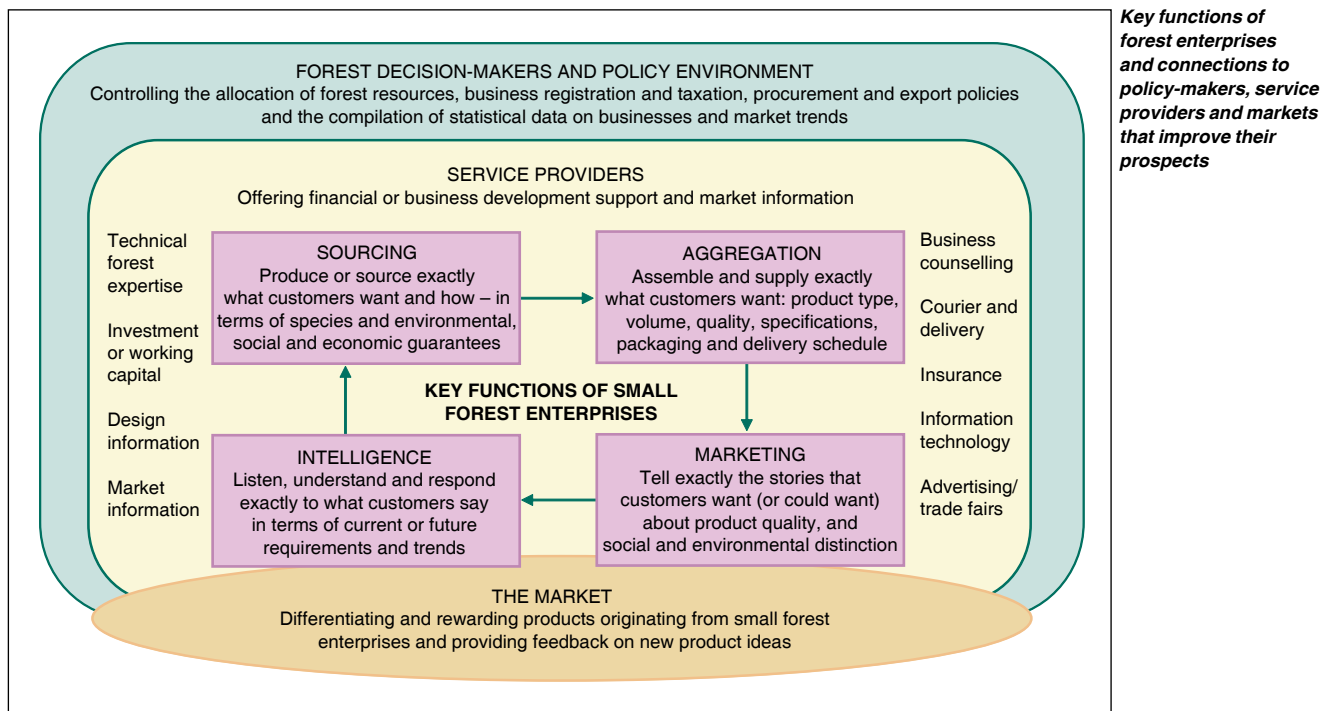
- production or sourcing of raw materials (timber, non-wood forest products and other inputs) in ways that satisfy customers' social or environmental concerns;
- administration and management of the assembly, processing and delivery of products to the volumes, quality standards, packaging requirements and time frames specified by the customers;
- marketing to prospective customers;
- market intelligence that informs future product innovation and development.

It is impossible to develop these functions in isolation. Small forest enterprises and their associations need to be

Stored timber from a small enterprise awaiting market, Mozambique: getting connected at a broader level means improved access to tenure, credit, market information, technology, infrastructure, bargaining power and business expertise



D. MACQUEEN



better connected in the three domains depicted in the Figure:

- to decision-makers that allocate forest resources, control business registration and taxation, control procurement and export policies and compile statistical data on businesses and market trends;
- to technical forest management specialists, more generic business and financial service providers, and designers and market information service providers;
- to market mechanisms that reward products originating from responsible small forest enterprises, market venues where likely customers will see their products or promotional materials, and customers who give regular feedback on new product ideas.

SOME RECOMMENDATIONS

In conclusion, small forest enterprises and their associations can help to enhance quality of life – but to do so they need to be better connected to each other, to decision-makers, to service providers

and to markets. Three general needs stand out:

- **Better representation for small forest enterprises in decision-making.** The fact that small forest enterprises are the norm in most countries is often not reflected in rules and policies that favour large enterprises. If governments are serious about poverty reduction, they must allow small forest enterprises to exist legally, grant them secure tenure and access to forest resources and tax them fairly (White, Kozak and Liddle, 2007). They need to make rules governing association easy to follow. They also need to collate better information on small forest enterprises as a basis for future interventions.
- **Stronger networks that link small forest enterprises with financial and business development services.** Networks that connect small forest enterprises and their associations to financial and business development services are crucial. There are many good examples of such support

networks – for example, the Business Service Providers in Cameroon (Spik, 2006) and the Servicio Forestal Amazonico in Ecuador (Romero, 2006). Finding innovative ways to make such networks functional and sustainable is an area that needs further attention and is currently being addressed in a joint IIED/FAO project called Forest Connect (see www.iied.org/NR/forestry/projects/forestconnect.html).

- **Ways of distinguishing, and increasing the returns from, responsible small forest enterprises in the market.** New initiatives are needed to build market access for small forest enterprises. Ongoing research suggests that there is substantial industrial demand for a mechanism to distinguish community forest products in the market. A product-specific label for fair trade timber or a community label from a major certification scheme would be required to reward such preferential sourcing in the marketplace (Macqueen, Dufey and Patel, 2006). ♦



FSC-certified Amazonian community timber sold in a do-it-yourself store in São Paulo, Brazil: one way to distinguish responsible small forest enterprises in the market and increase returns



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The right to food and access to forest resources

The Universal Declaration of Human Rights, proclaimed by the United Nations almost 60 years ago (1948), recognizes every human being's fundamental right to food: "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food..." With the entry into force of the International Covenant on Economic, Social and Cultural Rights (ICESCR) in 1976, the realization of the right to food became a legal obligation for the 156 ratifying countries. Yet more than 850 million people are still deprived of enough food.

On 16 October 2007, FAO celebrates World Food Day with the theme "The Right to Food". FAO works with governments and communities worldwide to ensure this basic human right. In order to achieve the World Food Summit objective and the first Millennium Development Goal of reducing hunger by half by 2015, efforts are needed to give a voice to the hungry and to strengthen governments' capacity to meet their obligations to respect, protect and fulfil this right.

The Council of FAO adopted the Right to Food Guidelines in 2004, outlining specific actions to help member countries realize the right to food. Through its Right to Food Unit, FAO informs, trains and builds capacity to help member countries incorporate the Right to Food Guidelines into policies and legislation and to adopt rights-based food security strategies. The Right to Food Guidelines focus on the needs of the most vulnerable, without discrimination based on tribe, caste, gender, disability or disease.

The right to food is the right of access to the resources necessary to feed oneself with dignity. States are legally obliged to enable their populations to feed themselves. Rather than implying regular handouts, this means that States must allow every person access to resources for producing food, or enable them to engage in income generation activities so they can purchase food. For forest communities, this may entail regularizing forest access with legally binding tenure.

States can empower forest-dwelling communities to realize their right to food by improving skills of local communities to harvest wood and non-wood forest products (including forest foods) sustainably and to process and conserve them efficiently. Improving roads to regional and urban markets increases marketability and value of forest products.

The right to maintain one's traditional diet must not be discounted. Where forest dwellers are deprived of forest access, in right to food terms they must be compensated to be able to feed themselves and their families. A rights-based participatory approach to forest management leads every stakeholder to monitor resource use not only to claim his or her rightful share, but also to ensure the future of the resource.

World Food Day activities promoting the Right to Food theme include the twenty-seventh World Food Day ceremony at FAO headquarters on 16 October and a Run-for-Food race on 21 October in Rome, a TeleConference in Washington, DC and a special ceremony on 18 October at United Nations headquarters in New York, United States, and country-level activities including musical and sports events.

For more information, see www.fao.org/righttofood or write to: righttofood@fao.org



Village Tree Enterprise in Burkina Faso – supporting development of small enterprises based on non-wood forest products

T. Hill, Y. Ouedraogo and L. Conditamde

A review of outcomes, two years into an initiative to build the capacity of poor rural households in Burkina Faso to generate income from tree products.

Non-wood forest products (NWFPs) are an important part of traditional livelihoods and culture in the West African Sahel and remain popular not only with rural people, but also with recently urbanized populations. Villagers generally have free access to communal forest resources. NWFPs are already an important source of income for rural households – especially for women, as NWFP harvesting and marketing is a traditional preserve of women in Africa. Although official statistics are rare, informal evidence indicates that trade in NWFPs has grown in recent years, both domestically and internationally.

Yet isolation from marketing opportu-

nities remains a familiar characteristic of rural livelihoods in the Sahel. TREE AID, a non-governmental organization (NGO) based in the United Kingdom, has developed a series of initiatives to help rural populations in the region take fuller advantage of opportunities for commercial trade in tree and forest products. This article focuses on the Village Tree Enterprise project in Burkina Faso.

VILLAGE TREE ENTERPRISE PROJECT

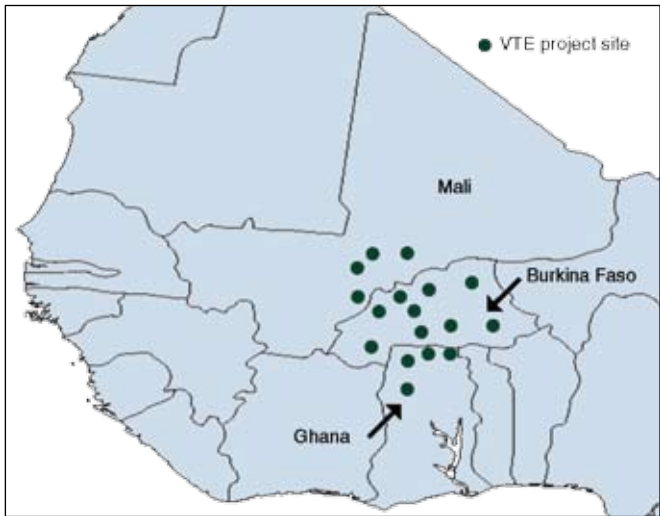
In January 2005, various departments of the Burkina Faso Government, local

Selling dried baobab leaves and other forest-derived condiments in Fada market, Burkina Faso



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1
Village Tree Enterprise project sites

NGOs, TREE AID and FAO joined forces to launch a pilot project for the promotion of small business development based on tree and forest products: Village Tree Enterprise. The pilot project adopted a Market Analysis and Development (MA&D) approach (see Box, p. 34) to entrepreneurial organization and capacity building at the village level to improve local processing and marketing of NWFPs. A baseline survey carried out at the project's start showed that 13 percent of total household income in the project area came from tree products.

To ensure the project's policy impact and the replicability and sustainability of support for village tree enterprises, the project brought together NGO and government field staff; they were trained side by side in the MA&D approach and paired up in the field to implement the approach at village level.

Initially the project began work in 29 villages in eight sites in Burkina Faso, plus another six villages just over the border in Mali. In April 2005 TREE AID secured a grant to continue this work and expand it over five years to cover 50 villages in Burkina Faso and 20 in Mali. Additional funding obtained through the European Commission's Tropical Forests Programme has made it possible to expand the initiative further in both countries. A parallel initiative was

created in northern Ghana in late 2006. The Village Tree Enterprise initiative will soon be running in 172 villages at 17 sites (Figure 1).

PROGRESS IN BURKINA FASO

The MA&D process has been completed in 28 villages in Burkina Faso. By the end of the first phase, villagers had come up with a short list of 41 tree products with marketing potential. By the end of the process 164 tree product interest groups had emerged, with a total membership of 1 735. Each of these groups has produced an Enterprise Development Plan. In all, the plans are based on 17 different NWFPs derived from nine tree species plus various flowering plant species (Table). The aggregated income forecast in the 164 Enterprise Development Plans is more than US\$1.5 million. While it is important to stress that this figure represents potential turnover rather than realized profit, it is indicative of the relative value of NWFP markets to households with

Forest products targeted in Enterprise Development Plans

Species	Product	No. of plans based on this product	Commercial potential		
			Local	National	International
<i>Vitellaria paradoxa</i>	Unprocessed shea nuts	35	✓	✓	✓
<i>Vitellaria paradoxa</i>	Processed shea butter	23	✓	✓	
<i>Adansonia digitata</i>	Edible leaves	23	✓	✓	
<i>Tamarindus indica</i>	Fruit, mostly for juice	14	✓	✓	✓
<i>Parkia biglobosa</i>	Unprocessed seeds	13	✓	✓	
<i>Parkia biglobosa</i>	Soumbala' condiment from fermented seeds	13	✓	✓	✓
<i>Parkia biglobosa</i>	Honey (raw)	10	✓	✓	
<i>Balanites aegyptiaca</i>	Soap, produced with oil from seeds	6	✓	✓	
<i>Tamarindus indica</i>	Edible leaves (dried)	6	✓		
<i>Acacia macrostachya</i>	Edible seeds	6	✓	✓	
<i>Adansonia digitata</i>	Fruit pulp or flour, mostly used for drinks	5	✓	✓	✓
<i>Acacia senegal</i>	Gum arabic	5	✓	✓	✓
Flowering plant species	Filtered honey	3	✓	✓	
<i>Saba senegalensis</i>	Dried fruit	3	✓	✓	
<i>Ziziphus mauritiana</i>	Dried fruit	3	✓	✓	
<i>Balanites aegyptiaca</i>	Unprocessed seeds	2	✓	✓	
Flowering plant species	Beeswax	1	✓	✓	

What is Market Analysis and Development?

Market Analysis and Development (MA&D) is a methodology developed by FAO and the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC) to assist local entrepreneurs in developing income-generating enterprises while conserving tree and forest resources. The approach has been especially developed for application in areas where literacy is low and access to markets limited. It enables poor rural households to assess potential returns and risks associated with different strategies for the development of enterprises based on tree and forest products.

The MA&D process systematically includes social and environmental concerns alongside consideration of technological, commercial and financial aspects of marketing a product. It therefore enables people to identify potential products and develop markets that will provide income and benefits without degrading the resource base. Assessing local environmental sustainability is an integral part of identifying and planning potential enterprises. Guidelines have been developed to help determine which products will be most viable in the marketplace.

After preliminary planning, the process is conducted in three phases, each broken down into a series of steps:

- identification of potential enterprises – through inventory of existing resources and products, recognition of products that are already providing income for local people and elimination of non-viable products – and of financial objectives by local people interested in developing enterprises;
- selection of the most promising products, identification of potential markets and discussion of means to commercialize the products;
- preparation of an enterprise strategy and business plan and training through a pilot phase, including learning to monitor progress and to adapt when change is needed.

MA&D is a framework that can be tailored to different contexts, purposes and products. Some countries where FAO has used this approach are Burkina Faso, Colombia, the Gambia, the Lao People's Democratic Republic, Mali, Mongolia, Kyrgyzstan, Serbia and Uganda.

MA&D MATERIALS

An MA&D field manual, *Community based tree and forest product enterprises: Market Analysis and Development* (FAO, 2000) has been designed to guide field practitioners who will assist local people in conducting the MA&D process. It consists of six booklets and a map of the process.

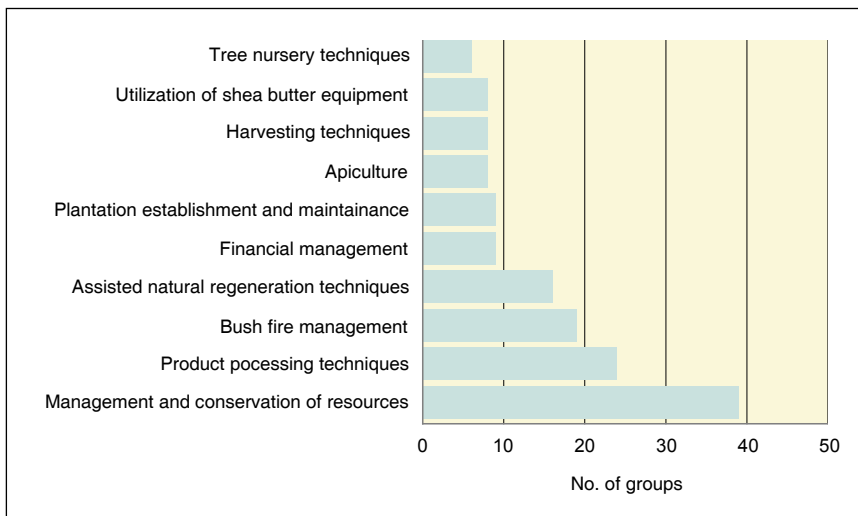
Field facilitators guidelines complements the field manual, providing easy-to-follow descriptions of practical methods and field tools that may be used to turn villagers into successful small-scale entrepreneurs. The user of the guidelines does not need to be an expert in business management in order to implement them.

Also available are case studies sharing the experiences and lessons learned in different countries, illustrating enabling conditions for developing small-scale forest enterprises.

All of these materials as well as further information are available online at: www.fao.org/forestry/enterprises

The publications can also be requested by sending an e-mail to: FO-publications@fao.org





2
Identified needs for
technical training

an average annual income of around US\$1 000.

Support needs identified in the Enterprise Development Plans include the following.

- **Loan finance.** All but five (159) of the groups seek loans, for a total of US\$177 000. Most loans are intended to meet requirements for working capital, with suggested repayment periods of 6 to 12 months.
- **Natural resource management.** Many plans spell out needs for material and technical support for the establishment of tree nurseries, orchards (64 ha total) and protection of existing forests (extending to 213 ha) – suggesting the potential for NWFP enterprises to stimulate local investment in sustainable management of forests and woodlands. An important aspect of the identified need is for technical training (Figure 2).
- **Organizational development.** Plans outline needs for training in financial management, cooperative management and improved literacy, along with technical support to facilitate local resource management agreements. Producers foresee a need for local agreements among forest

users to address issues such as access to and control of forest resources, conflict management, tree cutting regimes, tree product harvesting rules and bush fire management.

CHALLENGES FACED

The first participating villages took about 18 months to produce their draft plans and another six months to finalize them. The process was slowed by the lack of experience among all stakeholders, the challenges of coordinating inputs of government agencies and NGOs, and seasonal unavailability of local people engaged in agricultural fieldwork.

The main technical difficulty faced by partner NGOs and villagers was in the assessment of NWFP harvesting rates that could be sustained without degrading the resource base. Another challenge was many participants' expectation of direct material or financial assistance from donors, which other projects in the area had provided. In some project areas product targeting had to be revisited because the initial selection centred on the products' perceived social value, rather than on its economic viability as a basis for enterprise development as emphasized by the MA&D approach. Another challenge was effective involvement of poorer households and women. Women wishing

to establish fruit-tree orchards faced a particular problem, because under traditional tenure systems it is difficult for individual women to establish secure land tenure. However, groups of women were better able to negotiate with their village chiefs to secure access to land on which to plant orchards.

The progress to date suggests that the participatory and iterative nature of the MA&D approach is apt for supporting rural producers in addressing constraints and barriers to enterprise development based on the sustainable use of NWFPs. However, the approach is demanding of time and resources. Skilled facilitators, adequate investment in training (around six days for each of the three phases of the MA&D approach) and adequate field support and supervision are particularly important. As MA&D is not a quick approach, it should best be seen as an investment in long-term sustainability.

SUPPORTING PRODUCERS TO IMPLEMENT THEIR ENTERPRISE DEVELOPMENT PLANS

The next immediate priorities for the Village Tree Enterprise initiative are to:

- negotiate agreements for provision of credit services;
- consider direct support for procurement of major capital items;
- provide relevant training inputs;
- secure additional financial support for forest management components of Enterprise Development Plans through TREE AID charitable donors to enable village enterprises to invest in better management of forests and woodlands;
- recruit local staff and international specialists to incorporate new enterprise development skills in the TREE AID management team.

Recognizing that secure access to and control of forest resources for poor families will be critical if they are to benefit from NWFP development, TREE AID is embarking on a major five-year project



Field training for Market Analysis and Development (MA&D) facilitators, Kogyende Village, Barsalogo, Burkina Faso

(with funding from the United Kingdom Department of International Development [DFID]) to create a favourable policy environment and institutional framework for forest governance in Burkina Faso. Rather than policy change, the main concern is effective and participatory implementation of existing national policy for decentralized natural resource management and of the Forest Code. This project will work with new decentralized government structures and civil society organizations at the village or commune (township) level, government service providers and local NGO partners at the department (sub-provincial) level, relevant government ministries at the national level, and forest governance learning groups in neighbouring Mali and Ghana.

In the medium term, TREE AID also plans to:

- develop new partnerships with agencies in Burkina Faso to bring a wider range of skills and experience to the process of supporting small enterprise development;
- provide additional support for newly established producer groups and associations in business development components of their Enterprise Development Plans;
- develop national and regional mar-

ket information and communication services to support the passage of producers from local to national and international markets and to connect them to service providers and policy-makers.

These plans will be taken forward in partnership with FAO and the International Institute for Environment and Development (IIED) through the Forest Connect initiative (see www.fao.org/forestry/site/42297).

Government trade policy has not surfaced as a critical issue yet, but potential emerging issues are official and unofficial barriers to regional trade, local taxation policies of recently established commune-level government, market access for imported tree product substitutes and regulation of international trade for major tree product exports such as shea nuts/butter and gum arabic.

FOR FURTHER WORK

The Village Tree Enterprise initiative is a work in progress, and many questions are still to be resolved. For example:

- What is the right level of incentives to support entrepreneurs faced with financial capital constraints, without encouraging dependence?
- How can growing enterprises secure access to increasingly valuable resources without depriving other users or being squeezed out by more powerful interests?

- How can the outcomes of the initiative be sustained within existing, traditional social structures, with a strongly established hierarchy, while fostering representative producer groups and ensuring that the individuals or groups with the most political or economic power and influence do not capture all the benefits?
- How can it be ensured that an appropriate portion of returns are reinvested in sustainable forest management?
- What is the best way to facilitate effective communication within and among geographically isolated producer groups and networks?
- How can conflicting interests – e.g. relating to allocation of human and financial resources to support growing enterprises, and different interests of men and women – be resolved at the household level?
- How can government be encouraged to develop NWFPs to maximize not only export earnings, but also benefits for poor rural households?

Yet the Village Tree Enterprise initiative has already helped rural communities analyse opportunities, structure enquiries and overcome immediate problems in accessing information, finance and services. It has also helped them to communicate with each other and recognize mutual interests. As such it represents a step towards creating viable enterprises that can help alleviate poverty. ♦

Towards an enabling environment for small forest enterprise development

Small forest enterprises represent a promising option for contributing to poverty reduction and resource conservation through sustainable forest management. Their development into economically viable businesses requires an enabling environment in terms of laws and policies that promote legal access to the resource base, provide incentives for sound forest management, support value addition and promote the formation of human, social, physical and financial capital for effective forest and business management.

An International Conference on Small and Medium Enterprise Development for Poverty Reduction: Opportunities and Challenges in Globalizing Markets, held in Costa Rica from 23 to 25 May 2006, brought together nearly 200 experts, practitioners and business and community leaders from around the world to discuss institutional and policy options for promoting more viable and sustainable small forest enterprises in Africa, Asia and Latin America. The conference was organized by the Tropical Agricultural Research and Higher Education Center (CATIE) and FAO, with the support of the Interchurch Organisation for Development Co-operation (ICCO), the Center for International Forestry Research (CIFOR), the Rainforest Alliance, the Inter-American Development Bank Multilateral Investment Fund (IDB/MIF), the Netherlands Development Organization (SNV) and the Regional Unit for Technical Assistance (RUTA).

Subsequently FAO, CATIE, the International Institute for Environment and Development (IIED), SNV and ICCO produced a policy brief outlining the challenges to the promo-

tion of viable small and medium forest enterprises and the role that government and non-governmental agencies, as well as the enterprises and their business partners, can play in the process.

Major conclusions of the conference and policy brief

Governments can take important steps to strengthen small forest enterprises to reduce poverty. They can start by granting and enforcing legal access to forest resources. Curbing illegal logging and unsustainable harvesting of non-wood forest products (NWFPs) will reduce unfair competition. Simplifying bureaucratic procedures for registering small enterprises can reduce costs and enhance value-adding opportunities. Financial incentives, including tax breaks for small start-ups, and local and/or green purchasing policies can also help.

Small enterprises can improve their competitiveness in national and international markets for forest-based products. Upgrading technical, business and financial capacities and creating specialized institutions for business management helps add value to timber and NWFPs, reduce production and administration costs, facilitate new business partnerships and provide a basis for negoti-

ating more favourable terms of trade. Organizing associations may facilitate the upgrading process.

Coverage and quality of business development services can be improved. Special emphasis needs to be given to training and education to ensure a critical mass of rural business development service providers. Market-based mechanisms for delivery of these services are essential to ensure their impact and sustainability.

Financial services are critical for the creation and development of small forest enterprises. Specific credit lines and related services and mechanisms need to be developed according to the needs and nature of these enterprises.

Non-governmental organizations (NGOs) and development agencies can strengthen the capacities of small forest enterprises. Facilitating access to market and technical information is a priority. Communication networks can be funded to improve information flow, stimulate company–community partnerships, facilitate access to trade fairs and present technical, business development and financial services. NGOs and agencies can facilitate multistakeholder negotiations for better policies and business environments and help manage conflict. Support is often also needed to obtain access to niche markets (e.g. for certified timber or fair-trade NWFPs) and to improve marketing and negotiation skills. NGOs, development agencies and commercial providers of business development services should try to avoid overlapping efforts.



Overcoming the barriers to financial services for small-scale forestry: the case of the community forest enterprises of Petén, Guatemala

R. Junkin

A clear legal framework and supportive institutional environment, including technical and businesses services, encourage commercial banks to provide financial services to community forest concessions.

Globally, the past few decades have seen exponential growth and development in the micro-finance sector. The worldwide movement to promote small-scale financing for micro and small enterprises has reached over 94 million clients (González and Rosenberg, 2006). Despite this significant outreach, large segments of the population in many developing countries continue to be underserved by financial services. One of the key challenges facing the microfinance sector is how to “expand the frontiers” so that financial institutions can sustainably provide services to populations outside urban centres in the most remote rural areas.

Forest communities often have limited access to financial services. The micro-finance and development banking sectors are increasingly focusing on how to reach rural areas, but the focus is gene-

rally on agriculture. Little consideration has been given to reaching small-scale forest enterprises. Governments and international development agencies have mainly focused their attention to forest finance on creating appropriate incentives for forest conservation; they have been less concerned with the provision of adequate financial services for the business cycles of those making a living from the forest.

Financial services principally include credit, savings, insurance, money transfers and leasing. These services allow people and enterprises to distribute their expenditures over time – so that what they can’t pay now with their current income, they can pay with past income (through savings or insurance), future income (through loans) or a combination of both (Rutherford, 2000). Small-scale financing, or microfinance, helps

Community forestry in the Mayan Biosphere Reserve, Petén, Guatemala



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individuals and small enterprises put together the sums of money needed to take advantage of opportunities, solve problems and meet their basic consumption and investment needs in a timely manner.

A number of barriers inhibit financial institutions from operating in rural areas. These include:

- geographic dispersion, which increases the costs of reaching clients;
- concentration of economic activity around a few principal products, leading to increased risks for the financial institution;
- the long-term nature of many investments, especially in the forestry sector;
- land tenure issues, institutional weaknesses and producers' inexperience working within the context of strict contractual arrangements;
- inadequate infrastructure, including communications, roads and electricity;
- inexperience of financial service providers in serving rural areas, hampering design of appropriate financial products;
- regulatory frameworks that penalize rural/agricultural portfolios.

Overcoming these barriers to provide improved financial service options for small-scale forest enterprises requires a combination of solutions. This article illustrates the factors involved by profiling the case of the community forest enterprises working with concessions in the Mayan Biosphere Reserve in Petén, Guatemala.¹

COMMUNITY FOREST ENTERPRISES IN THE MAYAN BIOSPHERE RESERVE

The Department of Petén in Guatemala has been extensively colonized by settlers during the past 40 years and is therefore

composed primarily of first-, second- and third-generation migrants from other regions in Guatemala. These immigrants cleared large areas of forest for seasonal agriculture and pasture. They also engaged in the extraction of precious woods and non-wood forest products (NWFPs) (SmartWood, 1999). Initially, industrial logging companies were allowed unlimited access to the high-value timber of the region and were supervised by the State-owned and administered Fomento y Desarrollo de Petén (FYDEP). Companies obtained three- to five-year logging contracts and paid a volume-based tax. As the contracts had no requirement for management plans and no provision for yield control, companies could extract as much mahogany as they were able (Carrera *et al.*, 2006) without ensuring regeneration of the resources. However, following the creation of the National Council for Protected Areas (CONAP) in 1989 and the Mayan Biosphere Reserve in 1990, all logging contracts in the reserve were revoked.

The Mayan Biosphere Reserve extends across 2.1 million hectares, divided into three zones: a core zone, consisting of national parks and protected biotopes; a multiple-use zone, where forest concessions are granted; and a buffer zone, where some of the land is owned by cooperatives and municipal *ejidos* (State-owned land administered by the municipal government), but where land use is generally regulated, even on private property (Carrera *et al.*, 2006). In 2004, the multiple-use area had 13 community forest concessions, two industrial concessions and eight cooperatives. Twelve of the community concessions were assisted by the Biodiversity and Sustainable Forestry (BIOFOR) programme of the United States Agency for International Development (USAID) and Chemonics International.

Forest concessions are granted by CONAP for 25 years and are renewable. Enterprises granted concessions are permitted to extract and market tim-

ber and NWFPs on a restricted basis from the concession area according to annual plans presented to and approved by CONAP. As part of the concession agreement, all areas must become certified according to Forest Stewardship Council (FSC) norms within three years after the concession is granted (Carrera *et al.*, 2006).

Unlike more established rural populations, the population of Petén does not have strong social bonds based on common history in a given locale. Instead, groups of neighbours, or others sharing a common interest in developing economic alternatives to small-scale agriculture, have formed community forest enterprises for obtaining forest concessions. These enterprises are recent creations; the most experienced was formed 13 years ago (Table 1). Given their youth, their usually low initial capitalization and their background in small-scale farming, it is natural that the enterprises are still developing their entrepreneurial capacities.

In line with the requirements for obtaining a concession, all of the enterprises are legally established and submit yearly management plans to government authorities. Many have achieved FSC certification, which has attracted a number of additional buyers in the United States, Europe, Mexico and Guatemala (e.g. Stoian and Rodas, 2006), especially for mahogany. These positive characteristics are not typical of nascent small community enterprises in Latin America.

Production system

Given that the community forest concessions are long-term arrangements and subject to long-term management plans (from 25 to 70 years), the community forest enterprises harvest a small portion of their area each year (approximately 1 percent) (Ortiz, 2002). This helps to guarantee the regenerative capacity of the forest. Initially, the concessions principally harvested mahogany and tropical cedar – high value woods, with

¹ Parts of this article are adapted from a case study published in FAO, 2005.

TABLE 1. Community forest concessions in the multi-use area of the Mayan Biosphere Reserve

Organization	Year concession granted	Women	Men	Total
San Andrés	1999	11	167	178
Carmelita	1997	46	63	109
Cruce a la Colorada	2000	20	47	67
San Miguel	1994	4	35	39
La Colorada	2000	2	46	48
La Pasadita	1997	26	96	122
Uaxactún	1999	82	142	224
Arbol Verde	2000	33	309	342
Impulsores Suchitecos	1998	0	27	27
Laborantes del Bosque	1999	21	68	89
Custodios de la Selva	2000	16	82	98
El Esfuerzo	2001	9	29	38
Total		270	1 111	1 381

established demand. However, they have begun to explore marketing options for other woods; in 2004, 18 different species were included in the annual operating plans presented by the community enterprises (BIOFOR/Chemonics International, 2003).

The production process for the community forest concessions consists of three distinct phases:

- **planning** – including a general management plan for the period of the concession, an annual operating plan and an annual census, as well as renewal of certification every five years;
- **extraction** – including opening the principal road, opening secondary roads and clearing log landings, chaining and marking trees, clearing felling areas, dragging, cutting and transporting;
- **processing** – including verification of volume, removing bark, sawing, predrying, classification, inventory, sharpening and repairs.

If wood is sold as logs, the traditional form of sale, the process ends with transport to the buyer. This form of marketing, however, generates minimum benefits in community labour, as well as low final prices for the product. Some community forest enterprises still sell wood cut with chainsaws, which entails lower

operational costs but also leads to high waste and limited marketing options. Production of sawnwood sometimes requires enterprises to form alliances with industry partners. However, some enterprises are beginning to purchase their own sawmills, increasing their capacity to produce higher-value products and allowing them to offer sawmill services to other community enterprises, which can be an additional source of income.

FINANCIAL REQUIREMENTS

Finance needs vary among the community forest enterprises depending on the amount of timber to be harvested, the distance of the concession from the community, internal decisions regarding salary levels and the quality of equipment owned by the enterprise. The productive capacity of each concession varies according to the density of commercially viable timber found. In the 2004 harvest, the concessions assisted by BIOFOR cut volumes ranging from 315 to 1 791 m³ and from 116 to 1 008 trees. The costs of the extraction process ranged from US\$37.27 to \$101.53 per cubic metre (BIOFOR/Chemonics International, 2003).

Technical assistance agencies have worked closely with the community forest concessions in Petén to determine their operational costs and cor-

responding financing needs. The annual operating plans submitted to CONAP provide a breakdown of the financial resources necessary for the annual production cycle.

Table 2 shows three examples of the general cost structure of the concessions. As shown, the extraction and sawing processes represent the bulk of the overall operational costs (60 to 70 percent of the total). The most important costs in the extraction process are loading and transporting timber and hauling the trunks to log landings, which together represent more than 60 percent of the extraction costs. Maintenance of principal roads accounts for another 6 percent of extraction costs. These main costs are primarily due to the rental of heavy equipment services from external suppliers (BIOFOR/Chemonics International, 2002). Sawing accounts for 73 percent of total processing costs; sawing costs include personnel, fuel, materials and the use of equipment and machinery.

The overall costs for the community forest enterprises for the 2004 harvest ranged from US\$60 691 to \$240 834. Among the 12 community forest enterprises assisted by BIOFOR, total operational costs for the 2004 harvest reached US\$1.68 million.

In addition to ongoing operational costs, the community forest enterprises have also used financing to purchase fixed assets.

COMMERCIAL BANKS REACH OUT TO MEET THE NEEDS

Given the relative youth of the community forest enterprises and the socio-economic background of their owners, most have insufficient capital to finance their operational costs. Most of the enterprises take advantage of a combination of resources to cover operating needs, including partnerships with the timber industry, advance payments from buyers, use of local money lenders and small loans obtained through the Association of Forest Communities of Petén

TABLE 2. Examples of annual operating cost structure of community forest concessions

Enterprise	Cost (quetzales)							Total cost (US\$)
	General management plan	Annual operating plan	Extraction	Processing	Taxes and certification	Administration	Total	
Enterprise 1	30 200	21 441	151 999	165 560	40 468	81 933	491 600	60 691
% of total	6	4	31	34	8	17		
Enterprise 2	35 350	109 355	564 168	425 438	66 104	240 083	1 440 496	177 839
% of total	2	8	39	30	5	16		
Enterprise 3	39 700	128 363	814 039	533 317	110 211	325 126	1 950 755	240 834
% of total	2	7	41	27	6	17		

Source: Based on data from BIOFOR/Chemonics International, 2003.

(ACOFOP), which groups community associations related to the Mayan Biosphere Reserve (BIOFOR/Chemonics International, 2002). However, the most significant financial service providers for the community forest enterprises are commercial banks – which generally have not been key players in the provision of such services to small enterprises in rural areas in Latin America.

BANRURAL and Bancafé

BANRURAL began to work with the community forest concessions in 1999, providing loans of up to 100 000 quetzales (Q) (approximately US\$13 000) to three concessions. These loans were backed by collateral guarantees on equipment, as well as evidence of sales contracts. In 2002, the bank experimented with larger loans (up to Q400 000 or US\$52 000) to four concessions, backed by a letter of credit from an importer in the United States. The experience overall was not successful, however. The importer was unable to purchase the wood that it had ordered and asked the concessions to find alternative buyers. The concessions asked for an extension from the bank in order to identify alternative buyers, and the bank agreed. All the concessions eventually paid back the loan, but payment was delayed, and in one case the concession had to sell assets in order to honour its commitment to the bank.

Based on this experience, BANRURAL was reluctant to provide large loans in

2003. While it continued to provide smaller loans of up to Q100 000, no more letters of credit were accepted. In 2004 it began to grant larger loans again, of up to Q500 000, perhaps because of developing competition with another commercial bank – Bancafé.

Bancafé began its relationship with the community forest concessions in 2003. Representatives from ACOFOP and the local office of BIOFOR approached Bancafé about the possibility of obtaining financing for the annual operating plans of a group of concessions. Loan applications were backed by the promise of support from ACOFOP and BIOFOR. That same year, Bancafé approved loans totalling Q10 million (US\$1.3 million) to eight community forest concessions. As in the case of BANRURAL, these loans were financed through Bancafé's normal asset base and were therefore not dependent on special government or donor programmes. During the last quarter of 2006, Bancafé entered into bankruptcy, principally owing to the failure of investments in foreign real estate markets. Its portfolio in Petén was then transferred to BANRURAL.

During the period of its operation, the loans provided to the forest concessions by Bancafé were backed by a solidarity guarantee among ACOFOP members. In order to qualify for financing, forest concessions needed formal legal status and had to be members of ACOFOP. Loans were based on the cash flow needs and sales projections developed in the annual

operating plans. The guarantees for the loans included an ACOFOP agreement to cover any non-payment and a lien on harvested wood. The high visibility of the concessions and their desire to protect their reputations also motivated them to pay on time. In the case of arrears, ACOFOP actively worked with the concessions concerned to guarantee repayment. In one case, ACOFOP provided a bridge loan to a concession in order to guarantee repayment to Bancafé.

Loans to forest concessions represented an important part of Bancafé's portfolio for the Petén region – 45 percent in 2003 and 50 percent in 2004 (Superintendencia de Bancos de Guatemala, 2004). The loans were granted for approximately 10 months, at 18 percent interest, with interest and capital due in one final payment.

By the end of 2004, BANRURAL also began to negotiate package loan agreements with the concessions through ACOFOP. In 2004, the overall package reached Q11 million (US\$1.4 million) and in 2005, Q9 million (US\$1.16 million). For 2007, seven concessions have loans under the package agreement with BANRURAL (A. Córdova, ACOFOP, personal communication).

Factors contributing to the involvement of commercial banks

The case of the community forest enterprises of Petén illustrates clearly that an appropriate institutional environment and support structure facilitate

the entrance of commercial banks. The following factors helped make the enterprises bankable.

Scale of enterprises reduces effects of geographic dispersion. The size of the operations of the community forest enterprises in Petén, as well as the scale of the financial services required, make providing these services cost effective for the banks. Many analysts would not consider the loans illustrated in this case as microfinance. Indeed, the overall loan levels are high. However, this is due to the nature of the enterprises serviced, as opposed to the means of the individual households who participate in the concessions. The case illustrates the possibility for poor households to organize businesses that are capable of accessing opportunities that would not be available to them if they worked individually.

Beyond the enterprise level, in order to open the door to financing, the BIOFOR project and ACOFOP actively promoted a group of community forest enterprises to banks as a package. Bancafé and later BANRURAL were able to lower their transaction costs by treating the group of loans as a package, and by dealing with one overall client, ACOFOP. Achieving this scale also makes it worthwhile for banks to offer related services such as money transfer services at discounted rates and individual loans to community enterprise members, in order to compete for them as clients.

Finally, supervision costs are reduced for the banks through established relationships with ACOFOP and organizations that have ongoing projects with the community forest enterprises.

Diversified portfolios and complementary services minimize risk. Commercial banks are able to diversify their portfolios all across the country. In this way they spread their risks across a wide array of clients and loan types. The risks are thus lower than those of portfolios concentrated in a small rural area.

The technical and business development services provided by civil society organizations and international development agencies provide an additional incentive to the commercial banks to offer larger loans to community enterprises. Solidarity among the groups, as manifested in ACOFOP, also clearly facilitates access to the commercial banks. For example, the guarantee offered by ACOFOP and the monitoring assistance offered by both ACOFOP and BIOFOR/Chemonics were key considerations in Bancafé's decision to enter into a lending relationship with the enterprises.

The annual operating plan, based as it is on a census of trees in the concession area, provides a reliable indication of the production levels expected, and there are few risks that this production will not be achieved. While the community enterprises are new and continue to have significant management weaknesses, the existing demand for many of the products they offer practically ensures their financial viability – helping to minimize risks for the banks.

Forest concession system provides legal framework for clear use rights. While the community forest enterprises do not hold titles to the forest that they harvest, they have clear legal rights to the concessions. The extent to which they can harvest timber and NWFPs in the concession is established in their general management plan and annual operating plans. While the land itself cannot be used as a guarantee for the loans, the timber and NWFPs included in the annual operating plan can serve as a guarantee. Government approval of the plans provides additional security for the banks regarding the legitimacy of the economic activities proposed.

Commitment to serving rural areas. Both Bancafé and BANRURAL are committed to serving rural areas and have therefore worked to develop appropriate

financial services to meet the needs of this sector.

CONCLUSION

The development of the community forest enterprises of Petén, Guatemala has benefited significantly from the establishment of a clear political and regulatory framework, as well as the availability and articulation of technical, business and financial services.

Technical services supported the initial establishment of the concession regime, as well as the capacity of community groups to enter into the regime. Business services allowed these community groups to develop enterprises through internal structuring and organization, identification of market opportunities and the design of products appropriate to the market realities. Financial services have allowed the enterprises to fulfil their cash flow needs for operations and invest in infrastructure to improve their product offering. The offer of financial services from commercial banks, as opposed to forest product buyers, has given the enterprises more independence and the capacity to negotiate better prices for their products.

At the same time, the presence of a clear legal framework and technical and business services was key in encouraging commercial banks to enter the picture. ACOFOP has played an important role as an advocate for its members in relation to the commercial banks. Representatives from the BIOFOR project, as business service providers, also actively promoted the involvement of these banks. Each type of service is essential and also depends on the success of the others in supporting the community forest enterprises to achieve their particular goals, as well as the shared goal of economic development for poor communities in the region. ♦



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Forest Management Associations – value from cooperation for forest owners

L. Jylhä

In Finland, where family and small-scale forestry prevails, a well developed network of Forest Management Associations provides information, advice and management support to forest owners.

Finnish forestry is often family forestry: private individuals and families own 60 percent of Finnish forests, and the average holding is only 23 ha



Sustainable forest management requires the expertise and advice of forestry professionals and motivation of forest owners. Information on forest resources, effective communication and supportive organizational structures are also necessary.

In Finland, a three-tiered network links private forest owners at and beyond the local level (see Figure). This article highlights the role of local Forest Management Associations in management of private forests and in providing services for forest owners. It also gives some examples of how the Finnish model is being adopted in other countries.

FINNISH FORESTRY – CHARACTERIZED BY PRIVATE OWNERSHIP

Finnish forestry relies heavily on privately owned forests. Private individuals

and families own 60 percent of Finnish forests. There are 440 000 private forest holdings owned by almost 1 million forest owners, including those who own forest holdings jointly. Finnish forest holdings are small; the average area of a holding is only 23 ha. Finnish forestry is commonly termed family forestry: small-scale forestry run by individuals and families, and passed on as a legacy from one generation to the next. Still, private forestry produces about 80 percent of the domestic raw wood bought by industry.

In recent decades, dramatic socio-economic changes, particularly the changing age structure of the rural population, increasing urbanization and passage of ownership through inheritance, have influenced the structure of family forest ownership. Among private forest owners the proportion of farmers has

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decreased, while the number of wage and salary earners and pensioners has increased. Non-farmers now own 81 percent of family forests, and pensioners are the biggest forest owner group. Despite the general move to towns and cities in Finland as a whole, most forest owners still live in sparsely populated rural areas.

The fragmented and changing forest ownership pattern creates a special challenge for viable forest management and logistics; networking and cooperation are essential for efficient communication and operations.

FOREST MANAGEMENT ASSOCIATIONS – SELF-ORGANIZATION OF FOREST OWNERS

In Finland, Forest Management Associations have a crucial role in promoting sustainable forest management and communicating information among family forest owners. There are 150 local associations with more than 300 offices around the country. These associations are independently organized for providing support for forest owners on request. As non-profit organizations specialized in the management of private forests, they employ about 1 000 forestry professionals offering services and guidance to forest owners, and 650 forest workers performing practical silvicultural and harvesting work as required by the forest

owners. A vast resource for networking and communication are the 4 500 forest owners in positions of trust in Forest Management Association Councils and Boards.

Vast range of services

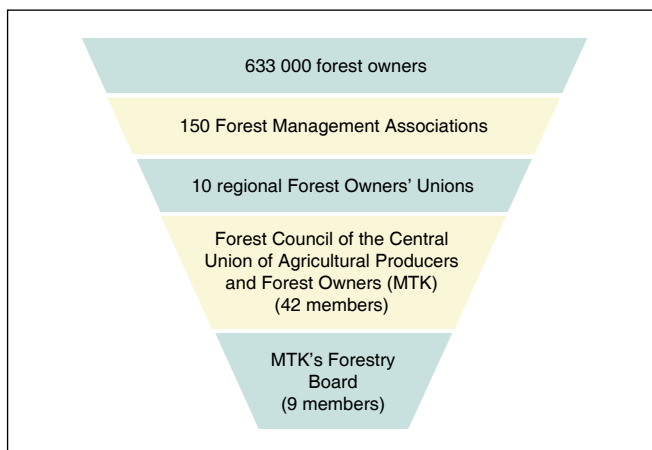
Forest Management Associations work in close cooperation with forest owners in all matters related to forests (see Box). They offer training and advice and provide professional assistance in forestry issues, thus protecting forest owners' interests and helping them to achieve their objectives. The associations' advisers provide individual guidance to the owners of almost 130 000 forest holdings every year; this represents about 40 percent of Forest Management Association members. With a growing number of female forest owners – 40 percent of forest owners are now women – special courses on forest management are organized for women.

The associations take care of most of the planning of forestry measures and their implementation in private forests, working together with forest owners; in 2006 they prepared or updated forest management plans for almost 200 000 ha. About 80 to 90 percent of the activities related to timber production in private forests are carried out by Forest Management Associations. They also carry out approximately 75 percent of preliminary planning of timber sales and



In Finland's boreal climate the time between stand establishment and final felling is long, 60 to 120 years depending on the tree species and site quality – but family forests are passed on as a legacy from one generation to the next; only indigenous tree species are used, usually Norway spruce (Picea abies), Scots pine (Pinus sylvestris, shown here) and silver birch (Betula pendula)

How private forest owners are organized in Finland



Forest Management Association services

Forestry services

- Forest regeneration and seedling material brokerage
- Management of seedling stands and young forests
- Forest nature management
- Forest certification

Timber trade services

- Drawing up a plan for timber sales
- Power of attorney for timber sales
- Supervision of harvesting and timber measurement
- Timber harvesting and procurement service

Advisory and evaluation services

- Training, guidance, forest work guidance
- Forest tax service
- Evaluations of forest holdings
- Forest damage assessment
- Drawing up and updating forest plans

provide significant assistance in sales transactions.

The associations implement and supervise almost 90 percent of forest regeneration in private forests (80 000 ha every year). Much emphasis is placed on the profitability of forestry owing to its direct impact on the vitality of the countryside and the viability of other rural sources of livelihood.

Forest owners who do not have enough time or opportunity to participate actively in the management of their forests or timber sales have the option of granting the associations power of attorney. Urbanization has increased the proportion of owners who make use of this option; at present, approximately 45 percent of timber sales from private forests are carried out through power of attorney.

A growing area of activity for Forest Management Associations is in services related to protection of nature. For example, they provide advice in the management of protected forest ecosystems and help forest owners identify and manage valuable habitats. The associations also act as umbrella organizations for forest owners in group certification of forest management.

To reach all their members, Forest Management Associations publish newsletters and special information bulletins. In 2006 almost 500 issues were sent to forest owners. Most Forest Management Associations have Web sites that give information on, for example, new forest management practices, timber markets, forest legislation and decisions made in international forest policy processes.

Independent governance and financing

Forest Management Associations are governed and financed completely by forest owners, who also elect their administration. The Act on Forest Management Associations enables them to receive a forest management fee from forest owners. Every forest

owner, except those with very small holdings (less than 4 ha), pays a forest management fee and is thus automatically a member of the association in the area where his or her forest is located. Membership is also open to the owners of small forest holdings that are exempt from the fee. The total number of owners in the associations is now 633 000, with nearly 320 000 holdings.

A member of a Forest Management Association can influence both its decisions and the way it operates. The Council of the Association is its highest decision-making body. Members elect the Council by postal ballot, and all members have equal rights to participate in the elections and nominate candidates.

The statutory forest management fee paid by forest owners represents approximately 15 percent of the associations' income and is to be used primarily for advising, training and dissemination of information directed to forest owners to promote forest management. Other sources of income include service fees, payments for planning and supervision of silvicultural operations, and delivery sales fees.

Forest Management Associations have established quality control and customer feedback systems to ensure the quality of their work, and are responsible for any loss caused if they fail to follow the agreed management plan – although in practice this has not been an issue.

Forestry Centres, which are the regional forestry authorities, supervise the Forest Management Associations to ensure that they operate according to the Act on Forest Management Associations and that the forest management fee is used for the purposes defined in the Act.

NETWORKING HAS LONG ROOTS

Voluntary silvicultural guidance and cooperation among private forest owners in Finland have a long history and tradition. The first Forest Management Associations were founded as early as the end of Russian rule in 1907. They were established for the same reasons



Individual guidance and field visits are an integral part of Forest Management Association activities: a forest owner and a Forest Management Association adviser compare measures proposed in the forest management plan to the real situation in the forest

that justify their work today: concern about the condition of forests and about the interests of forest owners in forest management and timber sales.

The first Forest Management Association Act was passed in 1950. It provided a solution to the key question in the operation of the associations, namely financing. Finnish society wanted to guarantee that training and advisory services were available for every forest owner. This principle was fixed also in the 1999 law; in Section 1 of the Forest Management Association Act, the task of Forest Management Associations is set out as follows:

“The Forest Management Association is a forest owners' body, the purpose of which is to promote profitability of forestry practised by forest owners and the realization of the other goals they have set for forestry, and to advance the economically, ecologically and socially sustainable management and utilization of forests.”

Advisory services have had an important role in Finland from as early as the end of the nineteenth century. Forestry advice and extension have been found to be the most effective means of promoting sustainable forestry and motivating forest owners. It is especially important that forest owners themselves have taken the responsibility of setting up the Forest Management Associations, as well as maintaining and developing the productivity of private forests.

LOBBYING REGIONALLY, NATIONALLY AND INTERNATIONALLY

A three-tier organization takes forest owners' networking beyond the local level, enabling their participation in forest sector development and policy processes. Ten regional Forest Owners' Unions provide a link between the local Forest Management Associations and the forest owners' national interest organization, the Central Union of Agricultural Producers and Forest Owners (MTK). The Forest Owners' Unions coordinate, develop and guide the activities of the local associations, promote private forestry and protect private forest owners' interests. They also provide guidance and assistance in marketing of forest products. As at the local level, forest owners are responsible for strategic decision-making at the regional and national levels; the Council and Board members of the Forest Owners' Unions and the MTK Forestry Council are all forest owners elected by the Forest Management Association members.

The MTK Forestry Council is the national central organization of private forest owners. It looks after private forest owners' interests in roundwood markets and influences forest policy nationally, within the European Union and internationally by participating in processes such as the Ministerial Conference on the Protection of Forests in Europe (MCPFE) and the United Nations Forum on Forests (UNFF). MTK reports

on developments in and results of these processes to Forest Management Associations through a monthly bulletin. The decisions of international forest policy processes thus influence Forest Management Associations' forest management planning, operations and information systems.

MTK also participates actively in European and international cooperation among family forest owners through its membership in the Confederation of European Forest Owners (CEPF) and the International Family Forestry Alliance (IFFA).

This organizational structure and the cooperation with international private forest owners' organizations enable forest owners to participate in global forest policy processes, and also help ensure that up-to-date information on international forest policy developments is disseminated to the grassroots level.

SHARING OF EXPERIENCE AMONG SISTER ORGANIZATIONS

The Finnish Forest Management Association concept has engendered interest among forest owners in other countries. Many delegations from Central and Eastern European countries that are reintroducing private forest ownership have visited Finland to study the associations' experiences. Even though conditions in these countries differ from those in Finland, many of the challenges are common: how to reach large groups of forest owners efficiently, how to motivate forest owners and involve them in forest management, how to promote sustainability and how to improve the economic viability of operations.

Many of the practices that have been effective in Finland could also be applied in other countries. Finland has cooperated with other countries in projects related to development of efficient group certification models based on forest owners' associations and advising forest advisers and forest owners on timber measurement. Cooperation has been closest with

the Baltic countries but has also extended beyond Europe.

One example is the development of forest owners' organizations in Mexico, where reformed forest legislation promotes sustainable private forestry and makes special provisions for promoting organizations that support private forestry. In 2003, a delegation of Mexican forest authorities and private-sector representatives visited Finland to study the Finnish private forest sector organizations and to establish links. The experiences were applied in structuring and developing private forest owners' organizations and advisory services in Mexico. The national central organization, the Confederation of Organizations of Forest Producers (Confederación Nacional de Organizaciones de Silvicultores, CONOSIL), was established in 2005. It has about 670 000 registered members in 218 local associations. The local associations are members of 32 state-level unions which are members of CONOSIL. In 2006, the CONOSIL Board visited MTK in Finland and the two organizations signed a memorandum of cooperation which lays the groundwork for exchange of information, publications, study tours and expertise.

The cooperation and networking with forest owners' organizations in other countries has provided useful information and feedback from experiences for all parties. The strengthened cooperation has also assisted forest owners' participation in international forest policy discussions. Common channels such as the IFFA Web site (www.familyforestry.net) have been used to disseminate information and experiences. ♦

Gaining a position for Lithuanian small-scale forestry through creation of a marketing network for wood trade and services

A. Gaižutis

In Lithuania, where restoration of private forest ownership is creating a large number of small, fragmented forest holdings, networking of forest owners' cooperatives and enterprises is boosting the commercial importance of private forests.

Forests are among the most important indigenous natural resources in Lithuania. Forestry and forest industries have an important role in the national economy, accounting for about 4 percent of gross domestic product (GDP). The sector currently enjoys clear priority status in the economic life of the country.

Since Lithuania regained independence in 1991, the structure of land and forest ownership has changed considerably. Citizens have regained the freedom to do business and to own property which had been nationalized under Soviet rule. Land reform and restitution in the forest sector began from nearly 100 percent State ownership of forests – of which about 26 percent were collective farm forests transferred to State ownership when the collective farms were dissolved 15 years ago. Although the restitution process is not yet complete it has already restored ownership rights to many thousands of people and engendered a variety of forms of ownership.

The large number of forest owners (more than 200 000) and the small and fragmented character of private holdings (4.6 ha on average) create difficulties in obtaining a sustainable supply of roundwood from the private sector. Restoration of private ownership rights on forest land has incurred certain problems, such as negative attitudes of State forest officials reluctant to give up their authority in territories that they previously controlled. To change attitudes towards forest management will take some time, as Lithuania had no tradition of organized private forest management and no experience of forest owners' cooperatives or associations.

Cooperation among private forest owners is getting stronger, however. The Forest Owners' Association of Lithuania (FOAL; see www.forest.lt) supports the development of a network of forest owners' cooperatives and other enterprises that provide all forestry-related services, including trade in roundwood. The network of FOAL members is now

Planting of a new forest on former agricultural land by members of a forest owners' cooperative in Moletai District, Lithuania, spring 2006



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Facts and figures: forest resources and administration in Lithuania

Forest area	2.1 million hectares (33.5% of land cover)
State forest	1.05 million hectares (50% of forest cover)
Forest reserved for restitution	0.3 million hectares (14% of forest cover)
Private forest	0.77 million hectares (36% of forest cover)
Number of private forest owners	232 000
Number of private holdings	149 000
Average size of private forest holdings	4.6 ha

the biggest supplier of wood from private forests and one of the biggest players in the country's overall roundwood market.

This article shares some experiences in creating a services and marketing system for wood trade from private family forests, helping to enable small-scale private forestry to gain a visible position in Lithuania.

FOREST RESOURCES

Lithuania's total forest area is 2.1 million hectares, or 33.5 percent of the land area (FAO, 2006). National forest inventory statistics indicate that forest condition is improving and forest area and wood resources are increasing. Enhanced sustainable development of the forest sector could lead to fuller realization of the social, environmental and economic values and functions of forests.

The total volume of growing stock in the forests of Lithuania is 400 million cubic metres (FAO, 2006). The average forest area per capita is 0.6 ha, and the average volume of growing stock per capita is 199 m³ accordingly. Current annual increment in Lithuanian forests is over 13.1 million cubic metres, and current annual increment per hectare is 6.5 m³ (State Forest Survey Service of Lithuania, 2007).

FOREST OWNERSHIP

Prior to 1920, 65 percent of Lithuania's forest was privately owned. Under land reform in the 1920s, nationalization of part of the land reduced the share of pri-

vately owned forest to 32 percent. When the Soviets annexed Lithuania in 1940, they nationalized all private properties, including forest, until 100 percent of the forest was State owned.

The State now owns about half the forest area. As of 1 April 2007, private forests accounted for 35 percent of total forests (770 000 ha), and 14 percent of forest area was reserved for restitution (300 000 ha) (State Forest Survey Service of Lithuania, 2007).

About 460 000 people have presented applications to have their property rights restored and some 40 000 to buy land and/or forest. The aggregate demand on all land for privatization is 3.73 million hectares. Moreover, some 500 000 ha of marginal agricultural land (mostly privately owned) is expected to be afforested in the future by the State and private forest owners. This process has

already started; the plans are to establish some 200 000 ha of new forest by 2020 (Ministry of Agriculture of Lithuania, 2002). By 1 April 2007, Lithuania had 232 000 private forest owners (State Forest Survey Service of Lithuania, 2007). The total number of private forest holdings is 149 000, as family-owned forest holdings are usually held jointly with co-owners. Company ownership of forest land is new and accounts for several thousand hectares. For instance, Bangenes Miskas Ltd owns 3 000 ha, while several other companies have forest landholdings in the range of 1 000 to 2 000 ha.

Since the accession of Lithuania to the European Union on 1 May 2004, any company registered in the country has been able to purchase forest. Citizens of other countries are not yet allowed to own forest and agricultural land in Lithuania; after accession to the EU a seven-year transition period was foreseen before foreigners could purchase land/forest.

It is expected that after completion of the restitution process approximately 45 to 47 percent of Lithuania's forest land, or more than 900 000 ha, will be in private hands (including companies) (Gaizutis, 2005).

WOOD SUPPLY

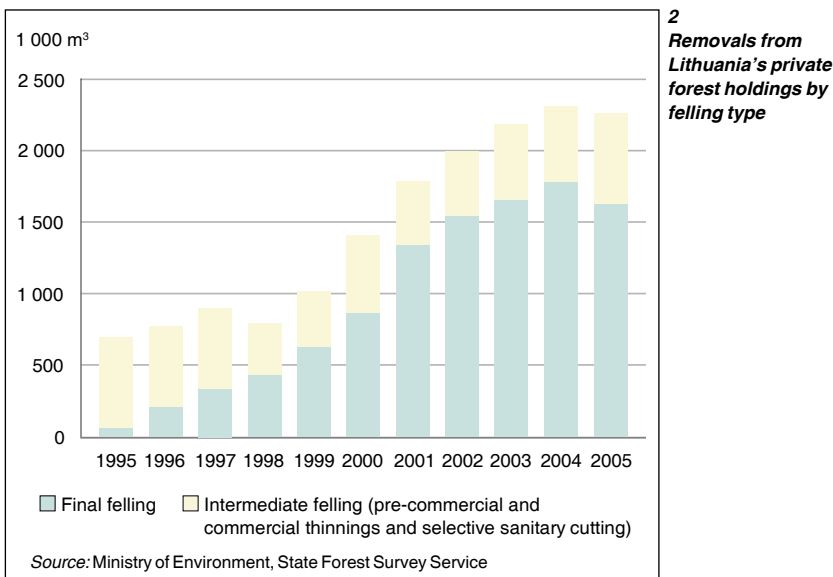
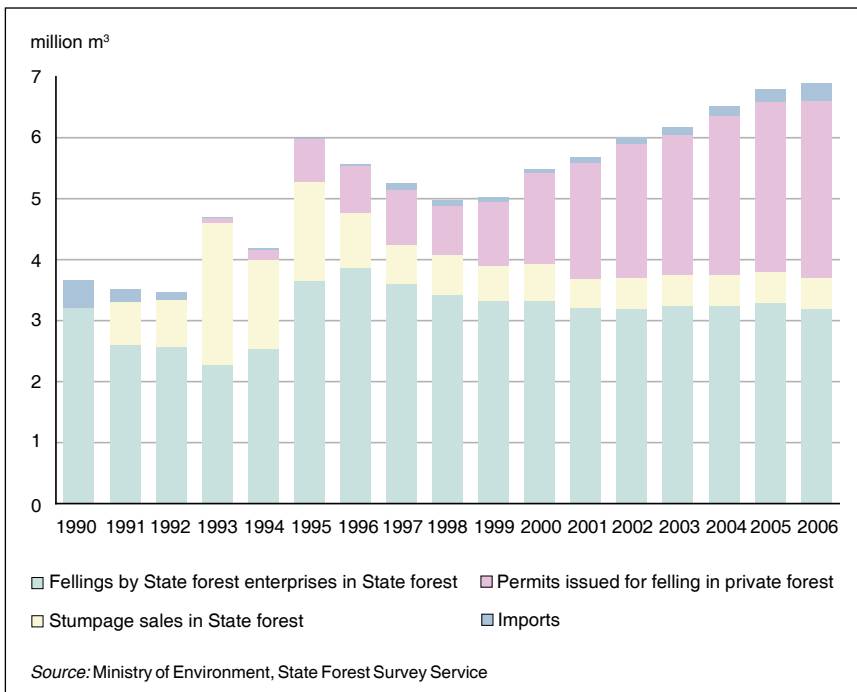
During recent years roundwood supplies from private forests have consistently

Planting of a new forest on former agricultural land by members of a forest owners' cooperative in Moletai District, Lithuania, spring 2006



1 KUDARAKSNIENE

1
Roundwood supply in Lithuania,
1990–2006



2
Removals from
Lithuania's private
forest holdings by
felling type

increased (Figure 1). Private forests currently account for some 3 million cubic metres per year, i.e. 40 to 47 percent of total roundwood supply. Final felling constitutes a significant part of the removals (Figure 2). In both State and private forest, harvesting is carried

out almost entirely by private contractor companies. Nearly 53 percent of roundwood is still sold by State forest enterprises (Figure 3).

The forests reserved for restitution represent an additional potential of 1.5 million cubic metres of wood annually,

currently protected by felling restrictions because of unclear ownership.

STRENGTHENED COOPERATION OF PRIVATE FOREST OWNERS

Forestry has only a small or even a negligible role in the household economy of many family forest owners in Lithuania. Because of the small, fragmented holdings, forest management is complicated and relatively expensive. The problem is magnified because many forest owners have limited or no knowledge about forest management and usually live far from their property. Nevertheless citizens of Lithuania prefer to regain their forest property rights rather than apply for the low compensation offered by the State, which is in the range of €300 to €400 per hectare. In contrast, the market price of premature and mature stands (standing timber plus forest land) in commercial coniferous forest can vary from €7 000 to more than €15 000 per hectare, so forest owners have the potential to earn money. The forest is also an important source of fuelwood supply for many households.

The Forest Owners' Association of Lithuania, the national public organization that represents and unites private forest owners, is helping to develop management structures for private forestry. Established in 1993, FOAL now has more than 5 500 active members. It also works with non-members through 38 regional associations.

FOAL has supported the development of a network of forest owners' cooperatives and collaborating companies. The first owners' cooperative was founded in 1998, and within a short time others were created as the industrial demand for roundwood and owners' demand for forestry services rapidly increased (Gaizutis, 2005). The network currently comprises 25 to 30 small companies and cooperatives, and it continues to expand rapidly. These companies employ over 130 skilled professional foresters offering forest owners the full range of forest management and marketing



Forest owners' cooperatives have purchased modern wood transportation equipment to guarantee stability of wood deliveries

COOPERATIVE AUKŠTATIŲ SILAS

services under the FOAL umbrella. However, the demand for services still exceeds current capabilities.

The network operates on two levels. In the field, cooperatives advise local forest owners and consolidate production volumes. These are then marketed through roundwood trading companies that specialize in supplying the largest buyers.

In 2001, FOAL created the market information system "Infomedis" (meaning "info tree") (see www.forest.lt/index.php?1123976489), a monthly bulletin supplying up-to-date market information on roundwood sales and prices in private forests, distributed by electronic mailing.

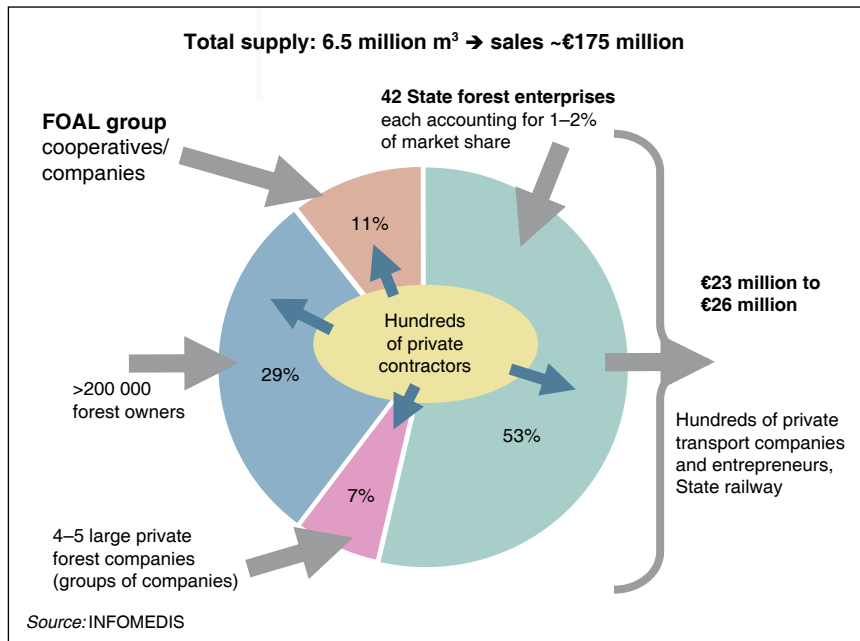
Members of forest owners' cooperatives have established a marketing company, Ekomediena Ltd (see www.ekomediena.lt), to centralize wood trade with the main domestic and foreign clients, which has operated successfully since October 2002. Other forestry and forest industry groups have also joined

the FOAL network – for example the wood panel and furniture production holding company Vakarų Medienos Grupe (VMG) and Bangene, the largest Lithuanian capital-based trading company, which exports roundwood (pulpwood and logs) mainly to Poland, the Russian Federation, Germany and Sweden.

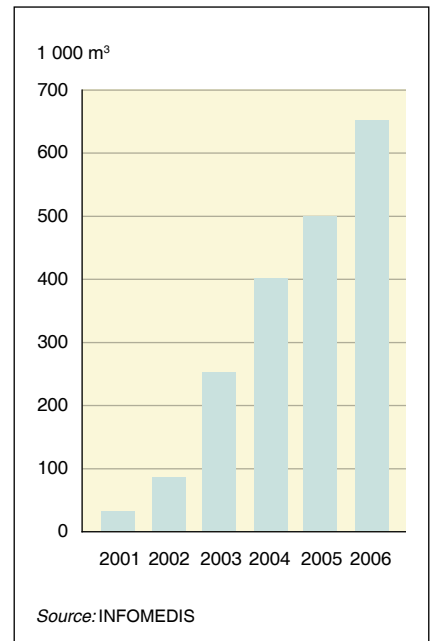
Although the volumes supplied by each of the FOAL cooperatives and companies are small, nearly 70 to 80 percent of their roundwood is sold through specialized wood trading companies that belong to the network, which now supplies 20 000 to 25 000 m³ of roundwood monthly. Being a large supplier, such a network is able to guarantee stability and favourable conditions for both buyers of roundwood and producers – family forest owners.

The volume of roundwood marketed through the FOAL network has increased from only 30 000 m³ in 2001 to 650 000 m³ by 2006 – i.e. by 2 166 percent (Figure 4). At the same time total roundwood supply from private forests in Lithuania has increased by only 35 to 40 percent. Thus the companies under the

3
Main actors in the roundwood market of Lithuania



4
Roundwood sales by companies under the FOAL umbrella



FOAL umbrella have captured the additional market share; in 2006 they sold 26 percent of roundwood from private forest (compared with only 2 percent in 2001) and 10 percent of total Lithuanian roundwood supply. FOAL has been the largest roundwood supplier in Lithuania since 2004.

Forest owners can participate in the network in a number of different ways. They can be full members of a cooperative; they can sign a long-term forest management agreement; they can sell standing timber (or a whole forest) through the network; or they can simply purchase forestry services.

FOAL has become the largest roundwood supplier in Lithuania because the better bargaining power at the large scale enables it to achieve sales prices that are about 10 percent higher than the market average. These benefits are then passed back to the forest owner. Before the

cooperative movement took off, roundwood from private forests sold for 20 percent less than the market average.

CONCLUSION

The outlook for the FOAL network is very positive. It has credibility with the largest buyers in the market. It is also looking at future alliances, cooperation and vertical integration to lead to further benefits that can be passed on to the small-scale forest owners who are members of the cooperatives. ♦



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Stimulating smallholder tree planting – lessons from Africa and Asia

A.A. Nawir, H. Kassa, M. Sandewall, D. Dore, B. Campbell, B. Ohlsson and M. Bekele

Cases from Ethiopia, Indonesia, South Africa and Viet Nam illustrate ways of promoting small-scale and community timber production.

From 1990 to 2005 the area of tropical forest plantations increased from 69 million to 93 million hectares (FAO, 2006). Although plantations account for 11 percent of the total forest area in Asia and the Pacific and only 2 percent in Africa, the two regions share a trend towards increased involvement of the private sector and small-scale producers in plantation establishment, which previously was primarily government controlled (Persson, 2003; Sam and Trung, 2001).

Small-scale forest plantations provide a range of benefits to rural communities, including fuelwood, fodder and wood for building and everyday uses, as well as environmental and amenity benefits. Yet small-scale producers and poor households still reap only a small portion of the commercial benefits from plantation-derived wood and processed wood products, even though plantations in developing countries produce billions of dollars worth of these products annually.

This article describes some different schemes through which smallholders participate in establishing and managing productive plantations. These reflect a continuum from management by tree growers themselves to private corporate initiatives, with government-initiated collaborative management in between. For each of these schemes, the article identifies key incentives – defined as “payments or services that increase the comparative advantage of forest plantations over other land use options and thus stimulate investments in plantation establishment and management” (Enters, Durst and Brown, 2003) – that can promote smallholder involvement in tree planting, although the strategies of course vary according to the country and the local conditions. The article highlights the importance of supportive policies and legislation, and clear, secure forest land tenure and management rights as enabling conditions for sustainable smallholder tree growing.

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Farmers in the Debre Berhan area of Ethiopia plant trees mainly around homesteads

H. KASSA



In Viet Nam, multicrop plantations with forest and fruit trees provide opportunities for low and middle-income farmers to raise their standard of living

FARM FORESTRY IN ETHIOPIA, INDONESIA AND VIET NAM

In Ethiopia, farm-based forestry has been carried out for a century. Starting around 1910, private plantations around Addis Ababa provided the capital with energy and construction material. In the 1970s, the government supported “peasant forestry” based on community ownership, but these plantations deteriorated over time as there were no proper management plans and the relationship between communities and the State in managing and/or owning these plantations remained unclear (Abebe, 1998). The country has not yet put in place a support mechanism to encourage farmers and commercial entrepreneurs to engage in commercial forestry (Million, 2001)

In Indonesia, commercial small-scale farm forestry on community-owned land has been practised since the 1970s and is widely believed to be more successful than industrial plantation forestry carried out by concessionaires on a large-scale in State forest, particularly in terms of landscape and socio-economic benefits (Nawir *et al.*, 2007). Farm forestry accounts for 43 percent of the total forest plantation area in the country, with 3.43 million households involved in managing 4.2 million hectares (FAO, 2001; Ministry of Forestry, Indonesia, 1998). Common species include falcata (*Paraserianthes falcataria*) and teak (*Tectona grandis*).

In Viet Nam, in the 1970s cooperatives began to establish plantations to supply State organizations with raw material. Private farm forestry emerged after the introduction of free-market policy reforms in 1987 and subsequent allocation and privatization of forest land. Since the early 1990s, policies and legislation have supported the development of farm forestry. The Five Million Hectare Reforestation Programme of 1998 envisaged that some 2 million hectares would be reforested by 2010 through private-sector efforts, including farm-based plantation forestry, for the market and to support environmental protection. Since then more than 80 000 ha have been reforested annually (FAO, 2006). Farm forestry has expanded and thrived also in the industrialized regions of the country (Sam and Trung, 2001).

Varied agroforestry systems have evolved, reflecting the needs and conditions of different socio-economic strata.

Key incentives for farmers

Expected returns from planted timber. Smallholders involved in farm forestry are mostly self-financed. The expected returns are usually sufficient incentive for plantation maintenance. However, governments have often provided free seedlings to smallholders. In three provinces studied in Viet Nam (M. Sandewall, B. Ohlsson, K. Sandewall and L.S. Viet, in preparation), opportunities to borrow money from banks for investment in forest plantations were rarely available to or used by smallholders.

Unique market niche for wood produced through farm forestry. In Java, Indonesia, smallholder farm foresters have a market niche in small home industries. These enterprises often prefer to buy logs (e.g. teak) sourced from farm forestry to avoid difficulties of bargaining with big processing companies; to negotiate prices more easily, since no standardized price applies; and to take advantage of simpler administrative procedures and frequently shorter distances. However, despite this opportunity, smallholders rely on intermediaries (timber brokers) to harvest and transport the wood to the



Small-scale private nurseries – entrepreneurship in the forest industrial region of northern Viet Nam

buyers. Consequently, these tree growers have little bargaining power over prices. In northern Viet Nam, markets for farm-produced timber include the mining industry, fuelwood consumers in urban centres and the exporting chip industry. A major market force is the Bai Bang Pulp and Paper Mill, which purchases some 200 000 tonnes of wood per annum, all from a large number of small, mainly farm-based producers.

Risks and transaction costs borne by intermediaries. Intermediaries may capture the highest proportion of profit margins, but they also bear a number of risks and have high transaction costs relative to tree growers. They collect mixed-quality timber from a large number of growers, and receive low prices for low-quality wood. With prices uncontrolled, they have to negotiate prices with many buyers and sellers. They also have to deal with the authorities and bear the cost of government restrictions on postharvest processes, including wood transport, which is often smoothed through bribes. Removing or reducing the restrictions could eliminate these informal “fees” and help intermediaries offer better prices. At the same time, it becomes crucial to empower smallholders by improving their access to markets and market information, so they can bargain for better prices.

GOVERNMENT-ASSISTED INITIATIVES: COLLABORATIVE PLANTATION MANAGEMENT IN INDONESIA AND ETHIOPIA

The Governments of Indonesia and Ethiopia have initiated collaborative plantation management programmes to address growing problems of illegal logging and forest encroachment by involving local communities. These governments expect that by allocating communities rights to establish and manage plantations for certain periods and by guaranteeing them a share in the profits from the timber, they can help strengthen

the communities’ commitment to sustainable forest management.

Collaborative plantation management involves local community cooperatives or collective groups and different levels of government, e.g. provincial or district. In Ethiopia, since about the 1990s, the government has allocated some plantations (generally *Eucalyptus* spp.) for communities to manage. In Indonesia, this form of management has been rapidly expanding since the implementation of decentralization policy in 1998. The government has most recently given priority to plantation development by rural smallholders on 5.4 million hectares through its Community-Based Plantations programme (Ministry of Forestry, Indonesia, 2006).

Key incentives provided by government

Direct incentives to plant. Governments have long given subsidies or financial incentives in a range of packages that can include plantation establishment funds, physical inputs, free seedlings, paid labour for government projects and loan schemes. However, maintenance costs are often excluded. In Indonesia, the source of these direct incentives is usually reforestation funds, which are government revenues from timber concession companies allocated to finance rehabilitation of degraded forest (Nawir *et al.*, 2007). Despite their long history, direct incentives may have marginal impact. They may even lead to the mis-distribution of funds and can discourage tree planting (Enters, Durst and Brown, 2003). To be effective, financial incentives require supporting policies and conditions, such as secure tenure (Williams, 2001).

A guarantee of shared profits from the harvested timber. Guaranteed equal and fair profit-sharing agreements between State and community groups have attracted many smallholders to tree planting, for example in Ethiopia and

the Philippines (Calderon and Nawir, 2006). In Indonesia, this strategy is still strongly debated, with many believing that the government should not function as a business entity that receives revenues from plantation timber.

Long-term management rights. Governments have increasingly granted community management rights of 25 to 60 years, following political economic changes that favour greater community involvement in forest management, including forest plantation development. Such a policy has been applied in Ethiopia since around the 1990s and was adopted in 2007 in Indonesia. In Ethiopia, new regional land administration policies allow issuance of landownership certificates to landholders, and owners have the right to lease their plots to others for up to 25 years; however, land still cannot be officially bought or sold.

CORPORATE INITIATIVES: OUTGROWER SCHEMES IN SOUTH AFRICA AND INDONESIA

Outgrower schemes in South Africa were initiated by two major corporations, Sappi (since 1983) and Mondi (since 1989), which teamed up with smallholder eucalypt plantation growers in the communal lands of KwaZulu Natal, along South Africa’s eastern coastline. The schemes arose from the need for land to produce raw timber for expanding mill development. Today more than 10 000 smallholders, of whom 80 percent are women, grow eucalypts on a contract basis for Mondi and Sappi (Chamberlain *et al.*, 2005).

Indonesian corporations introduced outgrower schemes in 1999/2000 to resolve long-term land conflicts inside their concessions (Nawir, Santoso and Mudhofar, 2003). Although there are no official statistics on total outgrower areas, a growing number of companies are working with outgrowers as part of their commitment to corporate social responsibility. For example, ten



Smallholder plantation in Zululand, South Africa

Acacia mangium plantation companies have outgrower schemes covering about 180 000 ha, which is about 11 percent of their concession areas (A.A. Nawir and ComForLink, in preparation). Companies consider this to be an effective approach for ensuring a sustainable supply of timber while sharing the benefits (and risks) with local communities. Furthermore, it provides smallholder outgrowers with an option to use their idle lands for future economic returns.

Key incentives for outgrowers

Capital assistance in tree growing and maintenance. Companies using outgrower schemes provide strong incentives for smallholders to enter into partnership under a contract agreement, in line with the local conditions and the partners' needs, by guaranteeing fair prices, providing communities with social services and forming growers' associations or committees as channels for discussing issues of mutual economic interest. The company places the responsibilities for supervising jointly managed lands and trees, such as protecting them from theft and/or fire, in the hands of tree growers. To address the capital constraints, Sappi and Mondi pay an advance – loosely based on the land rental price – once the smallholders have successfully developed plantations. This payment is essentially a loan advanced against the value of the trees at the time of harvest. Other

incentives include access to improved *Eucalyptus* clones, often at subsidized cost; inputs at competitive prices; training and extension programmes; and assistance for elderly residents with sufficient land but no ability to provide labour. Companies also bear all the costs for harvesting and transportation to the mill gates, which are subcontracted to other community members.

Guaranteed markets, although prices need to be negotiated. The degree to which companies provide a guaranteed market varies from one outgrower scheme to another. In monopsony (one buyer) situations, e.g. acacias grown by smallholders in Sumatra, Indonesia, companies tend to buy at low prices. With growing local markets for some hardwood species, companies have to buy at competitive prices or growers may prefer to sell their wood elsewhere. In South Africa, during periods of oversupply the companies have introduced a quota delivery system giving the contracted growers preference over independent growers. When sources of wood have been scarcer, quotas have been abandoned and some growers have preferred to sell independently at market prices.

Assistance during the period between planting and harvesting. The long period from first planting until harvesting (at least six to eight years even for fast-

growing species) is a problem for communities with few income alternatives. To overcome pressing cash flow problems of low-income smallholders during this period, Sappi introduced additional interest-free annual advances for plantation maintenance and firebreak protection. Mondi charges 10 percent interest on similar loans. In Indonesia, one solution has been to provide outgrowers with some land for non-forestry cash crops.

ENABLING CONDITIONS FOR SMALLHOLDER ENGAGEMENT IN TREE GROWING

The most important enabling conditions for smallholder production are favourable policies across different aspects of management and marketing; and clear and secure land tenure and rights over crops, including the right to manage, harvest, transport and market produced wood. Increased awareness of corporate social responsibility, defined as “the continuing commitment by business to behave ethically and contribute to economic development while improving

In Sumatra, Indonesia, competing income opportunities from oil-palm plantation may influence tree growers to break their contract agreement under Acacia outgrower schemes



HEATHWORTH

the quality of life of the workforce and their families as well as of the local community and society at large” (World Business Council for Sustainable Development, 1999), might also encourage large private and State enterprises to give more serious attention to facilitating smallholder tree growing.

Policies supporting tree planting

A clear policy framework for securing community rights to manage State forest, and supportive local regulations in line with local community initiatives, have been key to successful smallholder farm forestry and collaborative plantation management in Indonesia (Nawir *et al.*, 2007).

In Ethiopia, a recent forest policy provides farmers tax incentives that are proportionate to the number of trees they plant. The government also encourages the private sector to invest in forestry. It has lifted controls on pricing and marketing of forest products, paving the way for an open and competitive market for wood. Farmers now face little restriction in selling tree products.

In Viet Nam, both general policy (the development of a free market) and specific policies and legislation have supported farm-based private plantation forestry.

Clear and secure tenure

South Africa provides an interesting example of how and why smallholders have planted trees to secure rights to their land in communal areas. The government intended to establish tree plantations in communal areas along the coast to stabilize dunes. Under threat of being evicted from their area, households decided to plant eucalypts themselves. Under the patriarchal land tenure system of the Zulu, a widow can secure tenure over her late husband’s land by planting eucalypts. Outgrower schemes have played a critical part in helping women obtain tenure under this system (Cairns, 2003).

The new Forestry Proclamation in Ethiopia recognizes private forest

ownership and encourages joint State–community management of forests. It also ensures ownership security and transfer rights over lands planted with trees in accordance with the new Federal Land Use and Land Administration Proclamation. Land redistribution is becoming less frequent in Ethiopia, and policy-makers are also taking some measures to address tenure insecurity, for example policies that allow issuance of landownership certificates to landholders, as discussed earlier.

Much of the natural forest in the mountainous parts of Viet Nam was logged and cleared for shifting cultivation during the 1960s, 1970s and 1980s. The allocation of land (conferral of formal long-term tenure rights) to individual households and entities around 1990 had an almost immediate positive impact on the number of forest and cash crop plantations established by smallholders. From 1990 to 2005 the productive forest plantation area in Viet Nam increased 7 percent per year, mainly through farm-based initiatives (FAO, 2006).

Growing global attention towards corporate social responsibility

Companies such as Sappi and Mondi in South Africa have an incentive to promote smallholder schemes not just to make profits, but also to be seen as socially and environmentally responsible. They need to demonstrate – not just to the government, non-governmental organizations and the community, but increasingly to their shareholders – that they engage in a fair and transparent commercial process with smallholders from poor communities. International certification by the Forest Stewardship Council (FSC) has conferred a badge of corporate social responsibility on these corporations. Despite these positive signs, there have been calls to empower smallholders more by increasing their bargaining power (Chamberlain *et al.*, 2005; Howard *et al.*, 2005; Cairns, 2003; Mayers and Vermeulen, 2002).

Some 40 percent of the forest area in Viet Nam is owned by State Forest Enterprises, which historically employed a large workforce. The system is currently being reformed, and State forest plantations are gradually being replaced by farm forestry. A concern for State Forest Enterprises is how to provide jobs and livelihoods for its former workers. Leasing out the management of its forests to farmers and entrepreneurs is a common practice in line with corporate social responsibility.

CONCLUSIONS AND RECOMMENDATIONS

Smallholders are involved in plantation timber production through various schemes. Farm forestry has been driven by expectations of returns from wood selling. Collaborative plantation management aims to involve communities in addressing the problems of illegal logging and forest encroachment. Outgrower schemes in South Africa have been driven by the companies’ needs to secure their raw materials, while in Indonesia the primary driver has been tenure conflict, which can severely disrupt a company’s operation. Each of these schemes requires different financial and other incentives to stimulate smallholder involvement in tree planting.

Locally and nationally recognized systems of secure access to land, supportive policies and legislation, and reliable and stable markets have contributed a great deal to the establishment of private, farm-based plantation forestry. In a national context the aggregate impact of farm-based tree plantations in Asia and Africa is considerable. Empowering smallholders – specifically by improving their access to markets and market information and by offsetting high transaction costs – is also important, to sustain benefits generated from small-scale plantations and thus to provide investors confidence to invest.

Governments can address some of the tenure-related problems by developing mechanisms such as collaborative forest

management arrangements. Governments and non-governmental development groups must do more to help smallholders improve the marketability of their products in local and international markets and increase their bargaining power. Mapping of industries and their buying capacities is vital to improve understanding of potential markets. Assisting small-scale producers to label their products could help in entering the “fair trade” market niche. Governments can also provide marketing incentives such as lower taxes and ensured raw material sources for firms that buy products from community-based forest management projects.

Corporate–smallholder partnerships in plantation forestry are increasingly promoted as a means of ensuring tree growers access to markets. Issues that require attention in this regard include how to secure and maintain markets, obtain rewarding prices for producers, provide technical assistance to ensure adequate product quality and quantity, and develop favourable strategies for low-income smallholders during the period between planting and harvesting. The success of these partnerships depends, however, on company and community working creatively to develop incentives for mutual benefits. Further, government participation and support through the establishment of enabling regulations are indispensable in creating a secure environment for investing, trading and doing business in general. ♦



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Vulnerabilities of smallholder plantings

J. Carle

A significant portion of planted forests (including forest plantations and the planted component of semi-natural forests) are owned by smallholders. Of the 272 million hectares of planted forests globally (excluding trees outside forests), smallholders having between 0.5 and 100 ha own 26 percent, the corporate private sector 15 percent and government 59 percent (FAO, 2006). Moreover, of the 205 million hectares of planted forests managed for productive functions, smallholders own 32 percent, the corporate private sector 18 percent and governments 50 percent.

Smallholder planted forests are characterized by diverse sites, mechanisms, species, silvicultural practices, rotations and uses tailored to suit smallholders' own livelihood needs and support sustainable land use. In developing countries, smallholder plantings can contribute positively to achieving food security and alleviating poverty, and this gives governments and the corporate private sector reason to establish policies and incentives that encourage smallholders to invest in planted forests. However, many smallholders, particularly in developing countries, are uniquely vulnerable to commercial, technical, policy, legal, regulatory and institutional difficulties that need to be recognized and overcome. These may include:

- lack of clear enabling policies and procedures regarding land tenure, crop ownership and rights to manage, harvest, transport and market forest products;
- complex incentives and insufficient access to development funds to invest in planted forests, exacerbated by high interest rates

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FAO/J. CARLE

Smallholder forestry nursery and plantings, near Luanda, Angola

- and the stringent requirements for collateral against funds borrowed;
- weak technical knowledge and poor access to information on germplasm and reproductive materials, nursery practices, site preparation, planting, tending, silviculture, protection (against insects, diseases, other pests, fire), harvesting and the measurement of volume and value of harvested forest products;
- weak commercial and business knowledge and weak bargaining power in contracts and agreements (harvesting, transport, sales).
- limited access to market information on products, specifications, market prices, harvesting and transporting contract rates and the implications for investment and management decision-making;
- fragmentation and isolation of small production units, and attendant problems of basic communications and networking;
- insufficient resources of government technical and extension services to support smallholder investment in planted forests;
- disadvantages that management tools for sustainable forest management (e.g. codes of best practice, certification) can represent for smallholder investment.

These vulnerabilities can increase risk and result in suboptimal technical and commercial performance of smallholder investments in planted forests – poor quality of planted forests and forest products, low yields, high contract prices, low market prices and inequitable sharing of benefits.

Smallholder associations, in addition to governments and non-governmental organizations, therefore have an increasingly important role in representing their members in policy dialogue, providing technical support and extension and assisting marketing and business decision-making to improve the smallholder returns on investment in planted forests.



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Small-scale forest operations: examples from Asia and the Pacific

P. Dugan

Examples from Viet Nam, Papua New Guinea and the Lao People's Democratic Republic illustrate how timber harvesting using animals and simple tools reduces damage to the environment while creating employment and income opportunities for poor communities.

In conventional logging as practiced in many countries today, large logs are removed from the forest with powerful bulldozers, skidders and yarders, loaded onto large trucks, hauled over wide roads, transported to high-volume sawmills, and then run through headrigs, edgers, trimmers and cut-off saws to produce timber for construction, furniture and other uses. This scale of operations is often justified to obtain economies of scale in supplying raw materials for industrial pulp and paper, plywood, sawn timber and panel processing plants, which generate employment and export income that is vital to the economies of many countries.

However, where communities near the forest require more modest volumes of rough sawn timber principally for their own use, sale or added-value processing (e.g. furniture), small-scale harvesting can offer benefits consistent with international goals of poverty reduction, environmental conservation and more equitable sharing of wealth derived from natural resources.

Small-scale harvesting involves break-

down of logs right in the forest. After felled trees are bucked (i.e. cut cross-wise into sections), two-person ripping saws are used to reduce the round logs into boards (flitches). The boards are loaded onto sleds (travois) and skidded out of the forest by animal power or small tractors for sale or further processing, usually in neighbouring villages. These low-powered skidding methods are feasible because average sled loads (around 0.5 m³) only weigh about 250 to 500 kg (USAID, 1998). The skid road construction required in conventional logging is replaced by establishment of narrow temporary pathways (about 0.8 m wide) cut through the underbrush with machetes. Vegetation cut in the process is laid crosswise on the pathway surface to cushion the soil and reduce friction that would otherwise impede movement of the sleds. Repeated use of a pathway, which could lead to gully formation, is easily avoided as harvesting is shifted regularly from one location to the next.

Light loads and low-powered skidding normally cause less environmental

Two-person handsaw is used for primary breakdown of logs in the forest



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damage than the heavy loads prevalent in conventional logging operations. Careful planning of skid trails and appropriate procedures can significantly minimize the damage in tractor skidding, but unfortunately, the observation of best practices is the exception rather than the rule in many tropical countries.

EXTRACTING TOPS AND BRANCHES IN VIET NAM

In Viet Nam, all natural forests are considered property of the State. The government-owned State Forest Enterprises hires logging contractors to harvest the timber and pays them by cubic metre of output. When the contractors buck felled trees, they generally make the last cut below the first branch and leave a portion of the main stem (trunk) and all of the crown (tops and branches) in the forest, because it is not profitable for them to extract this raw material with bulldozers, self-loading trucks or other conventional logging equipment.

Until recently, regulations governing the use of tops and branches were vague. Villagers could obtain permission to gather them for household use (e.g. fuelwood), but selling this material was either prohibited or severely restricted depending on (among others) the attitudes of the local State Forest Enterprise officers. This situation changed in 2005 with Prime Minister's Decision No. 40/2005/QD-BNN promulgating the Regulation on Exploitation of Timber and Other Forest Products, which authorizes village-based harvesting of tops and branches and promotes active community participation in forest management.

At So Pai Village, Gia Lai Province in the central highlands of Viet Nam, local residents are harvesting these portions of felled trees with buffaloes and *cong-nong* – locally assembled small tractors. The villagers sell their production to furniture makers and other wood processors in the nearby town of Kanak – about 20 km from the forest. The processors are happy to get the raw

In So Pai, Viet Nam, tops and branches – material that was previously left in the forest – are extracted for sale to furniture makers and other wood processors



Using buffaloes for skidding reduces damage to soil and residual vegetation – and avoids high equipment costs and burning of fossil fuel (Viet Nam)



material and the villagers are happy they have a new source of income. Average direct production costs (including skidding and trucking to Kanak) are about 415 000 dong (₫) per cubic meter (approximately US\$25). Processors in Kanak buy the raw material at an average price of 840 000 (approximately US\$50) (Manila, 2006). Clearly, small-scale harvesting is a profitable venture for the So Pai villagers.

Activities in So Pai are one component of the FAO-assisted regional project “Enhancing Sustainable Forest Harvesting in Asia”, which promotes implementation of reduced-impact logging (RIL) practices consistent with the new directions in forest management prompted by Decision 40. Pham Minh Thoa, Deputy Director of Forestry and national focal person for the FAO project, confirms that top and branch extrac-

tion is only the beginning. Village-level processing is envisioned as the next step forward, starting with rough-cut timber sawn to dimensions suitable for Kanak processors to convert into furniture and other products. Steps required to ensure mutual profit for the So Pai villagers, Kanak processors and government will include negotiations on price, quality and delivery schedules and establishment of government regulations and procedures for collection of royalties on semi-finished products. Currently, royalties and taxes are levied per cubic metre of raw material.

In June 2007, local government officers and other decision-makers witnessed So Pai operations during a field trip sponsored by the FAO project. The visit was covered by the national television network. With increasing awareness of the financial, environmental and social

benefits of small-scale forestry, the So Pai experience may provide a model for replication elsewhere in Viet Nam.

MOBILE SAWMILLS IN PAPUA NEW GUINEA

In the late 1990s, the European Union (EU)-supported Islands Region Environment Community Development Programme (RECDP) provided mobile sawmills to residents of island communities, along with technical assistance on organization, planning and training in mill operations. The mills were used to produce rough sawn timber in the forest which was then hauled to the roadside via bullock cart for transport by truck to finishing plants. Over time, RECDP evolved into the present Papua New Guinea Eco-Forestry Programme (EFP), also assisted by the EU. Timber produced by villagers and certified as originating from sustainably managed forests has been exported to overseas markets.

Resistance from conventional loggers and government pressure to generate forestry revenue quickly by promoting log exports has hampered expansion of the mobile sawmill approach. Furthermore, government has limited capability to monitor many small operations scattered over wide areas. This constraint makes it difficult to prevent the use of mobile sawmills by illegal loggers. Thus many government foresters are reluctant to support expansion of the approach. However, the idea has been planted and communities have tasted the benefits in terms of employment, income and (importantly) recognition of their ability to participate actively in forest management. National and international non-governmental organizations (NGOs) continue to advocate for adherence to principles of community-based, small-scale, sustainable forest management. The RECDP and EFP experiences provide a platform for moving ahead on small-scale operations in Papua New Guinea.

Operating a mobile sawmill in the forest, Papua New Guinea



FAO/FO-5684/P-DURST

LAO PRODUCERS SHIFT TO SMALLER OPERATIONS

In the Lao People's Democratic Republic, policies conducive to small-scale forestry operations are already in place. Operations consistent with these policies – with an emphasis on reduced-impact logging – are being developed in Naphakeo Village in Mahaxai District, Khammouane Province, as part of the FAO-assisted regional project.

Logging quotas in the Lao People's Democratic Republic are awarded annually by the government and are for the most part in the range of 1 000 to 2 000 m³ per production forest unit. The units range in area from about 500 to 1 000 ha. Despite the relatively modest volumes per quota, conventional logging practices (e.g. extraction with heavy equipment) are the norm. However, producers are gradually shifting in the direction of small-scale operations.

The Naphakeo forests contain a mix of high-value species (e.g. dipterocarps) and currently underused *Lagerstroemia* species. Villagers hand-saw the latter into boards or split the timber into roof shingles, both for local use. Building on these village-based practices, the project is exploring markets for *Lagerstroemia* wood. Initial findings indicate that drawer sides would be a potentially profitable market if linkages can be established with a small to medium-sized firm willing to absorb small vol-



FAO/FO-5683/P-DURST

House built of timber from the mobile sawmill

umes of rough-sawn timber. This would help transform a village-based practice into a reliable source of income for local residents. In brief, a small-scale, RIL-compliant appropriate technology already exists. Now the challenge is how to move forward towards application of this technology on a broader scale.

ALL REQUIRE ENABLING REGULATIONS

While small-scale operations have proved their value in many countries, fundamental constraints to optimum deployment of Asia's vast resource of underused rural labour and traditional



Training of Lao village foresters in reduced-impact logging techniques

skills still remain. At or very near the top of any list of constraints is the matter of scaling procedures. Regulations in most countries prohibit flitching in the forest because of fears that it would exacerbate illegal logging and make tax collection difficult. While not to be ignored, these concerns tend to inhibit the application of appropriate technology to solve what is essentially a law-enforcement and monitoring issue applicable to both small- and large-scale logging operations. Modification of scaling regulations, and permitting primary processing in the forest, is an essential first step in creating conditions that would enhance the role of small-scale forestry.

CONCLUSION

Forest harvesting is almost always a controversial topic. Small-scale approaches are no exception to this general rule. For example, some might argue that extraction of tops and branches in Viet Nam decreases the recycling of nutrients. Others, still taking an environmental perspective, might justify this by noting that removal of combustible material helps reduce the threat of forest fire. From a management perspective, government foresters may contend that efficient monitoring of many small operations would be nearly impossible. On the other hand, NGOs involved in forest

management may argue that, with help, communities and local government units can develop their own monitoring skills and the ability to protect the forests on which they depend for water and other amenities.

Opponents of primary processing in the woods might cite the conversion efficiencies which are lower than those of a well-run sawmill. A study in the Philippines, for example, found that sawmill conversion efficiency ranged from 60 to 70 percent, compared with a 50 to 55 percent range when logs were converted into rough-sawn boards or flitches in the woods (Philippine American Timber Co. production statistics). This comparison highlights the decision-making trade-offs central to consideration of small-scale harvesting.

Is it justifiable to accept a lower conversion efficiency to create additional employment and spend less foreign exchange on heavy equipment? Given the variability of forest conditions, socio-economic situations and purposes for harvesting forest products, there is no single answer to this question. When applied in a manner consistent with sound management practices, small-scale harvesting and conventional logging are both important components of forestry. Indeed, combinations of conventional logging and small-scale harvesting may

well be an appropriate way forward, assuming a regulatory environment that supports community–company partnerships in the forestry sector.

All pros and cons considered, the potential of small-scale harvesting to increase employment and help reduce poverty cannot be denied. The average production of a two-person handsaw team ranges from 0.25 to 0.50 m³ per day (Bagong Pagasa Foundation, 2006). Even at a highly conservative price of US\$40 per cubic metre, the average daily income per team member would be about US\$5 ($0.25 \times 40 \div 2 = 5$), far more than the meager earning on which millions of people subsist in the developing world. Furthermore, from a forest conservation perspective, the employment potential of small-scale harvesting provides a practical alternative to the widespread, survival-driven, slash-and-burn deforestation that is a major constraint to achievement of the social, economic and environmental goals of sustainable forest management.

It is in these crucial contexts that small-scale harvesting deserves increased attention, particularly in the areas of policy, research, training, organization of communities, linkage to markets and opportunities for complementarity with conventional logging. ♦



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A forest owners' cooperative in Japan: obtaining benefits of certification for small-scale forests

I. Ota

In Japan, a forest-rich country where most of the forests are owned by smallholders, forest owners' cooperatives seek forest certification to revitalize waning local forestry activities.

Japan is among the most densely forested countries in the world, with 25 million hectares covered by forest, or 66 percent of the land area. Its standing volume of timber is over 4 billion cubic metres (Forestry Agency of Japan, 2006). Most of the timber resources are located in softwood plantation forests, which account for about 40 percent of the total forest land area in the country. Two important plantation species are Japanese cedar (*Cryptomeria japonica*) and Japanese cypress (*Chamaecyparis obtusa*), both native coniferous species. Historically, enormous efforts have been made to create vast plantation forests, mainly on steep slopes all over the small islands of Japan.

More than half of the forest lands in Japan are owned by the private sector, mostly on a small scale. Among the 2.5 million individual owners holding at least 0.1 ha of forest land, the average holding is only 2.7 ha, and these forests are usually fragmented. Some 1.5 million of these owners hold less than 1 ha.

To overcome the difficulties associated with such small-scale and fragmented forest ownership patterns and to allow benefits of scale, forest owners' cooperatives are actively working for individual owners throughout the country. They make forest plans on behalf of forest owners to help them obtain government subsidies for planting trees and tending forest stands. They also provide services in forest harvesting and in transport and sale of timber, and some of them even run sawmills and other processing factories for adding value to timber from members' forests.

This article describes the activities and challenges of a Japanese forest owners' cooperative that is using forest certification as a forest products marketing tool and a means of encouraging forest owners to manage their forests more actively. The success of the Yusuvara Forest Owners' Cooperative in obtaining Forest Stewardship Council (FSC) certification suggests several important points for small-scale forestry.

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The forests of Yusuvara



FOREST CERTIFICATION IN JAPAN

Forest certification was first introduced in Japan in 2000. The number of FSC forest management and chain of custody certificates has gradually expanded since then. At present 24 forests in Japan have received FSC forest management certificates. The total area of FSC-certified forest is 276 460 ha (as of June 2007). In addition, 444 organizations have obtained chain of custody certification. This number is the third largest in the world after the United Kingdom and the United States. Eleven of the 24 forest management certificates have



Well-managed FSC-certified Japanese cedar (Cryptomeria japonica) stand in the Yusuhara Forest Owners' Cooperative

been obtained by forest owners' cooperatives as resource managers of forest land under multiple ownership. This type of group certification is a rational and effective way to deal with FSC certification in countries like Japan where most forest holdings are small in scale and individual action would be too costly and administratively difficult to handle.

Because of the high standards and high costs involved in FSC certification, the Japanese forest sector wanted an additional framework for domestic certification and to this end created the Sustainable Green Ecosystem Council (SGEC) in 2003. There are now 41 SGEC certified forests with a total area of 391 780 ha (as of April 2007). This certification scheme is favourable for municipal forests and large companies, but fewer forest owners' cooperatives have been certified by SGEC than by FSC.

YUSUHARA FOREST OWNERS' COOPERATIVE: A SUCCESSFUL EXAMPLE OF FSC CERTIFICATION

Yusuhara is a small and sparsely populated municipality in a remote mountainous area of southwestern Japan, in Kochi Prefecture on Shikoku Island. Its population is about 4 200, which is less than half the population of 50 years ago. The area of the municipality is 23 651 ha, of which 21 321 ha or 90.1 percent is covered by dense forest.

Yusuhara Forest Owners' Cooperative (YFOC), the only such cooperative in

Yusuhara, was established in 1956. It currently has 1 245 member households and about 40 full-time employees, as well as 30 contracted forest workers. The organizational structure comprises four sections: general affairs, forest production, forest management and timber processing. Activities for forest certification are carried out by the forest production section, which focuses on harvesting and thinning operations, and by the forest management section, which deals with tree planting, weeding and road construction. The cooperative runs a log sorting yard and a sawmill, for which the timber processing section is responsible.

In October 2000, YFOC successfully received forest certification by FSC through SmartWood. It was the second forest in Japan to obtain FSC certification, and the first to do so with a forest owners' cooperative as the resource manager. At the time of the assessment, about ten conditions had to be met on a one- to five-year horizon, but the overall performance of the cooperative's forest management is high. The high score can be attributed mainly to two factors: a long tradition of good forest practices in Japan, and the great efforts made by YFOC to cope with new international environmental standards over many years.

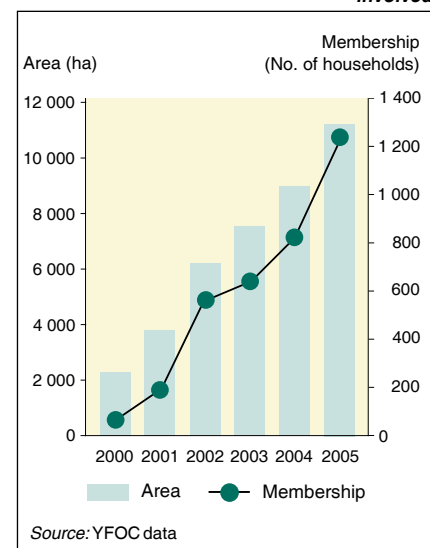
ECONOMIC RETURN FROM FSC CERTIFICATION

FSC certification brought several changes to YFOC. Forestry journals

and local media often reported on the splendid achievement of this small forest owners' cooperative. Yusuhara and YFOC suddenly became well known, which improved the morale of the cooperative's staff and workers and in turn increased the motivation of forest owners. As forestry usually is a low paid, rough and dangerous job, workers tend to lack pride in their occupation. FSC certification seems to be helping to change this situation.

The direct economic benefits became evident only after about three years. At first, the area of certified forest was only 2 250 ha, and the production of FSC-certified timber was very limited. Moreover, there were almost no requests for FSC-labelled logs and sawn timber by the usual buyers. If the lack of economic benefits continued it could have made the costs of assessment and annual audits a problem for a small organization like YFOC. Nevertheless, the cooperative kept expanding its certified forest area, involving more of its forest owners; currently almost all YFOC members are a part of the FSC-certified group (Figure 1). The increase in certified

1
Trends in FSC certification by forest area and number of YFOC members involved



forest area and membership illustrates the gradual understanding of the value of FSC certification among forest owners in Yusuhara. The town government also contributed human resources and budgetary support for the expansion of FSC certified forest.

After this slow but steady expansion, YFOC began to receive direct orders for FSC-certified sawnwood for housing construction from ecologically minded builders in urban areas such as Osaka. Information about YFOC as a supplier of FSC certified sawnwood spread by word of mouth. By 2003, builders had become the major purchasers of the cooperative's products (Figure 2). Before 2003, the YFOC sawmill had shipped its products mainly to wholesalers and auction markets, as was usual in Japan. What is important here is the difference in the average price of sawnwood for the different buyers. In 2005, wholesalers paid an average price of 33 882 yen (US\$280) per cubic metre; auction markets paid 22 811 yen (US\$189), while the price for builders was 85 958 yen (US\$710).

It is difficult to say how much of the higher price that the builders pay is due to certification *per se* and how much to



Builders pay more for certified sawnwood: FSC-labelled sawn timber from the cooperative's sawmill, ready for shipping to a builder

the fact that in addition they require specially treated products. To wholesalers and auction markets, YFOC sells poles and beams without kiln drying, but to builders the cooperative sells specially ordered sawnwood products that are kiln dried and resawn. Therefore, the cost of producing the sawnwood for builders is at least 15 000 yen (US\$124) higher per cubic metre, but the difference in the selling price is enough to make dealing directly with builders profitable for the cooperative.

Based on the future prospects heralded by this new market, YFOC decided to introduce new saw machinery and a kiln facility to help expand production capacity in 2005. It passed FSC reassessment the same year. Certification has surely been a driving force in revitalizing forestry activities in this rural town and in the economic expansion of the small-scale forest owners' cooperative.

CONCLUSIONS

The issue of a price premium for certified timber is controversial. Economic benefits from certification can be sought both with and without it. The case of Yusuhara Forest Owners' Cooperative shows another way of achieving economic gain through certification. Intermediaries do not usually want to buy certified timber at a higher price. In this case ecologically minded builders (or builders with ecologically minded



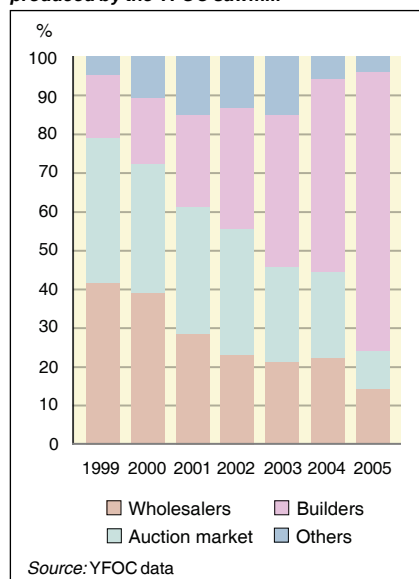
Obtaining certification has improved the pride and morale of the Yusuhara Forest Owners' Cooperative's staff

customers) who demand certified timber will obtain it not from retailers' shelves, but from certified sawmills. Direct dealings between the sawmill and the builders make sense in such a situation, and are satisfactory to both. This is a kind of niche market that is growing with the trend in environmental awareness in Japan today.

Forest certification has brought another advantage for small-scale forest owners: self-confidence. It provides for many of them a motivation to manage their forests well. The forests in Yusuhara have become more beautiful year by year because of increased tending, especially precommercial and commercial thinning operations. Representatives of more than 100 companies, organizations and local governments visit Yusuhara every year to see the FSC-managed forest and the local forest management practices.

FSC forest certification has been a key to success for small-scale forest owners in Japan, and may hold promise for those in many other countries too. ♦

2
Change in destination of sawnwood produced by the YFOC sawmill



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FAO FORESTRY

Workshops on forest law compliance: taking stock and moving forward

For the past few years, FAO and the International Tropical Timber Organization (ITTO) have collaborated productively in the area of forest law compliance. In addition to co-publishing *Best practices for improving law compliance in the forest sector* (FAO Forestry Paper No. 145, 2005), the two partners have organized a series of regional workshops to identify challenges in this area and enhance progress on the ground. The workshops have brought together representatives from concerned government agencies, regional and international organizations, non-governmental organizations (NGOs) and the private sector to discuss and agree on tangible and deliverable actions.

The last of four workshops was held for Southeast Asian countries from 11 to 13 September 2007 in Manila, the Philippines. Organized by FAO and ITTO with the Philippine Department of Environment and Natural Resources, the workshop reiterated the high-level commitment of the Bali Ministerial Declaration in September 2001 to address illegal logging and its associated trade. It took stock of ongoing initiatives carried out by, among others, the East Asia Forest Law Enforcement and Governance (EA-FLEG) process, the Association of Southeast Asian Nations (ASEAN), the Asia Forest Partnership and the European Union (through the Forest Law Enforcement, Governance and Trade Action Plan, EU-FLEGT).

The workshop was structured around the following three key elements of any strategy for improving forest law compliance and governance. The participants highlighted general needs and actions for each, identifying key challenges, concrete recommendations and the roles of different stakeholders in implementing them.

- **Policy and legal framework.** Foremost is the need for commitment by governments to review and amend outdated laws, and then to enforce them equitably. Laws need to be harmonized at the national and subnational levels. Mechanisms for enhancing regional coordination and collaboration need to be enhanced, particularly to address transboundary issues.
- **Institutional capacity.** To strengthen the institutional capacity for better forest law compliance and governance, countries should establish multistakeholder processes to develop mechanisms to ensure transparency, avoid conflicts of interest and monitor performance within the broader context of good governance. Workshop participants urged regional and international organizations such as FAO, ITTO and the Center for International Forestry Research (CIFOR) to support these processes.
- **Knowledge and information.** Ensuring access, transparency, reliability and timeliness of information is a matter of concern, requiring urgent action.

A critical action identified for all stakeholders is to develop

strategic alliances for effective resource mobilization to support the implementation of actions – for example, to promote corporate social responsibility approaches, secure government budget allocations and obtain supplementary donor support for transitional institutional arrangements and capacity building. The participants also recognized the need to engage stakeholders that were not represented at the workshop such as the media, policy analysts and legal experts.

The participants strongly urged governments to make explicit commitments to implement the recommended actions and time-bound next steps at upcoming meetings on forest law enforcement and governance.

Similar workshops have been held in the Amazon subregion, Central America and Central Africa.

Voluntary guidelines for planted forests and forest fire management

Following collaboration with a wide range of partners and stakeholders, FAO has produced and disseminated two sets of voluntary guidelines, on responsible management of planted forests (available online at www.fao.org/docrep/009/j9256e/j9256e00.htm) and on fire management (www.fao.org/docrep/009/j9255e/j9255e00.htm). Elaborated through technical and expert consultations, through discussions at FAO's six Regional Forestry Commission meetings during 2006 and through extensive partner feedback, these guidelines address the social, cultural, environmental and economic dimensions of planted forests and fire management in the wider mosaic of land uses in the landscape. They also encourage stakeholder participation in policy dialogue, strategic planning and actions across sectors.

The guidelines provide a comprehensive review of responsibilities under international commitments for decision-makers in policy, planning and management. They also provide a framework of principles and strategic actions necessary for responsible management of planted forests and fire management at the national, subnational and field levels. The two sets of voluntary guidelines are tools that can contribute to sustainable forest management as well as to achieving broader livelihood and development goals.

The eighteenth session of the FAO Committee on Forestry in March 2007 recommended that FAO work together with member countries and partners to strengthen capacity towards implementation of the guidelines. FAO plans to assist countries in preparing needs analyses to identify critical areas of support for their implementation, including through regional workshops. The guidelines will be useful in structuring, highlighting and promoting necessary investments in sustainable forest management and sustainable livelihoods.

Organizations are encouraged to make use of these management tools, currently available in English, French and



Spanish, and FAO looks forward to collaboration with major stakeholder groups in the their implementation.

Hard copies can be requested by sending an e-mail to: jim.carle@fao.org

Rehabilitation of coastal forests in Aceh, Indonesia

A project to restore vegetation along an Indonesian coastline ravaged by the December 2004 tsunami is ending, but the benefits to local villagers will continue. Across Aceh Province, eight villages have been taking part in FAO's Forestry Programme for Early Rehabilitation in Asian Tsunami-Affected Countries. Villages were selected based on the ecological damage they suffered, the rate of environmental decline and the level of community support.

The US\$1.2 million project, funded by the Government of Finland, was launched in mid-2005 and ends in September 2007. Its objective was to rehabilitate and restore coastal tree and forest resources in tsunami-affected areas through a participatory approach, within the context of integrated coastal area management. Since planting began in September 2006, the project has replanted 247 ha of coastal strip with mangroves, pines and coconut trees. The aim was not only to improve Aceh's environment, but also to help provide sustainable livelihoods for residents of coastal communities and to help the economy and society bounce back.

The Government of Indonesia has estimated that 25 000 ha of mangrove forests and almost 49 000 ha of coastal forest were lost in northern Sumatra in the 2004 tsunami. It is difficult to determine whether the loss of mangrove or coastal forests in Aceh was solely the result of the tsunami, or if coastal land conversion into fish ponds or rice fields shares some of the blame. The coastal mangroves are important to meet a variety of needs: they help arrest soil erosion, provide breeding grounds for fish, block storm surges and provide wood that is converted into charcoal for use as fuel. Crabs and shrimp thrive in mangrove forests, and have been more scarce since the tsunami.

The project sought to raise awareness and understanding about the importance of mangroves and the coastal strip, so the community would have incentive to manage the coastal areas for long-term benefits. Hundreds of thousands of seedlings were provided, and the community was involved directly, not only in planting and in maintaining coastal vegetation but also in business and marketing, for which training was provided. Villagers involved in replanting and maintenance of the crops – among them tsunami survivors who were left poor and vulnerable as a result of the disaster – each receive Rp35 000 (about US\$4) for a day's work. The project has thus helped the poor villagers earn money while regaining their coastal forests.

In return for replanting and maintaining the coastal strip, the groups taking part in the project have been given funding to maintain them until they are strong enough to stand on their own,



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which will take about two years. The areas around the young trees have been fenced off to exclude wild pigs and cattle. The project secured letters from district chiefs and village heads promising the replanted strip would not be disturbed. High waves in May 2007 swept away some of the trees, but the villagers quickly replanted them. Local fisherman know the mangroves are needed to support their livelihoods.

FAO helps Afghanistan restore its forest sector

Through years of war, Afghanistan's forest resources were overexploited to meet the basic livelihood needs of its people. Since 2005, FAO has been helping the country rehabilitate its forest sector.

Afghanistan is a low-forest-cover country; only 2.1 percent of the country remains under forests today. However, forests and trees make significant contributions to local livelihoods. Afghanistan's forests are of three types: mixed pine, cedar and oak in the east; a pistachio belt in the north; and irrigated agroforests and home gardens on lands where water is available. Trees are also being planted around cities and along roadsides.

Uncontrolled natural resource use has resulted in deforestation and forest degradation. The pistachio belt has been dramatically reduced by excessive fuelwood collection, and the remaining cedar forests by overharvesting for illegal export. Many trees planted in home gardens have been abandoned and are now under pressure to meet the increasing wood needs for the country's reconstruction.

A project for institutional and technical support to forest sector rehabilitation under FAO's Technical Cooperation Programme has assisted the Ministry of Agriculture, Irrigation and Livestock in establishing suitable conditions for enhancing investment and development in the forest sector. The FAO assistance has contributed to:

- the formulation of a national forest sector development



policy, its translation into local languages and its promotion at decentralized levels;

- the drafting of a strategic plan setting ten priorities for forest sector development;
- the formulation of a new Forest Law;
- strengthening of core staff capacities in tree planting extension, conflict resolution and developing institutional arrangements for community participation, through training and through study visits to China and India;
- rehabilitation of tree nurseries in Kabul and in the provinces through technical support and some provision of equipment, mainly for training purposes;
- improved partnership of the Forestry Directorate with local non-governmental organizations and communities dealing with forest management, through jointly organized activities such as training courses, surveys and workshops.

Towards a new FAO strategy for forestry

FAO has embarked on the development of a new strategy for its work in forestry, to better align the Organization's work with the rapid pace of change in the forest sector and beyond. The influence of changes such as economic globalization, acceleration of climate change and transformation of global communications is increasingly felt in the forest sector. At its eighteenth session in March 2007, the Committee on Forestry (COFO) welcomed FAO to revise its current Strategic Plan for Forestry, approved in 1999, by the time of the next COFO session, March 2009. The new strategy will be developed in the context of ongoing UN and FAO reforms; an Independent External Evaluation of FAO currently under way will also help shape its outcome.

FAO will seek broad participation in the process. The FAO Regional Forestry Commissions will provide an important channel for inviting the views of member countries. FAO will also provide opportunities for partner organizations to contribute, including the members of the Collaborative Partnership on Forests (CPF), the private sector and civil society.

FAO helps propel new Global Environment Facility strategic programme on sustainable forest management

The Global Environment Facility (GEF) has launched a new strategic programme on sustainable forest management as one of several programmes to help countries implement global environmental conventions. The new programme was launched in June 2007 during the thirty-first session of the GEF Council, held in Washington, DC, United States. Although GEF has for many years supported forestry projects that produce global environmental benefits, this new strategy represents a coordinated approach to GEF activities in forestry that will support GEF's

global objectives regarding biodiversity, climate change and land degradation.

As a follow-up to this decision, FAO and the United Nations Environment Programme (UNEP) prepared a strategic programme framework for GEF that identifies priorities for support in the forest sector. It describes the main areas of forest management that GEF will support, the types of support that will be given (e.g. investment, technical advice, capacity building) and the locations (countries, regions, forest types) where support is most needed. The strategy covers the following areas of forest management:

- activities to strengthen the funding of biodiversity conservation in forests and forest protected areas;
- expansion of forest protected areas;
- control of invasive alien species;
- measures to mainstream biodiversity conservation in forests outside protected areas;
- investments in sustainable bioenergy production;
- activities to support the management of land use, land use change and forestry (LULUCF);
- projects to reduce land degradation in forest fragments and forest margins.

Another innovation agreed at the GEF Council was the removal of the distinction between implementing and executing agencies. Previously, the World Bank, UNEP and the United Nations Development Programme (UNDP) were the only implementing agencies for GEF projects, while FAO, the International Fund for Agricultural Development (IFAD), the United Nations Industrial Organization (UNIDO) and the regional development banks acted as executing agencies. Projects formerly had to be submitted through the implementing agencies. As a result of the new decision, each GEF agency can develop projects in the areas where it has comparative advantage and submit them directly to GEF.

FAO has been identified as a GEF agency with comparative advantage in forestry and has already taken advantage of this new opportunity by preparing forestry projects in Côte d'Ivoire, Ecuador, Ghana, the Islamic Republic of Iran, the Lao People's Democratic Republic, Mozambique and Peru. These projects have been submitted to GEF and a number of other forestry projects are being developed for submission next year. Commenting on these developments, Wulf Killmann, the FAO Forestry Department's contact point with GEF, said: "The FAO Forestry Department is now open for business in the development of GEF forestry projects and we are looking forward to working with countries that are interested in obtaining GEF support for implementation of their forestry policies and programmes".

Countries interested in working with FAO on the development of GEF forestry projects can write to: wulf.killmann@fao.org

Large-scale gathering of small-scale entrepreneurs

Indigenous and other forest-dwelling communities have long managed and protected forests and owned and operated small-scale forest enterprises. Until recently, however, these enterprises operated largely in the shadows of formal forest industry and their contributions to forest conservation, employment and local development were largely underappreciated. Despite having an important impact on the conservation of natural resources, they face an array of challenges including insecure land tenure, lack of financial support, excessive red tape, high taxes and inaccessible markets.

In Rio Branco, Brazil from 16 to 20 July 2007, the largest-ever international gathering of community forestry entrepreneurs and policy-makers from Africa, Asia and Central and South America was held to debate the best ways of assisting the sustainable development of community-based operations.

The international conference “Community Forest Management and Enterprises: Global Issues and Opportunities” brought together more than 250 leaders of forest communities, public forest agencies, forest industry and conservation groups from more than 40 countries. The conference was organized by the International Tropical Timber Organization (ITTO), the Rights and Resources Initiative, the Global Alliance of Community Forestry and the World Conservation Union (IUCN). It was hosted by the Government of the State of Acre and the Government of Brazil through the newly created Brazilian Forest Agency.

The programme was framed around the case studies and findings of *Community-based forest enterprises in tropical forest countries: status and potential*, a report commissioned by ITTO and produced by Forest Trends and the Rights and Resources Initiative, which was released at the conference. The report surveyed community enterprise leaders, other forest communities, community federation leaders, forestry professionals and policy-makers, donors and outreach organizations. It indicated that community forestry enterprises employ more than 110 million people and that forest communities are responsible for the management of around 370 million hectares of natural forest worldwide. Despite their scant financial, technical and technological resources, community forest enterprises worldwide invest US\$2.5 billion in forests annually.

Case studies presented at the conference included community forest management for timber and sawnwood production in Mexico; butterfly farming in the United Republic of Tanzania; and extraction of seed-oil from *Pongamia* trees for conversion to biodiesel in India.

Participants’ recommendations included a commitment to:

- work together to ensure that legal access to land and natural resources be included in national laws;
- lobby governments to provide lines of credit dedicated exclusively to community enterprises;
- adopt measures to combat poverty and encourage social justice and policies of inclusion within communities;



- call for the immediate suspension of high taxes imposed by governments on forest community enterprises;
- seek economic and administrative help to reach consumer markets for sustainable products;
- create, through ITTO, a special fund for financing community organizations.

In addition, the entire contingent from Africa (26 officials and community leaders from 12 countries) issued a statement calling for substantial support for the continent in realizing the potential of community forest enterprises. They urged further discussion of a “time-bound plan for systematically expanding community forest tenure, management and enterprise in African countries to agreed achievable targets by 2015”.

First high-level seminar on biofuels in Africa

As in the rest of the world, the biofuel sector is one of the most dynamic and rapidly changing sectors in Africa. The continent has enormous energy needs which are largely unmet. With rising and volatile oil prices, interest in biofuels has surged over the past five years. Several African countries, mainly net oil importers, have taken steps to develop biofuels, particularly liquid biofuels, to ensure stable, secure and environmentally friendly energy supplies. In other regions of the developing world, other biofuel technologies such as gasification and biogas are beginning to demonstrate market potential.

In line with its overall strategy to elaborate policies and strategies for the development of clean, new and renewable energies, particularly biofuels, the Commission of the African Union (AU), together with the Government of Brazil and the United Nations Industrial Development Organization (UNIDO), organized the first-ever high-level seminar on biofuels in Africa. Held at AU



headquarters in Addis Ababa, Ethiopia from 30 July to 1 August 2007, the seminar brought together some 250 participants representing AU member States, African regional economic communities, UN agencies, the scientific community, the private sector and non-governmental organizations. The theme was "Sustainable Biofuels Development in Africa: Opportunities and Challenges". The seminar was held to help policy-makers, the private sector, regional institutions and other key stakeholders in the biofuel industry make informed decisions in developing biofuel policies, strategies, programmes and projects in Africa.

The seminar noted that given Africa's climate, vast land resources and availability of labour, biofuels would have the potential to provide the necessary energy for industrialization and poverty reduction. Biofuels can reduce dependence on imported fossil fuels and increase energy security. They can also help reduce the rate of global climate change, which in turn will increase Africa's access to climate-related finance. Energy crops for biofuel production can be an important source of job opportunities for rural communities in Africa. However, there are risks, including expansion of agricultural frontiers, deforestation, environmental problems associated with monocultures and food security problems. Therefore, there is a critical need to maximize the benefits and simultaneously minimize potential risks and trade-offs in developing biofuels in Africa.

The Brazilian biofuel experience was presented as a possible model for application in Africa. The seminar also examined biofuel conversion technologies for ethanol, biodiesel, biogas and biomass gasification. Issues related to policy and regulatory frameworks, financing and environmental sustainability were also discussed.

A Ministerial Roundtable met on the last day of the meeting and adopted the Addis Ababa Declaration on Sustainable Biofuels Development in Africa. The declaration calls for the development of enabling policy and regulatory frameworks; Africa's participation in global sustainability discussions; the formulation of guiding principles on biofuels to enhance Africa's competitiveness; and minimizing the risks of biofuel development for small-scale producers. It invites development partners to enable North-South and South-South cooperation, and public financing institutions to support biofuel projects. It also proposes the establishment of a forum to promote access to information and knowledge on biofuels.

Recommendations from the plenary sessions were consolidated into an Action Plan for Biofuels Development in Africa, which was annexed to the Addis Ababa Declaration. It notes that existing policies, strategies and laws governing energy development cut across sectoral boundaries, involving institutions dealing with forestry, agriculture, environment, water, industry, electricity and petroleum; coordinating the roles of these institutions in biofuel development is a complex challenge. It also notes the challenge of ensuring that biomass energy plantations provide a sustainable

supply to meet growing energy demand, without taking up land needed for food crop production; competition can be avoided by increasing food production on current agricultural lands, establishing large tree plantations and using modern forestry practices.

Helping forestry help the poor

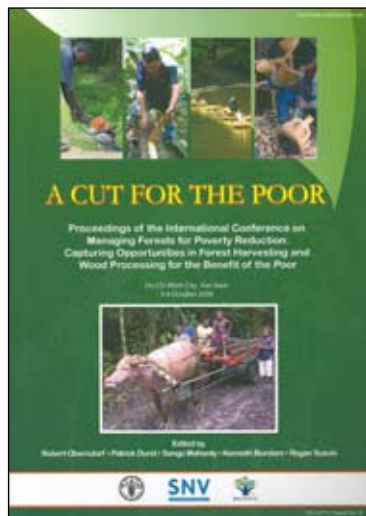
Crippling poverty, violent conflict, insecure ownership and restricted access to basic resources are everyday challenges confronting 300 million rural villagers who live in and around the often dwindling forests of Asia and the Pacific.

To highlight successes and problems encountered in efforts to make forestry assist the poor more effectively, the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC) and the Rights and Resources Initiative (a coalition of community forestry organizations) convened the International Conference on Poverty Reduction and Forests: Forest Tenure, Markets and Policy Reforms. Held in Bangkok from 4 to 7 September 2007, the conference was attended by about 300 people.

In the opening session, a panel of experts from five Asian countries shared their first-hand experience of rural life and their views on answers to issues such as persistent poverty, armed social conflict, the need for legal reform, obstacles to community use and control of forests and insecure property rights. Discussions revolved around concepts, issues and lessons learned from forestry reforms intended to assist the poor; opportunities and threats; and capacity building. Participants examined the role of communities, forest tenure, markets and enterprises, and policy and governance.

The report *Land, forest and people: facing the challenges in South-East Asia*, compiled by the World Agroforestry Centre (ICRAF), RECOFTC, the Rights and Resources Initiative and the Forest Peoples Programme, was launched at the conference. The outcome of detailed national reviews and regional workshops, it reveals the precarious situation of millions of people whose lives depend on the fast-depleting forests of Southeast Asia, showing that a huge gap remains between legal options and realities on the ground. The report notes that many who depend on the forests do so insecurely and even illegally; the result is poverty, marginalization and sometimes violence. Important progress is being made, however, in policy reforms; across the region, communities are increasingly being given legal rights to forests.

The report can be downloaded from: www.recoftc.org



Reducing poverty through forestry production on a small-scale

A Cut for the Poor. 2007. R. Oberndorf, P. Durst, S. Mahanty, K. Burslem & R. Suzuki, eds. Proceedings of the International Conference on Managing Forests for Poverty Reduction: Capturing Opportunities in Forest Harvesting and Wood Processing for the Benefit of the Poor. Ho Chi Minh City, Viet Nam, 3–6 October 2006. Bangkok, Thailand, FAO, Netherlands Development Organization (SNV) & Regional Community Forestry Training Center (RECOFTC).

Approximately one-third of the world's forests are managed primarily for the production of wood and other forest products. Much of this production is carried out by commercial companies on a large scale. However, forestry production on a smaller scale (as this issue of *Unasylva* demonstrates) offers many opportunities for improving the livelihoods of the poor. Harvesting, transport, processing and marketing of forest products all offer opportunities for generating income in rural areas which can be enhanced through both institutional and technological means.

A cut for the poor is the proceedings of the International Conference on Managing Forests for Poverty Reduction: Capturing Opportunities in Forest Harvesting and Wood Processing for the Benefit of the Poor, held in Ho Chi Minh City, Viet Nam in October 2006. It reviews the potential of small-scale and labour-intensive forest management practices and wood processing to reduce poverty, identifying constraints, opportunities and ways forward.

The publication presents 19 papers grouped under the following themes: policies and legislation; economic issues; forest management modalities and institutional issues; technical aspects; and accessing markets. Individual papers address fundamental issues such as decentralization; simplifying requirements for community-based forest management; benefit sharing; increasing the value of forest products; managing risks; small-scale and community-based timber harvesting; and small-scale enterprise. Many focus on specific case studies, mostly from Asian countries (Bhutan, China, Lao People's Democratic Republic, Nepal, Papua

New Guinea, the Philippines, Viet Nam) but also from Cameroon and Ghana.

Also included are the conference declaration, opening statements and a summary of the conference.

This book will be of interest to anyone who wants to know more after having read the articles in this issue of *Unasylva*. To obtain a copy, contact: Patrick.Durst@fao.org

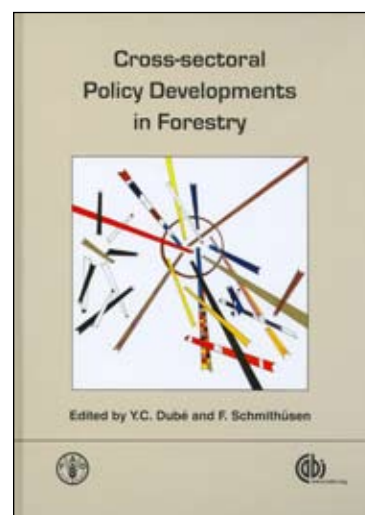
Coordinating policy between forestry and other sectors

Cross-sectoral policy developments in forestry. Y.C. Dubé & F. Schmithüsen, eds. 2007. Wallingford, UK, FAO & CABI. ISBN 978-92-5-105641-7.

As an essential resource for economic and social development, forests merit consideration in several policy domains. Forest protection and forestry practices are closely linked, for example, to public policies that address climate change, biodiversity, water management and agriculture. Public policy linkages across sectors are therefore essential not only for advancement of sustainable forest management, but for sustainable development in general.

Cross-sectoral policy developments in forestry has been prepared to improve awareness and understanding of potential positive and negative impacts of policies outside the forest sector on sustainable forest management, and to lead to more harmonized policies among forestry administrations and other sectoral agencies and stakeholders.

The publication compiles more than 20 papers presented at a technical session on cross-sectoral linkages in forestry, organized by FAO and the Swiss Federal Institute of Technology (ETH) at the twenty-second World Congress of the International Union of Forest Research Organizations (IUFRO) in Brisbane, Australia in 2005. These papers are rounded out by the addition of invited papers from a range of contributors. Together, the contributions provide a multifaceted documentation of current progress being





made in creating the political, economic and social conditions indispensable for sustainable management and use of forest resources, and note the obstacles that need to be removed in order to reach this goal.

The first part of the book introduces general and global aspects that have to be considered in the context of cross-sectoral policy coordination – for example, the impact of external shocks such as a sudden oil price increase on forest management, the impact of energy or trade policies on global wood markets, and the influence of decentralization in integrating multiple demands on forests. It considers policy changes brought about through international agreements such as the Kyoto Protocol and the Convention to Combat Desertification; the common and divergent interests of agriculture and forestry in sustainable rural development; and the introduction of more comprehensive national accounting systems to link forest-sector decision-making and national development planning more effectively.

The second part deals with cross-sectoral policy linkages at the regional, national and local levels. The chapters on Africa focus largely on agroforestry, land tenure and gender issues, more integrated policies to promote reforestation and afforestation, and multiple-stakeholder planning processes. Highlighted with regard to Asia are environmental and economic accounts for forestry, non-wood forest product (NWFP) linkages, road construction and population effects on forest conversion, and contributions of community forest management to the local and national economy.

The chapters on Europe and the Americas emphasize patterns of competing policy demands between resource use, industrial expansion and strong environmental demands. Challenges noted in South America include environmental policy demands on forest management practices and transboundary watershed management systems.

Emerging from the overall picture is a need for improved policy planning and coordination across several political levels and economic sectors, as well as a call for regional and country networks with a view to creating and sharing information and knowledge on best practices.

This publication is an invaluable resource for policy-makers, landowners and representatives of non-governmental organizations. It will also aid students and researchers in forestry and the environment. It is hoped that the book will contribute to more integrated and effective development approaches at the country and local levels.

Genetic manipulation in forestry

Genetically modified forests: from Stone Age to modern biotechnology. R.D. Burdon & W.J. Libby. 2006. Durham, North Carolina, USA, Forest History Society.

The term “biotechnology” came into common usage in the 1980s. While it is mainly used to refer specifically to genetic manipulation of plants and animals, in a broad sense – according to the authors



of this short book – the concept covers anything that combines biology and technology.

Written by two authoritative forest scientists, *Genetically modified forests* is targeted at students, policy-makers, forest managers, forest landowners and environment advocates. The publication is easy to read and uses commonly understood terminology. Boxes and sidebars help clarify the text through examples and specific case studies. More specialized terms are bolded in the text when first used and explained simply in a brief glossary. The scientifically sound, clear and neutral treatment of complex and often controversial issues, lightened with splashes of humour, makes this book very enjoyable also for specialists and those with a scientific background.

As noted in the Foreword, “the story ranges from the time when humans were dependent upon hunting and gathering from the wilds to the sterile laboratory where particular genes are excised from one tree and surgically implanted into another”. The history of genetics and tree improvement is described in a series of brief, well-illustrated chapters on: historical efforts to improve trees; the science of tree breeding; conventional tree improvement; clonal forestry; the science of genetic engineering; and tree improvement at the start of the twenty-first century. While providing an excellent review of recent high-technology developments, the publication gives the reader an appreciation that there has been, and continues to be, more to forest genetics than just working on the molecular level.

During the past century, the use of conventional breeding techniques has allowed humans to improve the growth of forest trees on some lands to meet increasing human and environmental needs for wood and non-wood products while conserving forests on other lands managed for strict protection. Economic analyses have indicated that tree improvement offers greater return on investment than any other forest input. As pointed out by the authors, conservation of forest genetic resources must be

considered an integral part of tree improvement programmes, ensuring their sustainability.

However, the domestication of forest trees has often met with public suspicion or professional scepticism, perhaps because many people perceive the aesthetic, recreational and spiritual values of the forest as incompatible with their value as a source of wood and non-wood products. More recently, real and imagined concerns of risks of genetic engineering have further inflamed the debate.

Thus some formidable challenges have arisen – not only technical (e.g. how to apply new advances in techniques of genetics, biochemistry, molecular biology and computer sciences to forestry) but also environmental, ethical and religious. As the authors note, social acceptance, both by the public and in a political context, is necessary if the potential benefits of biotechnology in forestry are to be realized. They stress that risk management to address concerns about genetic engineering and a trusted system of oversight and control will be essential to gain such acceptance.

The book closes by examining the question: Why should – or should not – biotechnology be applied to forests in the future? Whatever the controversies over the technology used, the authors note that two great, intertwined issues need to be solved:

- How can the demands of an expanding and more prosperous world population be met without resorting to less environmentally benign materials than wood?
- How can native forests and all their associated values be conserved in the wake of growing human and animal populations and aspirations for higher quality of life?

The book concludes that biotechnologies (including genetic engineering), like any new technology, have their inherent risks and concerns. To the extent that the risks can be minimized, biotechnologies that can enhance the role of forest plantations and directly or indirectly help conserve natural environments are viable tools to address human needs.

To purchase, see: www.foresthistory.org

Insect pests of tropical forests

Tropical forest insect pests – ecology, impact, and management. K.S.S. Nair. 2007. Cambridge, UK, Cambridge University Press. ISBN 978-0-521-87332-1.

Much of the literature on forest entomology relates to insects of temperate forests. *Tropical forest insect pests* thus fills an important gap. It promotes a better theoretical understanding of pest population dynamics and causes of forest insect outbreaks in the tropics. It covers pests of both natural forests and plantations as well as stored timber, with recommendations for their control and management.

The book is organized in ten chapters. An overview of the features of tropical forests and their management is followed by an introduction to tropical forest insects, discussing their



structural and functional diversity and the concept of pests.

The third chapter discusses the ecological functions of insects in the forest ecosystem. The next three chapters describe pest incidence in natural forests, plantations and stored timber, respectively. Chapter 7 examines the circumstances under which insect populations increase and how they are regulated in nature. The following chapter addresses some general issues in forest entomology, such as pest incidence in plantations versus natural forests, in plantations of exotic versus indigenous species, and in monocultures versus mixed plantations. The ninth chapter examines pest management options.

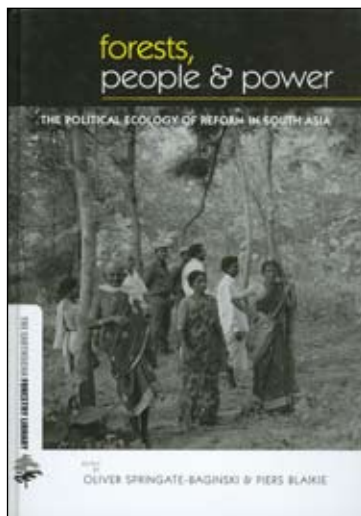
The final chapter, which takes up almost half the book, comprises detailed pest profiles of the major tropical forest insect pests, including control options. This chapter provides a convenient and richly informative reference for practising foresters, planters and researchers who may seek information on particular tree or pest species. It would have been even more helpful, however, if the photos had been printed in colour. Although this would no doubt have raised the cost of the book, it would have enhanced its usefulness for diagnostic purposes.

This is a comprehensive resource suitable for advanced students and researchers in forestry and tropical forest entomology, and for forest plantation managers in the tropics. Its extensive reference list will enhance its usefulness in research. To stimulate further research, the author has included comments on knowledge gaps with each pest profile.

Policy reform and participatory forest management in South Asia

Forests, people and power: the political ecology of reform in South Asia. O. Springate-Baginski & P. Blaikie, eds. 2007. London, UK, Earthscan. ISBN 978-1-84407-347-4.

In recent decades, participatory approaches to forest governance and management have been introduced around the world. This



book assesses their implementation in the highly politicized environments of India and Nepal. The authors critically examine the policy, implementation processes and causal factors that have impacts on livelihoods, demonstrating why policy reform often proves so difficult.

Specifically, *Forests, people and power* examines aspects of reform in forest management policy in three Indian states (West Bengal, Orissa and Andhra Pradesh) and two regions of Nepal (the mid-hills and the plains). Based on research and field practice spanning all levels, from households to key policy-makers, the book examines:

- the livelihood impacts of the different strategies for implementing participatory forest management in the two countries;
- how different policy, legal and administrative frameworks of forest management affect livelihoods, especially those of the poor;
- the extent to which various claims and aspirations for participatory forest management have been fulfilled, and the main opportunities and constraints;
- the main factors facilitating or inhibiting the sort of participatory forest management that enhances livelihoods;
- the ecological impacts of participatory forest management.

Data were collected from over 60 study villages and over 1 000 household interviews,

With tens of millions of hectares and hundreds of millions of lives in the balance, the debate over who should control South Asia's forests is of great political significance. Delving into issues of power and politics in forestry, this book provides an insightful and thorough assessment of important forest management transitions currently under way. It explores the difficulties of transforming age-old structures that circumscribe the access of the poor to forests and their resources, and challenges assumptions of the benefits of participatory forest management and the role of forestry in poverty reduction.

These thoroughly researched, provocative studies will be of interest not only to those interested in community forestry in South Asia, but to others concerned with resource governance anywhere. It should be of interest to policy-makers and to all those who have been involved with the struggle of transforming forestry over the decades.

A contribution to the *Prosopis* debate

Is Prosopis a curse or a blessing? – An ecological-economic analysis of an invasive alien tree species in Sudan. J. Laxén. 2007. Tropical Forestry Reports No. 32.

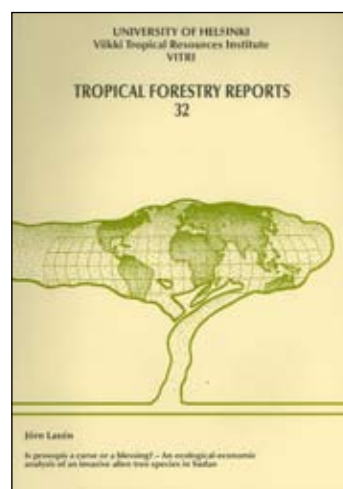
Helsinki, Finland, Viikki Tropical Resources Institute, University of Helsinki.

The intentional or unintentional introduction of *Prosopis* species that has occurred in many tropical and subtropical countries over a number of decades is a subject of controversy. While these introductions have frequently provided both environmental and economic benefits, in many situations *Prosopis* species have spread aggressively, to detrimental effect.

This publication, originally prepared as an academic dissertation, contributes new research to the international debate about the pros and cons of introduced *Prosopis* species. Focusing on the Sudan, the author investigated whether perceptions of net harmful impacts were true or false.

In the 1960s, foresters in the Sudan began to introduce the locally adapted *Prosopis* species as a shelterbelt tree in many densely populated rural areas. One of the aims was to ensure sufficiency of fuelwood and other wood products. In the following decades, *Prosopis* spp. were found to perform well in arid and semi-arid conditions; by the early 2000s they had been widely promoted and introduced in the country.

In the 1990s, however, problems became apparent because of the tendency of the popular *Prosopis juliflora* to invade farmlands and pastures, especially in and around irrigated agricultural lands, and it was labeled an alien invasive species. In 1995, a presidential decree for its eradication was issued. Much debate





has ensued among foresters, researchers, land managers and politicians about the appropriateness of this policy.

The research described here measured the impacts of *Prosopis juliflora* on household livelihoods and income and its environmental, social and economic costs and benefits under different site conditions.

The main finding is that in many situations and for many parts of the population (mainly poor landless people), the social and economic benefits obtained from *Prosopis* spp. do or could exceed the costs involved in its control. However, the author points that most households do not fully realize the value of the *Prosopis* products from their land; for example, many buy fuelwood, charcoal and poles rather than producing, using or selling such products from *Prosopis* spp. on their land.

In other conditions, however, for example where *Prosopis* spp. grew in an agricultural scheme on clay soil, these plants were

found to have more detrimental impacts on the costs of agricultural operations; in that case, their eradication from the scheme was initiated on the basis of the data collected for the study.

Concerning the environmental aspects, the author studied the losses (e.g. sealing of irrigation canals) and the gains (e.g. sand dune fixation, protection of arable lands and of infrastructures against sand encroachment). Biodiversity losses also have to be taken into account, and were perhaps less well addressed in this study.

This type of research, using site-specific, scientifically verifiable, realistically monetized values and taking into account local conditions (including soils), could be useful to evaluate the viability of *Prosopis* spp. in other situations in other countries. The author points out that such valuation approaches would need to be practically applicable – easy, fast and affordable for authorities and managers.