ISSN 1022–5439

ITTO Tropical Forest UPDATE

Volume 18 Number 4

A newsletter from the International Tropical Timber Organization to promote the conservation and sustainable development of tropical forests

Sustainable forest industries

A litany of sins has been laid at the doorstep of the tropical forest industry, too often deservedly so. From illegal logging to contributing to civil wars, from human rights violations to corrupting governments, it is easy to find reports casting significant blame for these and a myriad of other ills on the forest industry. However, like most generalizations, this one is at best only partly true. For every predatory company operating in the tropical forest sector, there are others trying to operate legally and sustainably, providing jobs and often many other social services like schools and medical services that governments are unwilling or unable to.

Since extractive utilization of their forests will continue to be an essential component of economic development for most tropical countries, such companies and enterprises are a key to making a successful transition to sustainability in tropical forests. As pointed out by Laurance in this issue, companies that operate sustainably and responsibly will gain a competitive niche in increasingly discerning markets. They should be recognized for their achievements, just as those who operate unsustainably have been rightly vilified.

ITTO

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The *Tropical Forest Update* is published quarterly in English, French and Spanish by the International Tropical Timber Organization. Content does not necessarily reflect the views or policies of ITTO. Articles may be reprinted without charge provided the *TFU* and author are credited. The editor should be sent a copy of the publication.

Printed using vegetable-based inks on stock that comprises 80% recycled fibre from postconsumer waste and 20% totally chlorine-free pulp, sourced from sustainable forests.

The *TFU* is distributed **free of charge** to over 15 000 individuals and organizations in more than 160 countries. To receive it, send your full address to the editor. Please notify us if you change address. The *TFU* is also available on-line at www.itto.int.

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Cover image Log landing in Brazil. *Photo: J. Carvalho*

... Editorial continued

The current global economic downturn is likely to have a severe effect on the tropical forest sector, particularly on companies implementing costly sustainable forest management plans, sustainable wood procurement schemes, etc. Financial flows and investment opportunities for tropical forests are already low, and are likely to get lower with the financial crisis (p.16). This gloomy environment makes a healthy and sustainable forest industry even more essential for many tropical countries.

However, financial flows from timber products (still the most important source of revenue from tropical forests for most countries) are plummeting, with sharp falls forecast in 2009 due to a vicious circle of declining prices and demand (p. 22). Traditional markets are shrinking; EU imports of tropical timber dropped by about 20% in 2008. China, still the biggest importer of tropical timber, maintained fairly robust imports in 2008 but demand is slowing in 2009 as markets for its wooden furniture and other finished products produced from imported tropical and other timber dry up. Tropical forest industries are likely to be hit hard by the economic downturn, with many jobs in the formal forest sector likely to disappear with closing mills. Côte d'Ivoire is a chilling example: thirty timber processing units closed and 7000 of 15 000 direct forest sector jobs were lost in the year ended this March. Forest sector exports are projected to decrease by more than 50% in 2009, a drop of over 100 billion CFA francs (over $200 million). The impact of these kinds of declines are particularly brutal in tropical countries, where alternative employment options are often limited and where governments often lack the means to implement effective stimulus packages.

Tropical countries nonetheless need to take steps to support sustainable forest industries in these troubled times, including through measures like tax relief on equipment purchases, reduction of export taxes, reductions in log prices/royalties, forest restoration/rehabilitation programs or subsidies, etc. Some countries have already announced stimulus packages including some of these measures. But almost all tropical countries need to do more to develop domestic strategies to promote a strong and sustainable forest industry.

Regardless of economic conditions, ITTO will continue to promote a vigorous global trade in sustainably produced tropical timber, working with a range of enlightened partners from all spectrums, including NGOs, local communities and, of course, representatives of responsible forest industries serious about working towards sustainability. ITTO's new Action Plan calls for work to identify and develop guidelines on voluntary codes of conduct for forest industry enterprises and to test, adapt and consider the adoption, at an appropriate level, of such codes. Codes of conduct governing some components of the tropical forestry sector already exist so ITTO will collaborate closely with their proponents in undertaking this initiative.

A $10 million thematic program on industry development and efficiency will, when fully funded, provide another mechanism for ITTO to assist the forest sector in tropical countries to progress towards sustainability. The objectives of the program are to (i) increase the production, further processing and trade of tropical timber and other forest products and services from sustainably managed and legally harvested forests; and (ii) improve efficiency in the processing and utilization of tropical timber and timber products and non-timber forest products (NTFPs), the latter of which are increasingly important for many tropical countries (p.3). This program will particularly focus on small and medium forest enterprises (SMFEs) which often lack financial, human and technical capacity to apply modern technology and management methods. Activities will include support for industrial planning; investment promotion; business development and risk management; improved concession management; development of efficient harvesting and processing technologies; utilization of wood residues and wood wastes; development of sustainable wood-based bioenergy production; organization of commercial supply chains/producer networks and strengthening of relevant stakeholder associations; and improvement of managerial and technical skills in SMFEs through capacity-building, institutional strengthening, training and networking.

Sustainable forest industries need to be viewed as part of the solution to tackling problems like forest degradation, deforestation and poverty in tropical countries. ITTO's policy work and programs, implemented in cooperation with industry and other stakeholders, will help to make this happen.

Steve Johnson, Ramon Carrillo and Tetra Yanuariadi
Co-editors

Quantifying NTFPs

An ITTO-sponsored project helps address the lack of information on non-timber forest products in Central Africa

By Cléto Ndikumagenge[1] and Precillia Tata Ngome

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Bagged: Rattan baskets are an important source of income for these women *Photo: IUCN*

Central Africa contains the world's second-largest expanse of tropical forest; it is home to the most diverse fauna and flora of Africa, including more than 400 mammal species, 1000 birds and probably more than 10 000 plants, of which about 3000 are endemic (Bikié *et al.* 2000; Congo Basin Forest Partnership 2005; Mallaise 1997).

In Central Africa, as in many other parts of the world, little information is available on the socio-economic importance of non-timber forest products (NTFPs) and the ecological impacts of their exploitation. Timber certainly makes an important contribution to gross domestic product—9% in Cameroon, 1% in Congo, 4.7% in Gabon and 10% in Central African Republic (Makon *et al.* 2005)—but the undoubtedly significant role of NTFPs is mostly uncounted in national statistics.

More than half the population in Central Africa takes part in the harvest of NTFPS for food, medicines and the generation of income

Despite this paucity of information, however, there is no doubt that NTFPs play an important role in local economies in the region. More than half the population in Central Africa, for example, takes part in the harvest of NTFPs for food, medicines and the generation of income (Ndoye *et al.* 1997; Ngwasiri *et al.* 2002).

To help address the shortcoming in information on NTFPs, the International Union for the Conservation of Nature (IUCN), with funding from ITTO and the Common Fund for Commodities, carried out a sub-regional study[1] in Cameroon, Congo, Gabon and Central African Republic on the sustainable management of NTFPs. The study comprised: 1) a literature review of NTFP production and marketing channels; 2) the identification, by geographic zone, of the various types of NTFPs; 3) field research in the main NTFP production areas at the national and transboundary levels; 4) field research on the marketing of NTFPs in both rural and urban areas; 5) a study of the optimal marketing channels for NTFPs; 6) development of local and national strategic action plans for the harvesting and marketing of NTFPs; and 7) recommendations at the sub-regional level.

Diverse but similar legislative frameworks

The legal and regulatory frameworks governing the use of floral and faunal products in the sub-region are different in design and enforcement but similar in the issues with which they grapple. Reforms have been under way in many forest domains and governments have also committed themselves to further reform at the sub-regional and international levels.

Socio-economic importance of NTFPs

The study identified the main actors involved in the promotion of NTFPs in Central Africa and their respective motivations, and developed a classification of NTFPs according to their uses and market values. The main actors are:

- *village communities*, who gather, harvest, hunt and sell NTFPs;
- *urban communities*, who are buyers and consumers of the products. Within these are agents or traders who bring the NTFPs to market;
- *institutions*: these might be public (ministries, research centers, etc) or private (logging companies, agricultural companies, horticultural companies, and NTFP-processing companies, including restaurants); and
- in some countries, such as Cameroon, municipal councils and local elected officials.

[1] *Project code : CFC/ITTO/68 FT PPD 19/01 Rev. 1 (I)*

Principal motivations of actors

The predominant motivation of actors in NTFP harvesting is the quest for income generation. Some NTFPs are used directly to shore up local food security, while others—such as rattans, the leaves of raffia palms, which are used for roof building in the Central African Republic, and tree bark for medicinal uses—are processed to give them added value in the marketplace. Activities to add value to NTFPs are increasing to meet growing needs for housing, health-care and financial resources among local and surrounding populations and to generate income and employment.

Classification of NTFPs according to use

Although highly diverse, NTFPs can be classified according to use. There are two broad groupings: NTFPs of animal origin (game and other faunal products), and those of plant origin. Within each of these two broad groupings, product types can be categorized according to their presence in the market and their final use (Table 1). Most commonly, NTFPs are used for food, medicines, magical therapies and craftwork.

NTFPs as medicines

Traditional phytotherapy uses many NTFPs of both animal and plant origin. They can be either fresh or dried: the difference in choice depends on the parts used and the ability to conserve them. Many different parts of the plant can be used, including the leaves, flowers, buds, roots, bark, sap, gums and resins, shoots, fruits and nuts. Similarly, animal parts that are used for medicines include hair, bone, teeth, horn, droppings, claws, gastric and some other internal organs (especially viscera).

Many of the pharmaceuticals are prepared using processes such as softening, maceration, grinding, pulping and carbonization, in some cases mixed with 'vehicle' products such as water, milk, alcohol, lime juice, wine, palm oil, kernel oil or karite (shea) butter. NTFP medicines might be used externally (as a balm, cataplasm, liniment plaster, soap, lotion, etc), internally (as a tablet, electuary, potion or syrup), or in various other forms (eg medicinal cigarettes, eye lotions and suppositories).

Market value of NTFPs in Central Africa

NTFPs can be grouped according to their market value and use:

NTFPs for marketing and with high added value: eg gum arabic, *Rauvolfia vomitora* (used as a purgative, among other things), *Xylopia aethiopica* (used as a spice and in traditional medicine), honey, bee polish, *Piper guineense* (used as a spice);

NTFPs for day-to-day consumption: the leaves of *Gnetum buchholzianum*, caterpillars, mushrooms, *Maranthaceae* spp. leaves, palm oil, bush meat;

NTFPs used for local craftsmanship: eg rattans (canes) such as those derived from *Laccosperma secundiflorum* and *Eremospatha macrocarpa)*

NTFPs for medicinal uses; and

NTFPs with protective virtues.

Constraints and opportunities of managing the various categories

Constraints to and opportunities for the management of NTFP differ both by product (some products are easier to manage than others) and by stakeholder—such as public authority, village community, and vendor (Table 2).

Challenges ahead for NTFPs

Although they have been used for hundreds or thousands of years, many NTFPs are coming under increasing harvesting pressure. For each of the four countries, the problems facing NTFPs, their users and managers are described below.

Central African Republic

A lack of a coherent policy: NTFPs are insufficiently integrated in sectoral development policy

Poor legislation on NTFPs

Inadequate knowledge of NTFPs and their potential utilization

Lack of data on NTFPs destined for export

Except for a few products, exploitation is done on an individual basis

Poorly adapted methods of exploitation have negative impacts on the environment

Many kinds

Table 1. Categories of NTFPs

Plant products		Animal products	
Category	**Description**	**Category**	**Description**
Food	Plant food and drinks derived from fruit, nuts, grains, roots, mushrooms, etc	Live animals	Mainly vertebrates, such as mammals, birds, reptiles, raised/bought as domestic animals
Fodder	Food for animals or bees, from leaves, fruits, etc	Honey and polish	Products from bees
Medicine	Medicinal plants (leaves, barks, roots) used in traditional medicines and/or by pharmaceutical companies	Meat and game	Meat of vertebrates, especially mammals
Perfumes and cosmetic products	Aromatic plants that provide essential oils and other products used in cosmetics	Other cosmetic products	Especially from edible invertebrates such as insects (caterpillars) and other secondary animal products (eg eggs, nests)
Colorants and tannins	Plant materials (especially bark and leaves)	Hides and skin	Animal hides and skins used for various purposes
Utensils, craftsmanship products, building materials	Heterogeneous group of products including bamboos, fibres, etc	Medicine	Whole animals or parts of animals, including various organs used for medicinal purposes
Ornamental	Whole plants used as ornaments	Ornamental	Whole animals or parts of animals, including various organs used for ornamental purposes
Exudates	Products in the form of exudates from plants such as gum, resins, etc	Other non-edible animal products	Bones used as tools
Other	Plant extracts used as insecticides and fungicides		

Source: Walter (2001)

Many uses

Table 2. Description of NTFP uses, constraints and opportunities

Product category	Use	Management	
		Constraints	Opportunities
NTFPs of animal origin	Food	– Gathering/destruction of habitat – Seasonality of products – Difficulty in maintaining sustainable harvesting rates – Difficulty in regulating harvesting and use to ensure legality	– Most actors have a good knowledge of the products – Possibilities for domestication – Possibilities for processing – Possibilities for increasing access to marketing information – Job creation
	Medicinal and psychotropic	– Poor knowledge of products (only a few privileged actors have good knowledge) – Products are difficult to process (eg because of toxicity or other dangers) – Notoriety of healers – Difficulty in accessing information – Difficulty in regulating legality	– Development of new products (edible, medicinal) and chemicals through scientific research – Use of local knowledge
	Craftsmanship	– Gathering/destruction of habitat – Lack of security over the resource	– Maintain constant supply – Flow-on effects to other sectors (eg fabrics in cane furniture) – Job creation – Development of national markets
NTFPs of animal origin (eg reptiles, birds and insects)	Food	– Difficulty of domestication – Destruction of habitat – Risk of over-harvesting – Difficulties in managing resource sustainably – Difficulty in collecting and accessing data on harvesting – Difficulty in enforcing regulations – Poaching	– Enhancement of some sectors by reorienting the uses of NTFPs – Ease of establishing a regulatory framework
	Medicinal and psychotropic	– Weakness of the resource – Notoriety of healers – Difficulty in accessing information	– Development of new products through scientific research – Taking into consideration local know-how
	Craftsmanship	– Lack of guarantee of resource availability	– Ease of establishing regulations

Source: Nguimbi (2006)

Limited access to promising markets: harvesters do not have enough information on the prices obtained for their NTFPs beyond their production area

Lack of organization for better sales of their products

Lack of a policy to encourage increased processing of NTFPs.

Gabon

Legislation assigns very little importance to NTFPs (especially those used for food)

No guarantee of regular supply to markets, causing problems in preservation (particularly foods), processing, marketing and investment

Informal (unregulated) exploitation of NTFPs is high

Low capacity to invest in product development

Exploitation of NTFPs is regarded as seasonal activity that contributes to improving the living conditions of rural and urban populations.

Cameroon

Lack of synergy between support structures and the various actors involved

Limited and undeveloped markets

Lack of processing and product preservation techniques

Lack of technical and institutional support

Lack of appropriate markets

Lack of information on NTFPs at economic, institutional and policy levels.

Congo

No consideration given to traditional knowledge about the exploitation, management, processing and use of NTFPs

Lack of participation of local people in forest management in general and NTFPs in particular

Inadequate involvement of researchers and state authorities, hindering the task of improving scientific and technological knowledge

Lack of effective involvement of development actors (NGOs) as an interface between authorities and local communities in the process of policy development.

Where to from here?

Cameroon, Gabon, Congo and Central African Republic have each held national workshops to validate the policies and a final report incorporating the results of these workshops is available through ITTO (fi@itto.or.jp). ITTO is continuing work to add value to NTFPs and other forest services through its biennial work programs and through its new thematic programs.

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Changing realities for tropical forest managers

The tropical timber industry needs effective self-policing to maintain markets

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Food vs. forest: Small scale cultivators in Gabon *Photo: W. Laurance*

If there is one constant these days, it is that nothing is constant. This is certainly so for tropical forest management. In recent years the underlying drivers of tropical deforestation have shifted profoundly, prompting conservationists to reassess their strategies for protecting forests. Those in the tropical timber industry need to think hard and fast about these new realities. If they fail to do so, they will increasingly be considered part of the forest-conservation problem, rather than part of the solution.

Tropical forests are disappearing fast—at a current pace of around 13 million hectares a year

The arguments below build upon a recently published essay (Butler and Laurance 2008). Aspects of the argument are inevitably simplistic because of generalizations across many nations and regions in the tropics, but the overall case is broadly valid.

Changing drivers of deforestation

Tropical forests are disappearing fast—at a current pace of around 13 million hectares a year, according to the FAO (2005). While this rate has remained roughly constant over the past few decades, the underlying causes of deforestation have shifted quite dramatically—from mostly subsistence-driven deforestation through the 1980s, to far more industrial-driven deforestation more recently (Geist and Lambin 2002; Rudel 2005).

Beginning around the end of World War II and continuing through the late 1980s, tropical deforestation was largely promoted by government policies for rural development. These included agricultural loans, tax incentives, and road construction, all spurred by rapid population growth in tropical nations (Rudel 2005). Such initiatives, especially evident in countries such as Brazil and Indonesia, promoted large influxes of colonists into frontier areas and often caused alarming forest loss.

The idea that rural farmers and shifting cultivators were responsible for most deforestation (Myers 1993) prompted conservation strategies, such as Integrated Conservation and Development Projects (ICDPs), that attempted to link nature preservation with sustainable rural development (McNeely 1988). Today, however, few consider ICDPs to have been successful. Critics point to weaknesses in their design and implementation and the fact that local peoples typically used ICDP funds to bolster their incomes, rather than replace the benefits they gain from exploiting nature (Brandon and Wells 1992; Ferraro 2001; Johannesen and Skonhoft 2005).

More recently, however, the impacts of rural peoples on tropical forests seem to be stabilizing. Although many tropical nations still have considerable population growth, strong urbanization trends (except in Sub-Saharan Africa) mean that rural populations are growing more slowly, and are even declining in some areas (U.N. 2004). The popularity of large-scale frontier-colonization programs has also waned (Fearnside 1997; Rudel 2005). If such trends (illustrated by the examples in the accompanying charts) continue, they could begin to alleviate some pressures on forests from small-scale farming, hunting, and fuel-wood gathering (Wright and Muller-Landau 2006).

At the same time, globalized financial markets and a worldwide commodity boom have (at least until recently) created a highly attractive environment for the private sector. Under these conditions, large-scale agriculture—crops, livestock, and tree plantations—by corporations and wealthy landowners is increasingly emerging as the biggest direct cause of tropical deforestation (Rudel 2005; Nepstad *et al.* 2006). Surging demand for grains and edible oils, driven by the global thirst for biofuels and rising standards of living in developing countries, is also spurring this trend (Von Braun 2007; Scharlemann and Laurance 2008). In Brazilian Amazonia, for instance, large-scale ranching has exploded in recent years, with the number

of cattle more than tripling (from 22 to 74 million head) since 1990 (Smeraldi and May 2008), while industrial soy farming has also grown dramatically (Fearnside 2001).

Other industrial activities, especially logging, mining, and petroleum development, are also playing a critical but indirect role in forest destruction (Laurance *et al.* 2001; Asner *et al.* 2005; Finer *et al.* 2008). These provide a key economic impetus for forest road-building, which in turn allows influxes of colonists, hunters, and miners into frontier areas, often leading to rapid forest disruption and cycles of land speculation (Walker 1987; Laurance 2001, 2004). Even staunch advocates of sustainable timber management concede that industrial logging in the tropics has catalyzed more forest destruction than forest conservation (Mason and Putz 2001).

Changing conservation strategies

While the recent surge in industrial-scale deforestation is alarming, it also signals potential new opportunities for forest conservation (Butler and Laurance 2008). Rather than attempting to influence hundreds of millions of forest colonists in the tropics—a daunting challenge—proponents of conservation are increasingly focusing their attention on a vastly smaller number of resource-exploiting corporations. Many of these are either multinational firms or domestic companies seeking access to international markets, which forces them to exhibit some sensitivity to the growing environmental concerns of global consumers and shareholders. When they err, such corporations are vulnerable to attacks on their public image.

Today, few corporations can safely ignore the environment. A growing cadre of conservation groups is targeting corporate transgressors, mobilizing support via consumer boycotts and public-awareness campaigns. For example, following an intense public crusade, Greenpeace recently pressured the largest soy crushers in Amazonia to implement a moratorium on soy processing, pending development of a tracking mechanism to ensure their crop is coming from environmentally responsible producers (Kaufman 2007). Earlier boycotts by the Rainforest Action Network (RAN) prompted several major U.S. retail chains, including Home Depot and Lowe's, to alter their buying policies to favor more-sustainable timber products (Gunther 2004). RAN also helped to convince some of the world's biggest financial firms, including Goldman Sachs, JP Morgan Chase, Citigroup Inc., and Bank of America Corp, to modify their lending and funding practices for forestry projects (Graydon 2006).

The impacts of such activities are far from trivial. Corporations perceived as 'environmental bad guys' can see their market shares fall rapidly. For example, Asian Pulp and Paper (APP), widely criticized for promoting forest destruction in Sumatra, has had its supply contracts cancelled by major retailers such as Office Depot, Walmart, Staples, and Woolworths (Hance 2008a). By running afoul of environmental groups like Rainforest Alliance and World Wildlife Fund, APP could long be tainted as an undesirable business partner.

Many industries, motivated in part by fears of negative publicity, have established coalitions that claim to promote environmental sustainability among their members. Examples of such industry groups include *Aliança da Terra* for Amazonian cattle ranchers, the Roundtable on Sustainable Palm Oil in Southeast Asia, and the Forest Stewardship Council (FSC) for the global timber industry. Environmental groups are increasingly focusing on such trade groups. Rather than attempting to monitor hundreds of different corporations, conservationists feel they can have a big impact by striking just a few industrial pressure points. For example, Greenpeace recently revealed that food giants like Nestlé, Procter and Gamble, and Unilever were using palm oil grown on recently deforested lands, despite assurances to the contrary from the Roundtable on Sustainable Palm Oil (Anon. 2008). Likewise, the FSC has come under fire by environmentalists as well as the *Wall Street Journal* for a variety of perceived sins, such as initially sanctioning APP operations in Sumatra (Hance 2008b).

Corporations are also being swayed by carrots as well as sticks. Firms that buy into sustainability enjoy growing consumer preferences and may receive premium prices for their eco-friendly products. For instance, 'green' timber products accounted for $7.4 billion in sales in the United States in 2005, and are expected to grow to $38 billion there by 2010 (Yaussi 2006). Support for eco-certified wood products is even stronger in Europe. Unfortunately, many suppliers in the tropical timber and wood-products industries, including China, the world's largest exporter of wood products, still are largely missing out on this growing market niche.

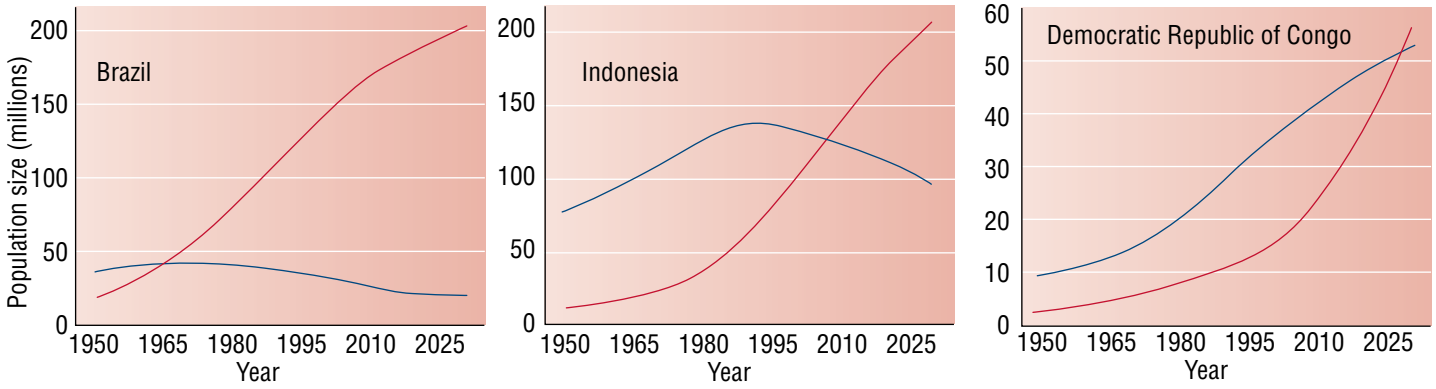
Lessons for the tropical timber industry

The tropical timber industry is vulnerable to boycotts and negative publicity, for at least three reasons. First, only a small fraction of tropical forest slated for timber production (~5%) is legitimately eco-certified. Second, as discussed above, logging is an indirect but nonetheless major driver of tropical deforestation (Laurance 2000, 2001; Asner *et al.* 2005). Third, corruption and illegal trade are still endemic in the industry (Smith *et al.* 2003; Laurance 2004), despite efforts by ITTO and other entities/initiatives, such as FLEGT, COMIFAC, PFBC, AFLEG, and FORCOMS, to improve forest governance (Jensen 2007; Mertens and Méthot 2008).

Conservation organizations are already promoting a full boycott of Indonesian timbers in the U.S, and are eyeing wider bans on other timber importers. The broad perception that much of the tropical timber imported

Big cities

Urban (red) and rural (blue) populations in major tropical nations



Source: U.N. 2004

Changing drivers: Logging road construction in Gabon *Photo: W. Laurance*

by Chinese wood manufacturers is illegal or unsustainable (Ekström and Goetzl 2007; Rubin 2007) increases the chances of a general boycott of Chinese wood products (Laurance 2008). The Chinese government recently released a draft forestry handbook to provide guidelines for its companies operating overseas, but the country's timber exports remain at high risk in sensitive markets.

Timber-producing countries are also raising their expectations for wood-importing corporations and countries. The tendency for China and other wood-manufacturing nations to import unprocessed logs (Kozak and Canby 2007), which provides little local employment in timber-exporting nations, makes them vulnerable to adverse reactions. For example, the key timber-producing nations in Central Africa—Cameroon, Central African Republic, Democratic Republic of Congo, Republic of Congo, and Gabon, collectively responsible for nearly 40% of all tropical timber exports—are reducing raw-log shipments and introducing legislation to require local manufacturing and value-adding for their timber products (Langbour and Gérard 2007).

The bottom line is that the tropical timber industry can expect an increasingly hard line from environmental groups and consumers, as part of a broader effort to combat the growing impacts on forests of industrialization and globalization. Although many in the tropical timber industry believe a 'use it or lose it' approach is the best way to promote natural forest maintenance (e.g. Armitage 1998; Pearce *et al*. 2002), the industry is one of the most conspicuous—and therefore vulnerable—exploiters of forests. Unless it moves aggressively toward effective self-policing, it will increasingly find itself the target of adverse actions and publicity. The smart tack under such circumstances is to take environmental sustainability very seriously. It is simply good business.

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An ITTO-sponsored project has supported a public-private partnership to promote the adoption of good forest management practices in the Brazilian Amazon

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Forestry 101: Training activity in project area *Photo: J. Carvalho*

Timber exploitation plays an important role in the economy of the Amazon region but also in the destructive processes affecting the region's forests. Much of the logging practiced widely in the Amazon today can be regarded as mining because it does not take into account the potential renewability of the natural resource. Although logging is usually highly selective, inadequate operational techniques often mean that significant damage is done to the remaining forest. Moreover, logged-over forests are often legally or illegally cleared, burnt out, and converted to agricultural land. In this process, many endemic animals and plants disappear (Embrapa/CIFOR 2000).

Sustainable forest management (SFM) based on the application of reduced impact logging practices has been promoted as an attractive mechanism by which the economic potential of the forests can be realized while maintaining their environmental and economic values. But, after more than 30 years of research in SFM, and even though several research projects conducted in the region have shown positive results, commercial loggers remain reluctant to adopt it. This has led to a paradoxical situation in which the SFM practices demonstrated by research have been incorporated into forest management regulations but, in practice, timber companies do not follow them (Embrapa/CIFOR 2000).

Although logging is usually highly selective, inadequate operational techniques often mean that significant damage is done to the remaining forest.

In general, logging entrepreneurs do not believe in the benefits of introducing good management practices to their operations and therefore do not apply them. A diagnostic survey of forest management projects in the Paragominas region, conducted in 1995 by the Brazilian Agricultural Research Corporation (Embrapa), the Brazilian Institute for Environment and Renewable Natural Resources (IBAMA), and other partners, revealed the need to establish SFM demonstration projects at the commercial scale with the active involvement of timber companies. This was deemed especially important in the eastern Amazon, the most important timber-producing region; such a project would complement an ongoing ITTO-sponsored project in the Tapajós Forest in the western part of Pará state (Embrapa 1997).

Accordingly, Embrapa, the Center for International Forestry Research (CIFOR) and other relevant institutions of the region decided to formulate ITTO Project PD 57/99 Rev.2 (F): *Sustainable management of production forests at the commercial scale in the Brazilian Amazon—Phase I*. This was to be an SFM demonstration project involving two local timber companies as partners (Silva *et al.* 2006). The project was approved and funded by ITTO in 1999, and its implementation by Embrapa and partners commenced in 2000. The project was completed in 2008.

Project strategy

The main idea of the project was to develop, test, evaluate and transfer a forest management system (FMS) for use by timber enterprises working under the production conditions typically found in *terra firme* forests in the Brazilian Amazon. The FMS consists of a set of tools designed to assist forest companies in the planning, implementation, evaluation and monitoring of their operations to achieve sustainable economic benefits under current and foreseeable environmental and social conditions. It comprises two areas of intervention: *silviculture*—the use of techniques and tools to improve the economic efficiency and working conditions of forest operations (pre-harvesting, harvesting and post-harvesting silviculture) and to reduce their negative environmental impacts; and *economic planning and control* of the enterprise's operations—an integrated

Located: Students use GPS in a project sample plot *Photo: J. Carvalho*

system for reporting and analysing production and financial movements to support efficient planning and control.

Two timber companies were selected as project partners: *Juruá Florestal Ltda* and *Cikel Brasil Verde Madeiras Ltda*. Both are representative of a large number of forest enterprises in the Amazon.

During the course of the project, many other timber enterprises affirmed their interest in the project and the tools that had been developed.

After the development of the silvicultural and managerial tools, both Juruá and Cikel tested and validated the FMS prototype (FMS-P) at an operational scale. A system to monitor the ecological, social and economic impacts of the FMS was also developed and tested.

The FMS prototype

Silvicultural tools

As part of the FMS, the following silvicultural tools were developed:

Technical guidelines for reduced impact harvesting: a set of procedures regulating harvesting operations in order to: a) minimize environmental damage, conserve the potential for subsequent commercial harvesting, and maintain basic ecological services; b) reduce operational costs; and c) increase the efficiency of harvesting operations and reduce waste (Pokorny *et al.* 2005; Sabogal *et al.* 2000);

Technical guidelines for post-harvesting silviculture: a set of procedures regulating post-harvesting silvicultural interventions in order to: a) increase the growth rates of desired timber species, thus shortening the cutting cycle; b) estimate the occurrence of desired regeneration; and c) increase the quality of future crops (Carvalho *et al.* 2006; Carvalho *et al.* 2008);

Software for planning harvesting and controlling forest production (PLANEJO): a computer program for improving forest management planning with the aim of increasing an enterprise's efficiency and viability and its control of forest operations (Silva *et al.* 2007b); and

Guidelines for the establishment of permanent sample plots and software for monitoring growth and yield: a tool for the implementation of a continuous forest inventory system using the *Monitoramento de Florestas* (MFT) software for managing permanent sample plot data. Its main outputs are stand tables and data on growth, mortality and recruitment (Silva *et al.* 2005; Silva *et al.* 2007a).

Managerial tools

The FMS prototype includes several managerial tools:

Manual for monitoring an enterprise's operational performance: a set of procedures linked to a computer-based software for recording, analysing and reporting the operational performance of an enterprise's operations in order to control quality and quantity and to support management decisions (Pokorny *et al.* 2008).

Manual for monitoring enterprises' economic operations: a manual and corresponding software for analysing the productivity and costs of forest operations (Pokorny *et al.* 2007); and

Manual for controlling and planning an enterprise's operations: an integrated, computer-based information system to assist enterprises in controlling and planning their operations through, for example, the calculation of costs and benefits, investment analyses, the documentation of production processes, and planning schemes (Pokorny *et al.* 2008).

Monitoring and evaluation system

The project developed a tool for monitoring the social, ecological and economic impacts of the FMS, including its impacts on local communities, and procedures for monitoring logging damage (Martins *et al.* 2007). ITTO's *Criteria and indicators for the sustainable management of tropical forests* (ITTO 2005) were applied in forest management units of Cikel *(Rio Capim)* and Juruá *(Arataú* and *Santa Marta)* and a manual for auditing forest management projects was developed in collaboration with IBAMA. These auditing procedures have been implemented successfully by IBAMA and the State Environment Agency of Pará (SEMA) for the analyses of forest management projects in the Amazon region in both public and private forests (Pokorny *et al.* 2006).

Training

The project's training program had three components. Silvicultural tools were introduced via an intensive training of forest engineers and practitioners at the Tropical Forest Institute (*Instituto Floresta Tropical*— IFT) training site in Cauaxi, followed by in-service training during the execution of forest management operations (pre-harvesting inventories, harvesting, etc); the quality of forest management operations was assessed over the course of project implementation. A more elaborate transfer mechanism was needed for the third component, which was the transfer of the

management tools: it involved the intense participation of enterprise staff in the development and testing process to ensure the feasibility and usefulness of the tools and their coverage of all enterprise activities.

Dissemination of FMS tools

The outcomes of various project components were documented in working papers, some of which have been published in international scientific journals. A number of publications targeted at different audiences was produced and distributed widely. The project also made extensive use of media such as newspapers, television, video, folders, and the internet; workshops, conferences and seminars were convened to present project findings and to help assess the progress made.

To ensure the dissemination of project findings to a wider group of clients, two field days were organized directed towards forest companies, loggers, decision-makers, policymakers, advisors, researchers and students. In addition, the project offered opportunities for researchers and graduate students to carry out relevant research.

Involvement of partners critical

As foreseen by the project strategy, the active involvement of two major timber companies in the development and validation of the various silvicultural and managerial tools contributed significantly to the validity and acceptance of the tools within the forest sector. Both companies contributed significant human and financial resources. During the course of the project, many other timber enterprises affirmed their interest in the project and the tools that had been developed. In numerous cases the project was able to support such companies in implementing good forest management practices. In particular, the collaboration with the IFT facilitated the dissemination of project outcomes to a wider range of stakeholders. The active involvement of IBAMA as the legal authority was also extremely positive, and enabled the project to make a direct contribution to improving the effectiveness and role of governmental organizations in promoting SFM in the region. Moreover it led to the decision of IBAMA, through the Brazilian Forest Service, to become an active partner in the second phase of the project.

Finally, an impressive number of scholars, experts and students were actively involved as partners or collaborators during the project; most of the project's outcomes were achieved with their cooperation and support. This contributed greatly to the quality of the project and to the effective dissemination of its results.

The wider uptake of the FMS

A strategy to transfer the FMS to timber enterprises has been designed for the project's second phase. The FMS tools will be disseminated widely to relevant stakeholders by building the capacity of training centres and universities in the Amazon region to transfer SFM tools to timber companies and the government environmental agencies responsible for forest management. The direct and indirect effects of transferring these tools will be evaluated with the aim of refining both the tools and the strategies for their dissemination.

To be implemented by Embrapa, the project's second phase will involve a wide range of partners, including the Ministry of Environment through the IBAMA and its Forest Management National Support Centre (CENAFLOR), the Brazilian National Forest Program, the Brazilian Forest Service, and the IFT. CIFOR and the University of Freiburg will provide institutional support. A number of other governmental and non-governmental institutions in the region will participate in and benefit from the project.

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Converting mahogany

Peru's efforts to monitor trade and contribute to sustainability of an endangered timber species

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Tower of value: Large mahogany tree in Peru *Photo: ITTO*

Big-leaf mahogany (*Swietenia macrophylla*) is an important commercial timber species in Peru and other producing countries. Its natural range stretches from Central America to South American regions of Peru, Bolivia and Brazil. Peru has been in recent years the world's largest exporter of mahogany timber, and one of the last countries with significant wild populations of this species.

Mahogany has been heavily logged due to the high price it commands in the international market, which has encouraged, in some cases, illegal logging. Countries trading timber from this species are required to monitor their mahogany population because the exports are regulated by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), with the species listed in the CITES Appendix II since 2002.

Mahogany has been heavily logged due to the high price it commands in the international market, which has encouraged, in some cases, illegal logging.

CITES trade controls entered into force for big-leaf mahogany in November 2003 and exports of mahogany are authorized by the respective national CITES Management Authority, which based on a non-detriment findings (NDF) report, issues an export permit. Many countries are adapting their legislations in order to fully implement the CITES regulations. Properly making NDFs is a relatively complex issue, as it requires information on the existing population and its dynamics, and thus many mahogany producer countries have claimed to face difficulties to fully comply with the CITES regulations.

Peru has been constantly revising its regulations to improve forest management, including logging and trade control. The country recently revised and reformulated its legislation with a new Forest Law enacted through a decree on 30 June 2008. Despite the attempts to improve its legislation and trade rules, and the fact that volumes and importance of mahogany trade in Peru has been greatly reduced, the issue remains controversial and Peru mahogany trade was until recently included in the CITES Review of Significant Trade (RST) process.

Forest law in Peru

Logging in Peru had been, until recently, governed by Law Nº 27308 of 2000 and its complementary regulation, the *Decreto Supremo* 014/2001-AG, promulgated in 2001. Based on this law, logging is only allowed after having a Forest Management Plan and an Annual Operating Plan (*Plano de Operación Annual* - POA) approved by the competent authority. The management plan considers several criteria, including a minimum harvesting DBH of 75 cm and that 10% of the trees are kept to facilitate adequate regeneration (seed trees). In 2002, taking into consideration the need to ensure the sustainability of the national forests, and based on a national debate, Peru adopted a new forest strategy (ITTO 2006).

CITES regulations and the recent ratification of the Free Trade Agreement (FTA) /*Tratado de Livre Comercio* (TLC) signed in 2006 with the U.S.A., forced the Government of Peru to adopt stricter measures to control mahogany trade. The FTA has a special chapter dealing with the forest industry, and Peru was required to put into force new regulatory and control mechanisms. Furthermore, despite the efforts of the Peruvian government to improve its laws and regulations to implement the CITES regulations, the Peruvian legislation is currently classified under "Category 2" of the CITES classification regarding the effectiveness of legislation, and several changes to improve legislation and create new mechanisms to improve control on the origin of timber to be exported are needed to move up to "Category 1".

Main features of the new forest law

The recently signed FTA with the U.S.A. has been a driving force to change the Peruvian Forest Law, as well as to introduce other changes that are also generally in line with CITES requirements. Some of the proposed changes go beyond the forest legislation, but they are also important as they include provisions of the penal code to enforce forest legislation, regulatory measures related to confiscated timber and other aspects. A decentralization of the forest administration took take place at the end of 2008, spurred by the swift enactment of the new forest law and other related laws regulating forest resources. The main decisions and changes that are to be introduced in the institutional and legal frameworks, and in the administrative procedures affecting forest management and forest products trade are:

- INRENA, based on the new Forest Law, was replaced by the National Forestry and Wildlife Authority under the Ministry of Agriculture (MAG);
- The National Forestry and Wildlife Authority together with 25 regional governments will be directly responsible to manage and control the forest sector;
- OSINFOR (*Organismo Supervisor de los Recursos Forestales Maderables*) will have its role expanded, will act as a "national auditor" and will be responsible for the definition of export quotas for protected timber species, for field checking and approval of the POAs and other issues;
- All CITES-listed timber species must be field verified prior to logging;
- Protected areas and other forest environment related issues will be under the Ministry of Environment; and
- All harvesting and timber transportation equipments (e.g. skidders and trucks) must have a GPS to be used in a tracking system.

Some other strategic issues under consideration by the government and relevant to the forest sector and CITES include:

- The Penal Code will be revised to incorporate specific provisions related to international and national trade of protected specimens and species, and provisions for investigation;
- Revision of legislation has been considered important to:
  - i) Avoid/ prevent the creation of unnecessary transaction costs, especially in the forest law in dealing with forest management plans;
  - ii) Reduce restrictions and control on plantation forests, timber and other products from forest plantations.
- Finding appropriate alternatives for handling confiscated wood.

Forest Administration

The National Institute for Natural Resources (INRENA), established in 1992, was the CITES Management Authority for Peru until recently. Under the new Forest Law, the National Forestry and Wildlife Authority is the new Management Authority, while the National Agrarian University of La Molina (*Universidad Agraria La Molina* – UNALM), Faculty of Forestry, will continue to act as the CITES Scientific Authority.

OSINFOR was created in 2000 by Law Nº 27308 and became part of INRENA, acting as the responsible agency for monitoring compliance with forest management plans in timber-producing concessions. With the advent of the new Forest Law, OSINFOR became an independent agency (Decreto Legislativo Nº 1085, of 28 June 2008), and now it is expected to play a much broader role, covering supervision, control and forest law enforcement, including the establishment of export quotas and other aspects.

Institutional limitations

The major institutional weaknesses affecting the ability to implement CITES regulations in Peru are related to the lack of funding, lack of human resources (especially qualified personnel), and weak infrastructure in the field.

Proper implementation of CITES regulations requires a structure capable to make NDFs (a scientific procedure that provides evidence that harvesting does not threaten the species' survival), which entails a gathering of a significant amount of information. Peru, like many other countries where mahogany occurs, does not yet have a reliable inventory of mahogany; nor does it have sufficient information on its silviculture, population dynamics and other aspects, which creates difficulties in making accurate NDFs for the species.

In spite of the problems, Peru has made some progress. In 2006, for instance, UNALM informed the CITES Mahogany Working Group (MWG) that the country was improving its ability to make NDFs, based mainly on an ITTO-funded project to implement a specific study on mahogany populations. The establishment of a Technical Committee to support the Scientific Authority has been suggested as a way to increase its capacity. This would be an option to involve other stakeholders, including representatives of NGOs and of the private sector, and could be a way to reduce conflicts and increase the transparency of the process.

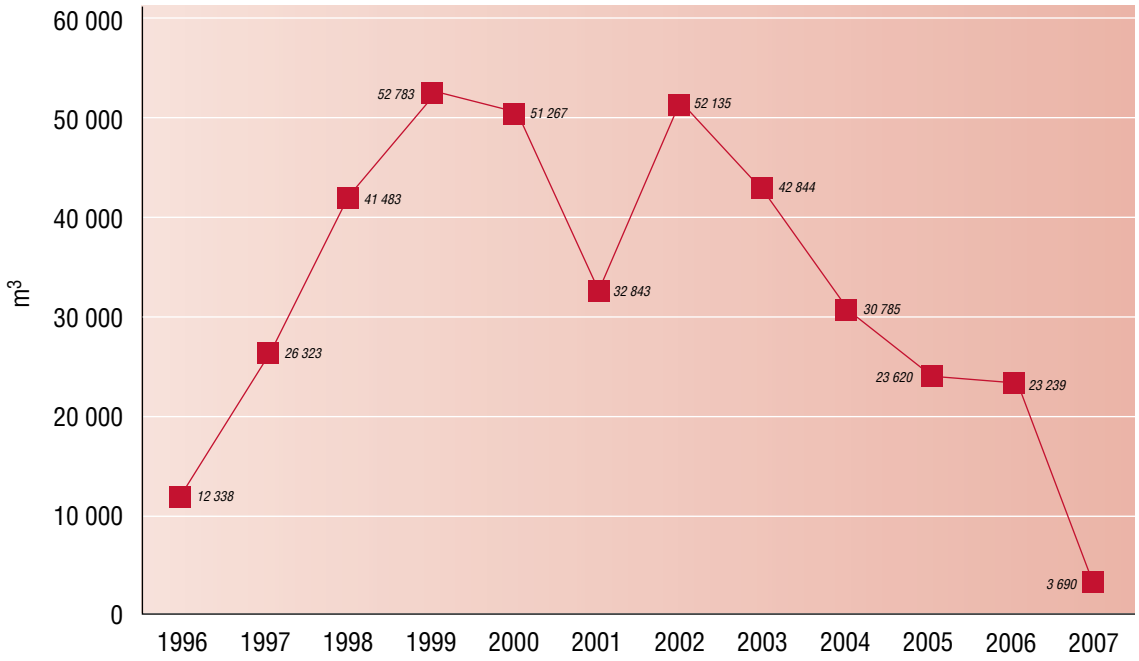
Trade

Peru's forest industry exports are mostly sawnwood from a relatively limited number of species. Exports of sawnwood have represented on average about two-thirds (in value terms) of all exports of timber products over the last few years. Mahogany export is fairly important and until recently has represented around 80% of the total value of sawnwood exports.

Data on production of mahogany sawnwood in Peru are scattered and have differed among the available sources (ITTO 2004, WWF-Peru 2002, INRENA 2007). In the 1950s, production of sawnwood reached around 10 000 m^3 per year, and in 1975, the production reached 15 000 m^3. From 1975 on the production increased at a faster rate, reaching a record of 77 552 m^3 in 1995. In the following years the production constantly declined to 61 588 m^3 in 1999, 44 246 m^3 in 2005, and to 30 705 m^3 in 2006.

Slashed

Volume of mahogany exports from Peru (1996-2007)



Source: Adex 2008

The mechanism adopted by Peru to comply with the CITES regulations is based on sawnwood export quotas. Since 2004, the Government of Peru has set an export quota every year based on a report issued by the national CITES Scientific Authority.

The chart above shows the evolution of the total annual export volume from 1996 to 2007. In 2002, sawn mahogany exports peaked at slightly over 52 000 m³, worth US$55 million. The increase in volume was mostly a result of restrictions on mahogany exports imposed by Brazil. The export volume dropped to less than 43 000 m³ in 2003, but the value remained high at about US$47 million (ITTO 2004) due to price increases. Since then, mahogany export has declined drastically, and only about 3700 m³ was exported in 2007. Export volumes declined further in 2008.

Peru has defined its mahogany quotas taking into account the number of trees that can be harvested.

The Exporters Association of Peru (ADEX) considers that the reduction in mahogany exports shows the commitment of the country to ensure the sustainability of the species, and affirms that all Peruvian exported mahogany timber in recent years comes from legal sources.

The Peruvian CITES Scientific Authority established a mahogany quota of 4983 m³ for 2007, but the exported volume was lower (approximately 3700 m³). This difference was claimed to consist of stocks in the production chain that were to be exported in 2008. For 2008, the Scientific Authority initially agreed on a quota of 755 trees, but this number was reviewed and the official quota is now 715 trees, which based on the conversion factors adopted by the government, represents a volume of 3475 m³ of sawnwood to be exported.

The quota has been established based on harvesting areas located in 13 concessions and 3 special harvesting permits. INRENA has reported that the quota, based on UNALM estimates, represents only 2% of the total number of commercial mahogany trees.

Peru has defined its mahogany quotas taking into account the number of trees that can be harvested. Conversion factors were used to convert tree volume into final product volume, thereby defining the quota in cubic meters that can be exported. Other countries have taken a similar approach in different situations, and the discussion on how reliable and efficient such conversion factors can be in dealing with timber is becoming topical.

Roundwood to sawnwood conversion factors

The establishment of the conversion factors used to set mahogany export quotas in Peru has been controversial. The conversion factors used to set the export quotas have been reduced, indicating that Peru recognized that the coefficients used in the past were too high. In 2008, INRENA established, based on the *Resolution Jefatural* N° 002-2008, new conversion factors for mahogany. The new coefficients are:

- From the tree volume to the harvested log: yield of 71% (considering 29% as loss due to natural defects of tree);
- From the log to sawnwood: yield of 52%;
- Export grade: 70% of the total sawnwood produced.

Therefore, only 26% of standing tree volume can be considered in establishing export quotas for sawnwood. It is interesting to note that the sawnwood conversion factor was reported in a FAO study carried out in 1978 (over 30 years ago), and the exportable percentage was based on US-based National Hardwood Lumber Association (NHLA) grading information. There is no technical evidence that these coefficients are representative for Peru.

The use of conversion factors as a basis to control the timber industry and to define export quotas have been discussed in many countries, usually with few practical application perspectives. It should be noted that conversion factors can be affected by log quality, log dimensions, harvesting efficiency, processing efficiency, technology, training, market requirements and other factors.

The difficulties in developing useful conversion factors can be seen in a recent report prepared by Kometter and Marvi (2007). The report outlines a methodology to estimate yield of export grade sawnwood on a per tree basis for mahogany. Equations were developed based on 255 mahogany trees with DBH ranging from 75 to 160 cm. The results show that the yield coefficient for trees within a certain diameter class can vary by more than 50%.

Such factors cannot be applied at the company level. In fact, if the average conversion factor is applied at company level, it can generate penalties for those timber companies that are more efficient in timber processing and may open a window for illegal wood to enter the market. Thus, the adoption of country-wide conversion factors can also stimulate illegality and corruption.

Conversion factors can be an important tool for forest managers, but their effectiveness will depend on how they are developed, and especially how they will be applied. It seems to be unlikely that a single conversion factor will ever be able to represent all situations taking into account all particular factors; the cost of developing conversion factors for all situations would be too high. A possible alternative is to consider the use of conversion factors as an initial criterion for judging compliance with regulations and/or quotas, and in the case of significant deviation from the norm decide on the need for further field auditing.

Analysis and conclusions

In spite of many efforts and some progress, the Government of Peru has found it difficult to put in place a cost-effective and efficient regulatory system to avoid illegal logging. Permits for exports of CITES regulated species like mahogany are given year by year, with no long-term strategy, and this has limited investments in the sector. Furthermore, many forest concessions are not operational and the portion of timber coming from small land owners has increased. This makes control even more difficult.

The CITES Scientific Authority presented a report (Lombardi 2008) for the establishment of an export quota for mahogany. The report is largely based on the results of the ITTO project (PD251/03) implemented over the last few years, which analyzed estimates of the mahogany population and undertook succession studies. The quotas have been established based on number of trees to be harvested, with the conversion factors presented above used to define sawnwood export volume quotas. The use of conversion factors to estimate a national export quota does not seem to be a problem, but problems arise when applying such factors at the individual company level.

Conversion factors are affected by a large number of variables, and simply working with average values is not appropriate for assessing compliance with CITES and other requirements at company level. The conversion factors at company level should only be used as an initial evaluation criterion, with significant deviations from the average needing further investigation. Enforcing forest laws based on a general national conversion factor might penalize timber companies that are more efficient in sawmill processing, and this can also open a window for illegal wood in the market and to stimulate corruption.

ITTO and CITES are implementing a multi-year program to build capacity of countries to implement CITES listings for tropical timber species, with one activity being a recently convened regional workshop on the use of conversion factors to establish export quotas. Visit www.itto.int for more information on the program including the report of the conversion factor workshop (Spanish only).

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Getting more money for forests

ITTO promotes responsible investment in tropical forests

By Ramon Carrillo

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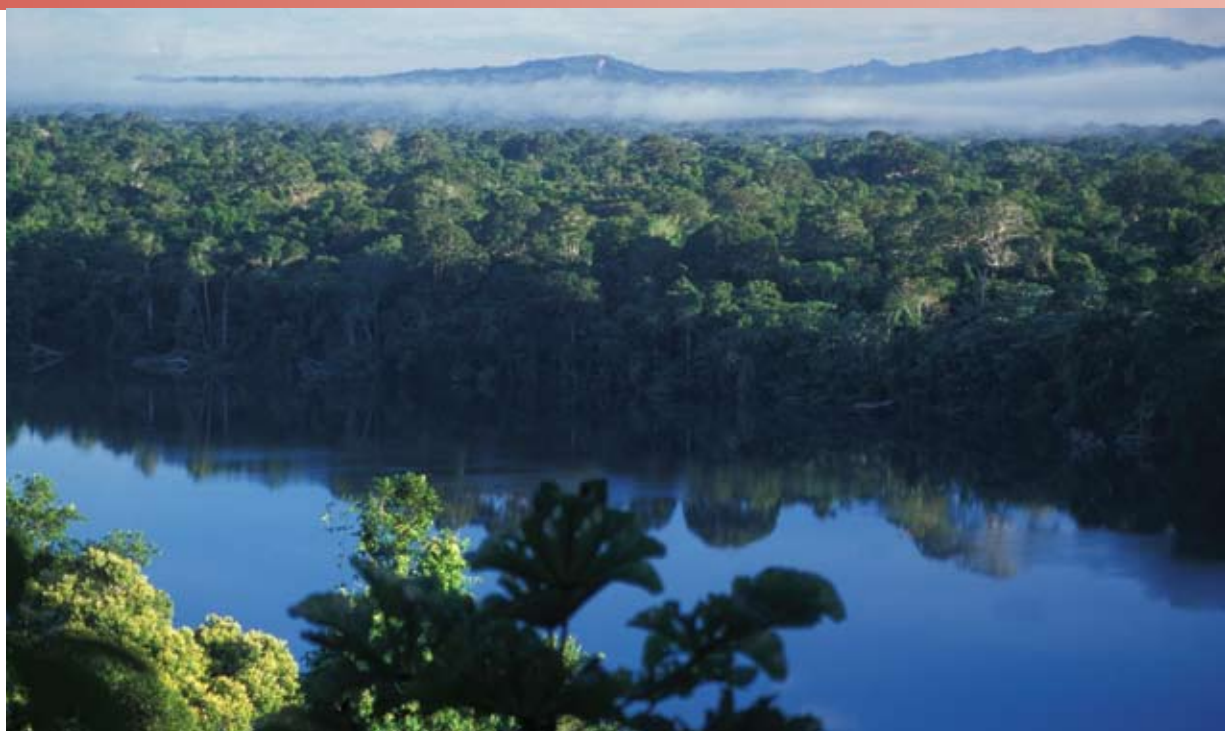

Fund me: Despite their many goods and services, natural tropical forests have been slow to attract investment *Photo: H. Castro (Conservation International)*

In 2006 ITTO launched a process aimed at encouraging investments in natural tropical forests. As part of this process it convened six forums—one at the global level, three at the regional level (for Latin America, Asia and the Pacific, and Africa) and two (in Bolivia and Republic of the Congo) at the national level.

All forums pointed out that current levels of investment in natural tropical forests fall well short of ensuring their sustainable management and the avoidance of conversion to other land uses.

Forum outcomes

The first of the forums, held at a global level in Mexico (ITTO 2007), addressed the following questions:

- Who are the potential investors in natural-forest-based enterprises in the tropics?
- How do such investors make investment decisions, and what kind of information do they need?
- What characteristics of natural tropical forest-based enterprises are particularly attractive to investors?
- How does the overall country-level business climate affect the attractiveness of forest-related investment, particularly of natural tropical forest-based enterprises?
- How can governments and companies attract more investment for natural tropical forests, and what are they currently doing?
- How can an investment promotion strategy improve both international and domestic investment?
- What other mechanisms can be used to make investment in tropical natural forests more attractive?

The Mexico forum led to a series of three regional forums (one each in the three ITTO producer regions of Africa, Asia Pacific, and Latin America/Caribbean), which examined the strengths and weaknesses of investments in forest-based enterprises in each region. They also identified possible ways forward and specific actions to be taken by the stakeholders involved.

The forums were organized in collaboration with a range of partners, including the Food and Agriculture Organization of the United Nations, the World Bank, the Interamerican Development Bank, the African Development Bank, industry associations, national forestry chambers and non-governmental organizations (NGOs). Collectively they brought together more than 600 people representing private investors, private and development banks, fund and asset managers, forest industries, forest communities and owners, brokers and traders, governments, and NGOs.

Investment forums held to date

International tropical forest investment forum: issues a nd opportunities for investment in natural tropical forest, Cancun, Mexico, April 2006

Latin America tropical forest investment forum, Curitiba, Brazil, November 2006

Asia-Pacific tropical forest investment forum, Bangkok, Thailand, August 2007

West-Central Africa tropical forest investment forum, Accra, Ghana, August 2007

Bolivia tropical forest investment forum, La Paz, Bolivia, March 2008

Congo Tropical Forest Investment Forum, Brazzaville, Republic of Congo, February 2009

All forums pointed out that current levels of investment in natural tropical forests fall well short of ensuring their sustainable management and the avoidance of conversion to other land uses (which are more remunerative in the short term). Nevertheless, the forums agreed that economic interests can be aligned with forest sustainability and poverty alleviation by improving conventional financial mechanisms such as taxation and by adopting innovative approaches such as payments for environmental services, as well as by introducing or strengthening government incentive policies and programs.

Forum recommendations

The forums made a number of recommendations for the main stakeholder groups, including national and local governments, small and large-scale enterprises, private-sector organizations, regional and international organizations, NGOs, and local communities. They can be summarized as follows:

To create an enabling environment for investment in natural tropical forests, actions should be take to:

- secure land tenure and access rights (including, where applicable, through transparent and secure concession contracts);
- strengthen forest governance;
- develop less complex and more equitable taxation;
- simplify bureaucratic and regulatory procedures;
- provide financial incentives for the adoption of sustainable forest management (SFM) in natural forests over other land uses;
- develop appropriate public procurement policies for timber, taking into account the needs of SFM in natural forests; and
- promote accessible credit lines for small-medium forest enterprises.

Link forest operations to capital markets by:

- managing forests for multiple uses (ie the supply of wood, non-timber forest products—NTFPs, environmental services, etc) within their ecological limits;
- developing alternative business models for NTFPs and environmental services, linking supply with demand;
- investing in technology, infrastructure, innovation and productivity improvements;
- creating a balance between small and large-scale enterprises through vertical integration;
- in order to facilitate market access, providing capacity building to improve managerial business skills in the forest sector;
- improving the marketing of certified forest products;
- incorporating social responsibility principles;
- developing risk insurance mechanisms; and
- considering new financial mechanisms, such as those related to the carbon sequestration services of forests.

The forums also recommended the further promotion of investment in natural forest management through national approaches. ITTO is already following up on this recommendation by supporting a series of national-level forums during 2008 and 2009. These have been tailored to the needs of individual countries with the aim of assisting them to strengthen policies that create a conducive environment for forest investment, develop action plans and identify opportunities for investment.

Other financing mechanisms such as payments for environmental services are just being conceptualized in local policies and need to be strengthened at national level.

The Bolivian National Forum in March 2008, for example, concluded that Bolivia has good investment opportunities in the processing of value-added products (eg furniture, doors and flooring), particularly given that the sector already has strong links to export markets. Moreover, there is considerable potential for investment in forest plantations because land is available and conditions are favorable for species such as teak, serebo and eucalyptus that have steady market demand. The forum suggested that incentives for the establishment of plantations together with technical assistance are needed in order to boost such potential. Other financing mechanisms such as payments for environmental services are just being conceptualized in local policies and need to be strengthened at national level. The forum was followed by a series of business roundtables organized by the Bolivian Chamber of Foresty (*Cámara Forestal de Bolivia*); these clearly demonstrated the potential for investment, recording business investment intentions valued at US$27.6 million.

Forum follow-up

A similar forum has recently been convened in the Republic of the Congo, and others are planned during 2009. While these forums have been 'planting a seed' in the different countries and regions that will, it is hoped, stimulate new investments in natural forest management in the tropics, it is important to recall that all such investments must be made on the basis of SFM. This, in turn, requires participatory decision-making processes that imply dialogue, negotiation and agreement among the stakeholders involved. It also requires that forest-based development take into account and respect the multifunctionality of the forest ecosystem, the cultural diversity of its inhabitants, and national laws and policies.

ITTO will continue facilitating the promotion of investment in tropical forests and the development of financial mechanisms for SFM, including through actions now under way, in association with a range of partners, as part of its 2008–09 biennial work program.

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Getting a better handle on forest products in India

An ITTO-sponsored workshop starts a process aimed at improving India's forest-sector statistics

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Seized teak: Accurate statistics are a key to combating illegal logging in India and elsewhere *Photo: J. Blaser*

Strengthening the technical capacity of member countries to report accurately and consistently on their forest-sector statistics is one of ITTO's explicit objectives; each year, the Organization requests its producer member countries to submit data on their timber sectors via the Joint Forest Sector Questionnaire (JFSQ). Reliable data on the forest sector is fundamental to monitoring the transparency of the tropical timber trade. Moreover, the development of systems for collecting, maintaining and disseminating forest-sector statistics is essential for developing effective policies for sustainable forest management. In India, however, statistical reporting in the forest sector has been inadequate to meet both national requirements and its international reporting obligations through the JFSQ.

The development of systems for collecting, maintaining and disseminating forest-sector statistics is essential for developing effective policies for sustainable forest management.

To help improve the country's forest-sector statistics, India's Ministry of Environment and Forests (MoEF) organized a four-day national workshop on forest products statistics, sponsored by ITTO, in New Delhi on 13–16 May 2008. The aim of the workshop was to improve the capacity of statistical reporting at the national level by:

- providing state forest departments and other stakeholders in India with an understanding of the country's international forest-sector statistical reporting commitments;
- improving the regional (ie within-country) coordination of reporting;
- improving the consolidation of national forest-sector statistics;
- finding solutions to problems relating to the collection, compilation and regular dissemination of forest product statistics; and
- clarifying roles and responsibilities for statistical reporting.

The workshop was designed to complement an ITTO-sponsored project—PD 291/04 Rev. 2 (M): *Establishment of a network to facilitate collection, processing and dissemination of statistics pertaining to tropical timber and other forestry parameters in India*—currently under implementation.

Workshop proceedings

An inaugural session opened by the Indian Minister of State (Forests and Wildlife) was followed by nine presentations from various states and union territories on the current status of the collection, analysis and dissemination of forest-sector statistics in India, the methodologies used in collecting and reporting production and trade data, and the uses to which forest products statistics were being put. The workshop was told that serious constraints to statistical reporting had been imposed by the changing role of forests in India from production to protection and the inability of reporting systems to accommodate these changes.

Representatives of ITTO and the United Nations Food and Agriculture Organization outlined the basic roles and responsibilities of a forestry statistical office and international reporting requirements for the JFSQ. The presence of representatives of the pulp and paper and plywood industries afforded the forum an opportunity for an exchange of views between the public and private sectors on forest-sector statistics. Working groups discussed constraints to the reliability and sustainability of forest product statistics in India and how to address information gaps in national and international

reporting and consolidate regional and national data. The workshop identified a number of important issues, including:

- the limited infrastructure and lack of trained personnel;
- the lack of priority given to statistics by state governments;
- the lack of communication on standardized statistical formats and collection methodologies;
- the lack of uniformity in statistical collection between states; and
- the lack of effective networking between forest departments and other agencies.

Other problems with forest-sector statistics are associated with India's large informal and non-timber forest product sectors, and the contribution of trees outside forests to the timber economy, none of which are adequately addressed in current national statistical surveys.

Workshop recommendations

Among other things, the workshop recommended that:

- existing information systems should be reviewed for the development of an effective forest-sector market information service. An information needs analysis should be carried out for data at the state/region/national and international levels;
- states and union territories should provide data in complete form and on time;
- relevant institutions, wood-based industries and their associations and other available validated data sources should be utilized in the development of a forest-sector data management system;
- the capacities of states and union territories to collect and disseminate data on the forest sector should be strengthened, including by the provision of the necessary hardware and software;
- a mechanism should be developed for assessing the contribution of non-forest areas to forest-sector production;
- responsibility for reviewing, planning and providing training in forest-sector statistics should be assumed by the MoEF and adequate steps taken to ensure the availability of high-quality, reliable data;
- a Directorate of Forest Economics and Statistics should be created under the MoEF for forest data networking as an outcome of a National Forestry Database Management System scheme;
- the allocation of funds to the forest sector specifically for the strengthening of forest-sector statistics in the states and union territories should be enhanced;
- capacity building is required to develop expertise at all levels;
- the states and union territories should provide copies of their annual administrative reports to the Indian Council of Forestry Research and Education (ICFRE) and the MoEF;
- the Directorate General of Commercial Intelligence and Statistics at Kolkata should assist ICFRE by providing trade data on the forestry items specified under chapters 12 and 44 of the harmonized system customs classifications;
- statistical cells should be created in each state and union territory and should be adequately strengthened on a regular basis;
- studies are needed on the removals of fuelwood, fodder, etc, from forests and other areas in order to supplement the forestry database;
- there is a need for more effective dissemination of forest-sector statistics at the state level; and
- specific surveys are needed to estimate the consumption of forest products by industry (eg pulp and paper) and on the informal sector, which is not covered by existing national surveys.

Other problems with forest-sector statistics are associated with India's large informal and non-timber forest product sectors, and the contribution of trees outside forests to the timber economy.

Conclusions

This workshop was the first ITTO-sponsored statistical workshop at a national level in India; an important outcome was the sensitization of state forest departments and other stakeholders on the importance of coordinating the collection of forest-sector statistics. The recommendations of the workshop have helped to guide on-going work under ITTO project PD 291/04 Rev. 2 (M) and will be useful in preparing a 'road map' for forest-sector statistics for India which, together with the development of the National Forestry Database Management System, is expected to provide comprehensive solutions to the problems of data management in India's forest sector.

ITTO can assist member countries in the development of statistical systems for national and international forest sector monitoring and reporting. For more information contact the ITTO Secretariat (maplesden@itto.or.jp).

The development of a bamboo utilization tool for Ghana

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In many tropical forests the sustainable use of bamboo resources is an important part of forest management. Bamboo has about 1500 documented uses worldwide (INBAR 2006). While its use in Southeast Asia is widespread, the extent of bamboo utilization in Ghana is relatively low. This is due largely to a lack of knowledge about the technical properties of native bamboo species and also poor processing techniques (UNIDO 2001). Nevertheless, the creation of a sound bamboo industry would help ease the pressure on Ghana's natural forests.

In an effort to address the under-utilization of bamboo resources in Ghana, ITTO's Fellowship program supported work to obtain data and information on the essential technological properties of bamboo species and their relationships in different ecological zones of southern Ghana. Specifically, the ultramicrostructural, physical, thermogravimetric behaviour, chemical and phytochemical properties of bamboo species were studied (Tekpetey *et al.* 2007; Tekpetey 2006).

Simply knowing technical properties is insufficient for the creation of a viable bamboo-based industry. It was clear that a tool to help determine the most appropriate uses for bamboo resources (both in natural stands and plantations) in a specific area and at particular times was needed in African tropical countries in which bamboo is common. This article introduces the Bamboo Utilization Tool (BuT), which has been created to bridge the knowledge gap on bamboo use; it is hoped it will help underpin a process towards the sustainable use of bamboo resources.

The BuT approach

BuT involves the integration of geographical, technological and socio-cultural information pertaining to the quality, quantity and consumption patterns of native bamboo resources in Ghana. A review of earlier research on bamboo resources identified some commonalities as well as significant variations in bamboo parameters among bamboo-growing countries (Ebanyenle and Oteng-Amoako 2007; Hartter and Boston 2006, Smith *et al.* 2006). A number of these parameters interact to determine the uses to which a bamboo resource in a developing country like Ghana can be put.

A BuT analysis proceeds in four steps. The first three of these involve the collection of values for three indices: 1) an 'availability and accessibility' index; 2) a 'technological property' index; and 3) a 'socio-cultural' index. The fourth step in the process involves the use of an integration module. BuT can be represented by the following equation:

BuT = (AAi + TPi + SCi), where:

AAi = the availability and accessibility index

TPi = the technological properties index

SCi = the socio-cultural index.

Each index is described below.

AAi: This index is a numerical summation of the ranking of the extent and quality of bamboo resources in a geographical location at a specific time. It considers both natural and planted stands of bamboo as well as bamboo species diversity and the accessibility of the resource.

ITTO fellowships offered

ITTO offers fellowships through the Freezailah Fellowship Fund to promote human resource development and to strengthen professional expertise in member countries in tropical forestry and related disciplines. The goal is to promote the sustainable management of tropical forests, the efficient use and processing of tropical timber, and better economic information about the international trade in tropical timber.

Eligible activities include:

- participation in short-term training courses, training internships, study tours, lecture/demonstration tours and international/regional conferences;
- technical document preparation, publication and dissemination, such as manuals and monographs; and
- post-graduate studies.

Priority areas: eligible activities aim to develop human resources and professional expertise in one or more of the following areas:

- improving transparency of the international tropical timber market;
- promoting tropical timber from sustainably managed sources;
- supporting activities to secure tropical timber resources;
- promoting sustainable management of tropical forest resources;
- promoting increased and further processing of tropical timber from sustainable sources; and
- improving industry's efficiency in the processing and utilization of tropical timber from sustainable sources.

In any of the above, the following are relevant:

- enhancing public relations, awareness and education;
- sharing information, knowledge and technology; and
- research and development.

Selection criteria: Fellowship applications will be assessed against the following selection criteria (in no priority order):

- consistency of the proposed activity with the Program's objective and priority areas;
- qualifications of the applicant to undertake the proposed fellowship activity;
- the potential of the skills and knowledge acquired or advanced under the fellowship activity to lead to wider applications and benefits nationally and internationally; and
- reasonableness of costs in relation to the proposed fellowship activity.

The maximum amount for a fellowship grant is US$10 000. Only nationals of ITTO member countries are eligible to apply. The next deadline for applications is **14 August 2009** for activities that will begin after 1 January 2010. Applications will be appraised in November 2009.

Further details and application forms (in English, French or Spanish) are available from Dr. Chisato Aoki, Fellowship Program, ITTO; Fax 81–45–223 1111; fellowship@itto.or.jp (see page 2 for ITTO's postal address) or go to www.itto.int.

BuT testing: Sample collection at Assin Fosu *Photo: S. Tekpetey*

TPI: This index measures the quality of the bamboo stands, encompassing the evaluation of anatomical properties, type of bamboo, extractive content, cellulose content and photochemical results of extractives. Other components of the index include the physical (basic density and moisture content), morphological and mechanical properties of interest.

SCI: This index captures the level of interest and awareness of the communities, their belief systems, and the land tenure issues surrounding bamboo resource use. Others factors include technical know-how, skilled labour and the availability of experts in the region of interest.

For all three indices, rankings are assigned in the range 1–5, where 1 or 2 = high, 3 or 4 = moderate, and 5 = low.

Integration module

The integration module synthesizes and analyzes interactions among the three BuT indices; it uses the assigned values to select the most appropriate management strategy for a given area. Strategy options include: product diversity and marketing (which would be indicated by a total score of 1–3); industrial processing (premium-value, medium-value, low-value and bulk processing), indicated by a score of 4–7; education and awareness creation, indicated by a score of 8–10; and ecotourism, the conservation of natural resources, and plantation management, indicated by a score of 11–15.

Rapid assessment of BuT in Assin Fosu

A preliminary rapid assessment of BuT was undertaken at Assin Fosu in southern Ghana (Figure 1). Although a proper bamboo inventory is yet to be undertaken in Ghana, *Bambusa vulgaris var. vulgaris* was identified as the main bamboo species in the area; it is available in the district on farmland and in forest reserves. Assin Fosu's bamboo resource AAi was assigned a value of 4 and, based on earlier technical work (Tekpetey *et al.* 2007) its TPI scored 3. Although the level of awareness about bamboo was generally low among the local people, the region has a bamboo factory with highly skilled staff; the SCI, therefore, received a score of 3. Overall, the BuT value (AAi +TPI+ SCI) was 10. This suggests that an appropriate management strategy for the area would be one that creates awareness and diversifies products.

Conclusion

BuT is a location-specific and time-bound decision-making tool for the sustainable utilization of bamboo resources. It can assist stakeholders in Ghana and other countries to deploy scarce financial resources in a bid to find economically and socially viable uses for their bamboo resources. Further collaboration among bamboo-growing countries and relevant governmental and non-governmental organizations is recommended to further develop BuT to ensure its wide and effective use.

Acknowledgments

Thanks are due to the ITTO Fellowship program for its assistance in funding the research and especially Dr Chisato Aoki. The International Centre for Bamboo and Rattan in Beijing, China also supported this work through an Open Key Cooperative Research Scholarship. The unflinching support of K. Frimpong-Mensah and Dr. N.A Darkwa is also highly appreciated.

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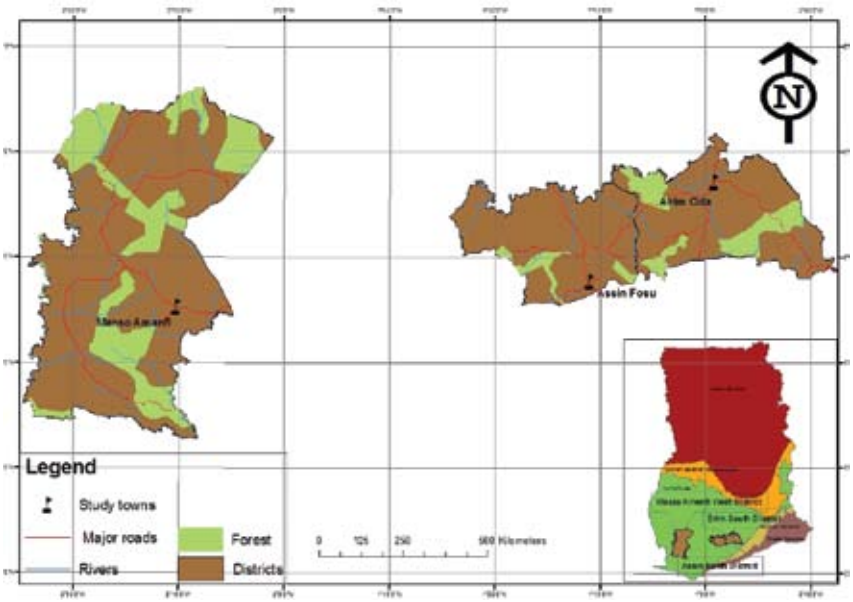
Study towns:

Figure 1. Location of three bamboo-growing areas in southern Ghana



Global economic slowdown hits tropical timber prices

By Lauren Flejzor

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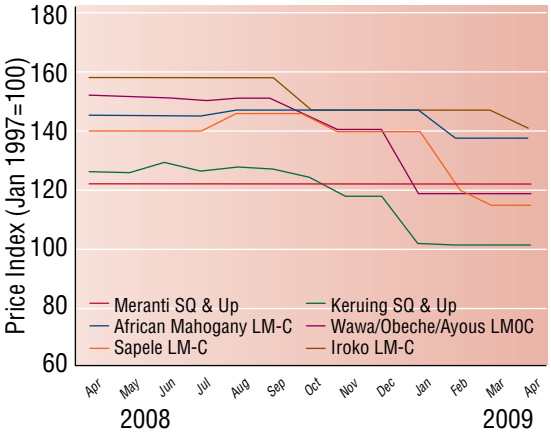
Due to favorable demand in the first three quarters of 2008, prices for tropical timber were relatively stable. However, after October 2008, prices for logs and plywood began falling slightly as the economic slowdown began to affect consumer purchasing. Towards the end of the first quarter of 2009, more consistent falling price trends were observed for logs and plywood due to waning demand in Japan, the US and UK, the economies hit hardest by the downturn. Nevertheless, as production was scaled back or supply became less available in producer countries, certain prices for particular species rose. Traders faced tough negotiations on price, with the trading environment becoming a buyer's market.

Africa less affected

The overall market situation in West and Central Africa was mixed in early 2009, as production and supply were relatively low, although there seemed enough supply in the near term to meet demand. In the UK, demand was down for key species such as meranti, sapele, keruing, and khaya (African mahogany). Prices for okoume logs were affected by low plywood consumption. Since the implementation of the Gabon log ban on four major species (douka/makore, moabi, ozigo and afo), prices for some species, notably moabi logs and lumber, rose at the end of January 2009 by about EUR30 per m^3, with the expectation that buyers would take advantage of log stocks being disposed by producers until the end of March. Log imports through Chinese ports were also falling, due to dwindling supply in Africa, causing prices for some species to rise in China.

Logs dip

Tropical log FOB prices, 2008-2009

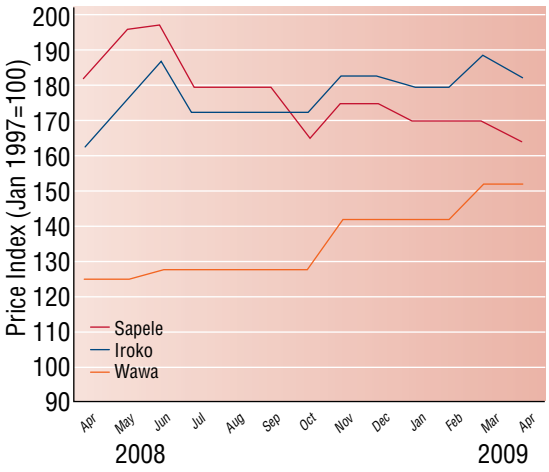


West African sawnwood prices, on the other hand, were not as affected by diminishing levels of demand, as production was low. It was expected that prices for sapele would increase in the coming months, since sapele stocks had been absorbed by buyers and production of the species was limited in Northern Congo and Central African Republic. Sipo was also likely to hold on to higher price levels.

Since prices had not been moving in Ghana during late 2008, the Timber Industry Development Division (TIDD), did not review the Guiding Selling Prices (GSP) of timber and wood precuts for the first quarter of 2009. Ghana was also facing

Sawnwood stable

West African FOB price trends, 2008-2009



price competition with intra-regional competitors, Gabon, Côte d'Ivoire and Cameroon. West Africa's trade with other key intra-regional partners, such as South Africa, was particularly low. A number of contracts negotiated in January 2009 or earlier were put on hold for later dates.

Mostly all purchases were slowing from African producer countries, with Malaysia hoping to benefit from the Democratic Republic of Congo's decision in January 2009 to cancel contracts of 156 logging deals in the country's rainforests. New contracts were expected to be issued for the over 9000 square kilometers of forests in the DRC.

Asia faces layoffs and reduced production

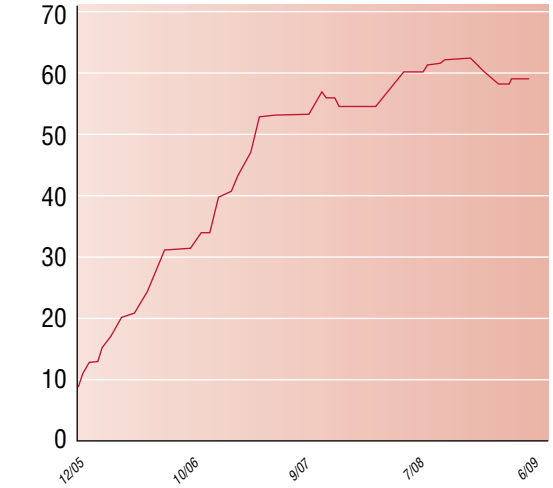
Timber earnings declined for Malaysian timber and timber products during 2008, although the value of overall commodity exports jumped 26.7% in 2008, mostly due to the rise in palm oil prices. As at end February 2009, Malaysian timber prices were low and traders were resisting further reductions. Malaysia was also feeling pressure on its international export markets, as the Malaysian ringgit was declining against the major currencies. Most timber operators in Malaysia were coping with financial losses, and it was expected that nearly 60,000 workers were likely to be affected by layoffs in the country.

The country was also facing a raw material shortage. To address this problem, the Malaysian government decided to reduce its export of natural rubber by 5%, which means that more rubber plantations can be replanted or converted to alternative projects. As a result of the decision, more rubberwood will be available and pressure on log prices is likely to subside during 2009. Prices for rubberwood furniture and furniture parts rose rapidly during 2006-2007 and maintained high levels during 2008, as the chart for rubberwood windsor chairs shows.

In Indonesia, prices were on the decline as sawmills in the country were not purchasing more logs. With demand low for Indonesian plywood and panel products, the country was experiencing massive unemployment, the hardest hit being community-based furniture manufacturers. With the

Rubberwood rise

Prices for rubberwood windsor chairs (USD/piece), 2006 – 2009

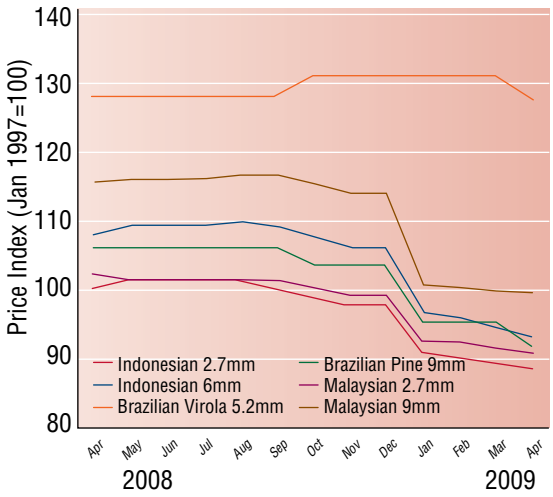


economy in crisis, it was reported that domestic prices of Indonesian timber were on the verge of collapse. Given the state of the timber trade and increasing layoffs, it was feared that more people would clear forests for agricultural purposes to generate income.

Overall demand for South East Asian plywood was low, particularly in Japan, where imports of plywood dropped 11% in year 2008, the lowest level of the country's plywood imports in 33 years. Prices for South East Asian plywood fell considerably in early 2009, due to changes in consumer purchasing, Japan's increasing reliance on domestic sources of raw materials and a weakening Japanese economy, together with reduction of demand in other key markets such as China. China was scaling back its production and manufacturing of plywood, reflecting lower offer prices for raw materials.

Plywood plummets

Tropical plywood FOB prices, 2008-2009



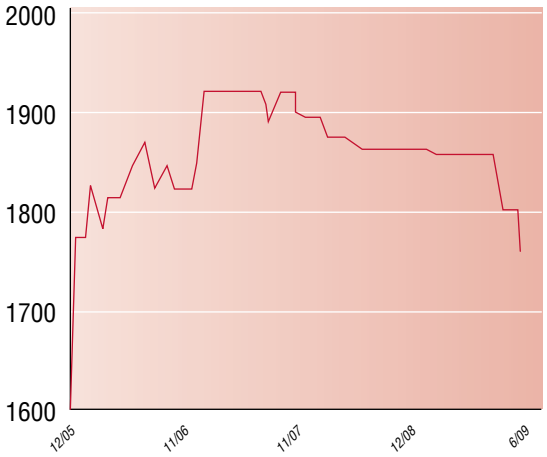
Brazil hard hit by slowdown

Exports were significantly lower in Latin America in 2008, as the region's major importers – the US, EU and parts of Asia – cut back orders for the region's wood products. In Peru, wood exports from January to December 2008 grew only 3% by value, with the main export destinations being Mexico, China and the US. Sawnwood was the largest exported item during the year, representing 44.7% of the sector's exports. As seen below, prices for Peruvian mahogany rose in the early part of 2006, steadied until late 2008, and fell substantially after the new year, following similar price trends for West African and South East Asian logs and plywood.

As in parts of South East Asia and Africa, layoffs were similarly affecting the Brazilian furniture industry. In 2008 the Brazilian state of Rio Grande do Sul saw furniture exports decline by 34.3% in value terms. As a result of declining sales, further layoffs may be necessary in the furniture sector. The value of all wood products exports (except pulp and paper) declined more than 15% in November 2008 and export value of all products except wood furniture fell in December 2008 from the corresponding period in 2007. Many experts in Brazil believed the outlook for exports would be bleak, due to waning demand for wood products as well as the depreciation of the US dollar against the Brazilian real.

Mahogany on hold

Prices for Peruvian mahogany (*Swietenia macrophylla*) – Grade 1 Common and Better, KD, US market, 2006-2009



Exchange rate uncertainty

Adding to the uncertainty in market conditions were exchange rate fluctuations. This was particularly affecting the UK market, with the dollar rising about 20% against the euro and nearly 40% against the British pound since August 2008. This has led to rising prices for forward purchases, making it more difficult for European buyers to make purchases from Asian producers, especially since the banking crisis in the UK has weakened market confidence. A few large exporters in Asia have been selling stock below replacement prices, although as mentioned above, most are not reducing prices further. Nevertheless, the lowering of the exchange rates in South East Asia, particularly Indonesia, has not encouraged more buyers of Indonesia's plywood. This trend was similarly seen in Brazil.

European buyers expected prices to eventually rise, but not within the next six months. Regardless, some popular species continued to be selling well in Europe, particularly African species such as iroko and framire.

Tropical and topical

Edited by Ken Sato

Plastic wood

A German company, Tecnaro, has found a way to create a bio-plastic from lignin, a natural compound essential to the strength to trees. Lignin, responsible for the gradual yellowing of newsprint, is also a waste product of paper production and is often burned as fuel. But Tecnaro has created a "liquid wood" that can be molded like plastic yet remains biodegradable. This "liquid plastic" (sold under the trade name Arboform) can contain as much as 50% lignin in addition to natural fiber from wood, flax, hemp or other plants as well as natural additives. Arboform is manufactured as small dark brown pellets which can be melted and molded using the same equipment for manufacturing conventional plastics, which allows products like television, computer and cell phone casings to be made from "wood".

With production reportedly increasing 10 percent per year (so far based only on wood from non-tropical forests), Arboform and related products represent a potentially new market for wood.

Forest officer: Sumatran tigers make illegal loggers pay in Indonesia *Photo: M.T. Wong*

Although Arboform is heavier, more brittle and expensive compared to conventional plastics, demand for the product has been encouraging, especially in countries with strong environmental consciousness. With production reportedly increasing 10 percent per year (so far based only on wood from non-tropical forests), Arboform and related products represent a potentially new market for wood.

Gabon's Ivindo iron mine on hold

It was recently reported in the New York Times that the pristine rain forest of Ivindo National Park in Gabon is threatened by an iron ore mining operation being established in the area. For years crude oil has been able to keep the people of Gabon economically secure, thereby allowing the country to maintain a significant part of its forests relatively untouched (10% of Gabon's land was set aside as a national park in 2002). However with oil running out, Gabon is in need of another source of money.

The iron ore mining project in the Ivindo area would require damming the Ivindo River and destroying a waterfall known as Kongou Falls in order to power the mine and its railway. Although work on the dam started last year and workers created a road through the previously untouched forest, the project is currently on hold. This is probably due to the falling price of iron, resulting in lower prospects for the project.

Vicious cycle for endangered tigers

An increase in Sumatran tigers attacking illegal loggers is leading to further decreases in the numbers of the already endangered species. The Associated Press reported in February that an endangered Sumatran tiger killed two illegal loggers sleeping near a pile of illegally harvested wood within a protected forest on Sumatra island, which is located 600 kilometers west of Jakarta.

According to the state conservation agency, about 40 people were killed by tigers in the area from 2000-2004. The Forestry Ministry stated that Sumatran tiger numbers have dwindled to 250 in the wild, down from 1000 in the 1970's. Poaching and the destruction of their forest habitat due to the development of palm oil and wood pulp plantations are major reasons for their diminishing population. According to a story from the AFP, another tiger attack in early March killed another two illegal loggers, making a total of eight people killed by tigers in a span of five weeks, leading villagers to trap and kill four of the endangered tigers in retaliation.

EU FLEGT initiative expands

The Vietnamese Ministry of Agriculture and Rural Development and the European Commission (EC) have agreed to establish a bilateral Technical Working Group on Forest Law Enforcement Governance and Trade (FLEGT). The aim of the working group is to jointly investigate options for combating illegal logging and related trade and to explore

the possibility of negotiating a FLEGT Voluntary Partnership Agreement (VPA). VPAs are legally binding bilateral pacts that emerged from the European Commission's 2003 Action Plan on FLEGT, designed to stop the trade of illegal timber in the EU market.

Vietnam is a major exporter of processed timber products to the EU and has recently been criticized for importing illegally harvested timber to supply its booming furniture sector. With legislative initiatives against the trade in illegal timber products being developed in the US, the EU and other consumer markets, the Vietnamese industry is seeking ways to maintain and expand its market position by guaranteeing the legality and sustainability of its timber products.

The EC completed negotiations for a FLEGT VPA with Ghana last year and just completed its second VPA in Africa, with an agreement signed with the Republic of Congo (Congo Brazzaville) in May. The Congo VPA establishes a system to ensure wood products exported to the EU contain no illegally harvested timber and are derived from managed forests that benefit local communities. The Republic of Congo exports about USD$330 million annually in timber and timber products, about half of which are purchased by EU countries. The EC is currently negotiating VPAs with Malaysia, Indonesia and Cameroon.

Tropical forests absorb more carbon than thought

Tropical rain forests are absorbing nearly five billion tons of carbon-dioxide released yearly into the atmosphere by burning fossil fuels and other sources. This includes a previously unknown carbon sink in Africa that is mopping up 1.2 billion tons of CO_2 each year, according to results from a 40-year study of African tropical forests.

The study concluded that the removal of nearly five billion tons of carbon dioxide from the atmosphere by intact tropical forests, based on realistic prices for a ton of carbon, should be valued at around $26 billion per year. Tropical forest trees are absorbing about 18 percent of the CO_2 added to the atmosphere each year from burning fossil fuels, substantially buffering the rate of climate change. However, the study notes that tree growth will not continue indefinitely even if tropical forests are preserved, so the size of this sink can't be relied on forever. The reason why tropical forests are absorbing more carbon than previously estimated is unclear. A leading suspect is the extra CO_2 in the atmosphere itself, which may be acting like a fertilizer.

Climate aid hot air?

The UK's Guardian newspaper recently published a report showing that a substantial amount of funding slated for developing countries from rich countries to help in climate change mitigation efforts has not yet been delivered. Although upwards of US$18 billion had been pledged for such purposes over the past seven years, less than $900 million has actually been released.

The long delays and the lack of action regarding the funding is a concern among diplomats and those involved in climate talks in the UN, who warn that any global agreement on climate change to succeed the Kyoto protocol is at risk if pledged funds aren't supplied by the countries involved.

The analysis found that the poorest countries have received the least help from the rich. The GEF administered Least Developed Countries fund has disbursed only $47m in seven years. Other findings include:

- Africa, the poorest continent, has received less than 12% of all the climate fund money spent in the last four years
- It can take poor countries more than three years to access money
- Most of the money promised for climate change comes out of official aid budgets, leaving less for health, education and poverty action.

Tropical forest trees are absorbing about 18 percent of the CO_2 added to the atmosphere each year from burning fossil fuels, substantially buffering the rate of climate change

EC carbon price slump

The International Centre for Trade and Sustainable Development (ICTSD) recently reported that the European Commission (EC) will not prop up Europe's carbon market, despite continued plummeting prices. New lows for emissions permit prices are primarily linked to the global financial crisis. The contraction of European industrial production - and associated carbon dioxide reductions - resulting from the economic downturn and speculation that carbon levels will remain low over the next year has triggered a flood of emissions permits on the market, which has caused prices to drop sharply.

The abundance of supply and reduction in European demand for carbon permits has pushed prices to record lows. In February prices dipped to €8.20/ton, down more than 70 percent from mid-2008 when prices reached €30. The sharp drop in prices led to calls for intervention by the EU to prop up prices or set a price floor. These were summarily rejected by the EC which favors allowing the market to decide emissions permit prices.

The failing European carbon market has also given rise to concerns over the impact of falling prices on clean development mechanism (CDM) projects, including forestry projects (of which there were few even when prices were high), and other carbon offset initiatives. Low prices will discourage developers of new projects, reducing the prospects for such projects to contribute to emissions reductions/mitigation and clean technology transfer in the developing world. The problems in the EU market have also caused other countries like Australia to review plans to establish carbon markets.

Letters

Dear Sir,

I am happy to inform you that I regularly receive the Tropical Forest Update. I enjoyed your editorial "*Strengthening diversity*" in TFU 18(2). This issue summarized the revision of ITTO's programs on biodiversity. The guidelines aiming to promote the overall improvement of the management of natural tropical forest is of importance for biodiversity conservation.

The article on sustainable bamboo utilization in Thailand by Florence P. Soriano is important from the point of view of India, since the tribal communities of Maharashtra, Gujarat and Karnataka are dependent on bamboos for their livelihood. They need training for utilizing bamboos for value addition. There is a scheme of the government of India for imparting training to tribal communities through a non-governmental organization. This article will be of immense use for this work.

The topical and tropical section was also informative, particularly the piece on uncontacted tribes in Latin America. I would like to note that in the Andaman Islands there are similar tribes that survived the Indian Ocean tsunami a few years ago.

Yours faithfully,
Suresh Deshpande
Retired Forest Officer
Maharashtra, India

Dear Editor,

I own and operate a newly established teak trading company out of Singapore with a focus on Latin American teak. I have over 13 years experience in the teak business across Asia, Africa and Latin America and over 750,000 cubic meters of teak would have flowed commercially through me in this time period.

I have gone through the very interesting article on teak pricing written by Mr Raymond Keogh (TFU 18(2)). I am forwarding my views to you as precursor to generating a meaningful debate to see if transparent pricing is indeed feasible for teak logs. My comments are:

1) Pricing of teak logs is driven by the following factors. Length, girth, straightness, overall formation including taper, weight, thickness of bark, sap content, heartwood content, color of the heartwood, grain patterns of the heartwood including gap between rings, hardness of the heartwood and the defects profile. I may have missed out a couple more but this is largely it. Apart from length, girth and weight the rest are largely a matter of judgment.

2) Unlike other commodities like sugar, rice etc where it is possible for third party inspection services to assess quality, the same is not possible in teak. Teak quality assessment, and by extension its pricing, is done by experienced people who typically are from the trade and not inspection services. There also is a divergence of views amongst experts which most times is driven by the state the market is currently in and the commercial interests of the experts.

3) I would suggest that we work on a price range using one source of origin in Latin America and one in Africa (eg Panama and Ghana). We should define the price on a standard 2.2 meter log with pricing driven by diameter ranges and grade as indicated in the paper referred to above. The market is more attuned to an origin price and it will be easier to figure out for most parties. This might be better than trying to have prices purely based on physical parameters.

It is, relatively speaking, easier to set up criteria for well managed plantations, which essentially are in Latin America, and which in my opinion are the future of the teak business. Today Latin America comprises no more than 10-15 percent of total teak usage but going forward this should take off.

The Latin American segment is also where there are largely financial investors who are crunching their numbers unlike Africa or Asia where we see more government organizations who largely are 'takers' of market prices. A pricing solution is likely to enhance investments in the teak plantations sector.

The paper by Keogh refers to grading of natural teak in Myanmar. Teak grading in Myanmar is not as rigorously applied using fixed grading rules as it might appear. The grading rules are approximate and depending on the pressure on the MTE graders from the government the grading changes dramatically. So you would find a few months of very liberal grading for SG4 and a few months of very tight grading on SG4. Within the grade itself the price variability is tremendous, $300-$500/cubic meter price variation is normal. The judgment of value in Myanmar teak is really complex.

Best regards,
Rahul Ahuja
Renewable Woods Pte Ltd
 # 02-01, Keypoint, 371 Beach Road, Singapore – 199597
rahul@renewablewoods.com

Letters to the editor are welcome and can be sent to the contact address/email provided on page 2.
Letters must contain full contact details and may be edited for clarity/length.

Urban Nature Forum 2009

Edmonton, Alberta, Canada

12-13 June 2009

Cost: see weblink below

Natural areas within the urban setting are managed by local authorities, and other natural areas and conservation initiatives run by conservation agencies need the support of local authorities in order to succeed in the urban setting. Virtually all aspects of urban governance impact biodiversity directly or indirectly. These areas include land use planning, municipal service provision (for example waste treatment and water management), and even procurement (by purchasing biodiversity-friendly and sustainable products and services, producers and service providers are encouraged to be sustainable and environmentally conscious).

The Urban Nature Forum, unparalleled in its scope and international representation, is an engaging platform for local governments, communities and their partners to meet, share and exchange best practice, science and new directions in the field of urban biodiversity. The forum will be attended by representatives of local and regional governments, scientists, and representatives of various local and international conservation organizations.

Themes that will be discussed include:

- Local action in cities around the globe
- Working together: cities, province and federal government agencies
- Biodiversity and it's link with mitigation of and adaptation to climate change at the local level
- The role of local government in securing of protected areas and stewardship of natural areas
- Ecosystem services: How cities can measure the economic advantages of biodiversity

For more information and to register, visit www.iclei.org/urban-nature2009 .

ProForest Summer Training Programme 2009

Oxford, United Kingdom

13-17 July 2009

Cost: Varies depending on courses selected

The Proforest Summer Training Programme, now in its eighth year, is a unique opportunity for anyone involved in the sustainable management or certification of forests, implementing responsible purchasing programs for timber, responsible sourcing and production of agricultural commodities or biofuels. Courses cover current issues and are designed to bring together key players from around the world.

Participants can design their own program choosing one to four courses from the following (each of 1-3 days duration):

- Forestry: understanding certification, legality and governance initiatives;
- Responsible sourcing and production of agricultural commodities;
- Responsible purchasing and supply chain management of forest products;
- Introduction to the High Conservation Value (HCV) concept;
- Identifying and managing high conservation values (HCVs) within natural resource - production systems;
- Forests and climate change;
- Update on responsible biofuels; and
- Understanding social requirements within sustainable certification.

The training courses involve presentations, group work and discussions to maximize opportunities for shared learning. Priority will be given to participants coming for the full week.

For more information and to register, visit http://www.proforest.net/summer-training.

Managing Natural Resource Conflict: Concepts and Practice

Bangkok, Thailand

15-25 September 2009

Cost: US$2000

Conflict is an inherent part of natural resource management. Local communities, governments, companies, and NGOs often have very different views as to how resources should be managed and utilized and so conflict in its many forms is therefore often inevitable and unavoidable. Forestry and natural resource professionals are increasingly called upon to mediate among various stakeholders in these challenging situations.

This training course will provide participants with an understanding of the basic principles, skills, and techniques used in analyzing and mediating conflict. Participants will increase their knowledge and skills in analyzing conflict, assessing management options, and developing strategies to manage conflict. They will practice a variety of conflict management techniques in order to negotiate and build agreements, and learn how to plan and support collaborative conflict management approaches. Importantly participants will also learn to take a proactive role in anticipating and addressing conflict in its early phases.

Contact: Leela Wuttikraibundit, Capacity Building Services, Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC), P.O. Box 1111, Kasetsart University, Bangkok 10903, Thailand; Tel 66-2-940-5700 ext. 1234; Fax 66-2-561-4880, 562-0960; leela@recoftc.org or contact@recoftc.org; www.recoftc.org

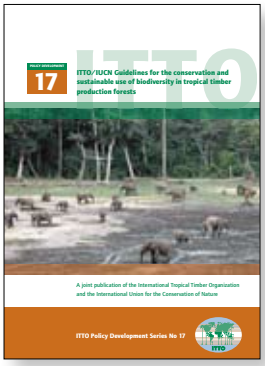
Courses/fora are in English unless otherwise stated. By featuring these courses ITTO doesn't necessarily endorse them. Potential applicants are advised to obtain further information about the courses of interest and the institutions offering them.

Recent editions

Edited by Ken Sato

ITTO/IUCN. 2009.* ITTO/IUCN guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests. *ITTO Policy Development Series 17. Yokohama, Japan. ISBN: 4-902045-41-9

Available from: *ITTO Secretariat (See page 2 for contact details); online under Publications at www.itto.or.jp*

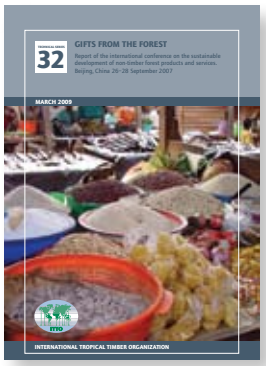


This joint publication of ITTO and the International Union for the Conservation of Nature, is a complete revision and updating of ITTO's original Biodiversity Guidelines published in 1993. It sets out the specific actions that policy-makers, forest managers and other stakeholders should take to improve biodiversity conservation in tropical production forests.

Available in English, French and Spanish

ITTO .2009.* Gifts from the forest. *ITTO Technical Series 32. Yokohama, Japan. ISBN: 4-902045-45-1

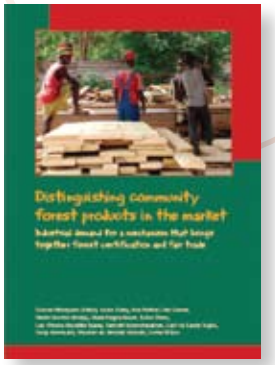
Available from: *ITTO Secretariat (See page 2 for contact details); online under Publications at www.itto.or.jp*



This report summarizes an international conference on NTFPs in Beijing, China convened by ITTO, the Chinese Academy of Forestry, the International Network for Bamboo and Rattan, the International Centre for Bamboo and Rattan (ICBR), and the Food and Agriculture Organization of the United Nations. The conference aimed to promote the development of NTFPs and forest services that can improve the economic attractiveness of maintaining the forest resource base. It found that more value-adding at the local level could provide forest-based communities with significant economic benefits. It also found that the lack of clear resource tenure, access and rights inhibits the development of small-scale and community-based forest enterprises, which could be important actors in NTFP value-adding and marketing.

Macqueen, D. (Editor), Dufey, A., Cota Gomes, A.P., Sanchez Hidalgo, N., Regina Nouer, M., Pasos, R., Argüelles Suárez, L.A., Subendranathan, V., García Trujillo, Z.H., Vermeulen, S., Mauricio de Almeida Voivodic, Wilson, E. 2009.* Distinguishing community forest products in the market: Industrial demand for a mechanism that brings together forest certification and fair trade. *International Institute for Environment and Development, London, UK. ISBN: 978-1-84369-684-1

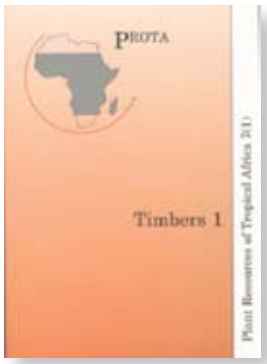
Available from: *Earthprint, P.O.Box 119, Stevenage, Hertfordshire, SG1 4TP England, UK; customerservices@earthprint.com, http://www.earthprint.com/, http://www.iied.org/pubs/display.php?o=13547IIED; US$30.00 for printed edition, free to download*



This report investigates the need for a mechanism that links forest certification and fair trade in the timber market. It contains a study based on surveys of timber buyers from 21 countries with more detailed value chain analysis case studies for four of these countries. The report examines the many issues raised by the changing relationships between the state, the private sector and local stakeholders in forest management.

PROTA. 2008.* Timbers 1: Plant resources of Tropical Africa (PROTA 7(1)). *PROTA, Wageningen, Netherlands. ISBN: 978-90-5782-210-0/978-3-8236-1542-2(book and CD-Rom); 978-90-5782-209-4/978-3-8236-1541-5 (book only)

Available from: *ITTO Secretariat (See page 2 for contact details); online under Publications at www.itto.or.jp*



This publication and CD database is an output of ITTO project PD 264/04 to describe the properties of timber trees of Tropical Africa. PROTA 7(1) describes 511 'primary use' timber species belonging to 25 botanical families. The remaining 'primary use' timbers will be included in a follow up volume (PROTA 7(2)).

PROTA (Plant Resources of Tropical Africa) is an international programme focused on providing information on the more than 7,000 plants of Tropical Africa useful to man. Its purpose is to make easily available the wealth of dispersed knowledge on these plant resources for education, extension, research and industry through internet databases, books, CD-ROMs, etc. More information on www.prota.org; a searchable database ('Protabase') is available at www.database.prota.org/search.htm.

Available in: English and French; Bilingual CD-Rom

Meridian Institute. 2009. *Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report.* Prepared for the Government of Norway, by Arild Angelsen, Sandra Brown, Cyril Loisel, Leo Peskett, Charlotte Streck, and Daniel Zarin.

Available at: *http://www.REDD-OAR.org.*

Climate change mitigation will be neither cheap nor easy. But the costs and complexities of the mitigation challenge pale in comparison with the risks and costs that are likely to accompany failure to take decisive action. Because deforestation accounts for about 18 percent of global greenhouse gas emissions - larger than the entire global transportation sector - reducing emissions from deforestation and forest degradation (REDD) must be part of any Copenhagen agreement of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). Without REDD, the widely endorsed goal of climate stabilization at a maximum 2°C temperature increase will not be reached.

To capture the mitigation potential of the forest sector, this recently published Options Assessment Report by the Meridian Institute for the Government of Norway suggests a flexible, three phase approach to policy measures and positive incentives in order to accommodate (i) the diverse capabilities and circumstances of REDD countries; (ii) an expanded scope of REDD to include conservation, sustainable management of forests, and enhancement of forest carbon stocks; and (iii) the near-term constraints of the current global financial crisis.

Phase 1, already initiated in many countries, includes the development of national REDD strategies, encompassing national dialogue, institutional strengthening, and demonstration activities. Phase 2 involves a fund-based approach to support the implementation of the policies and measures proposed in those national REDD strategies, administered on the basis of pre-agreed performance measures. To make substantial progress toward a 2020 goal of halving global deforestation, Phase 2, starting in 2010, should include internationally binding financial commitments from industrialized countries at a suggested level of USD 2 billion per year, increasing to USD 10 billion per year in 2014. Phase 3 would bring in elements of a future regime with a compliance instrument based on quantified greenhouse gas emission reductions and removal enhancements.

The transition from Phase 2 to Phase 3 requires attention to the setting of reference levels and the monitoring, reporting, and verification (MRV) of emissions and removals. National historic deforestation is the best near term predictor of deforestation and could be used as a point of departure for reference level setting, but diverse national circumstances argue for consideration of additional variables, including forest cover and income level.

Reference level setting should also (i) reflect adherence to a principle of reducing forest sector emissions globally, and (ii) follow a process that is compatible with future incorporation into a broader agriculture, forests, and other land uses (AFOLU) sectoral reporting framework. MRV should also follow relevant UNFCCC precedents and Intergovernmental Panel on Climate Change (IPCC) methodologies.

Furthermore, REDD policies and their implementation should promote the effective participation of indigenous peoples and local communities both internationally and nationally. The report examines a range of approaches both within and outside of the UNFCCC process, including procedural mechanisms, careful design of financial and MRV systems, and clarification of rights to land and natural resources.

A sustainable outcome for REDD will require a global partnership, with REDD country leadership needed for successful implementation, including participation of indigenous peoples and local communities, and industrialized country leadership provided through deep domestic emission reductions and support for REDD actions.

Available in English, French, Spanish and Portuguese

Secretariat notices

Proposals sought for ITTO Thematic Programs

ITTO producer and developing consumer member countries are invited to submit proposals for funding consideration under the ITTO Thematic Programmes on Reducing Deforestation and Forest Degradation and Enhancing Environmental Services in Tropical Forests (REDDES) and Tropical Forest Law Enforcement, Governance and Trade (TFLET). The Thematic Programme Advisory Committees (TPACs) have recently finalized the preparation of the Thematic Programme Documents (TPDs) for both Programs and these are available on www.itto.int (currently restricted to members only).

The section on Activities in the TPDs provides an indicative non-exhaustive list of activities that can be supported by the Programs. Details of activities to be given priority in this call for proposals are available on www.itto.int.

Interested member countries are invited to submit proposals to the ITTO Secretariat as soon as possible but not later than 30 June 2009 through their official ITTO contact points. Proposals are to be prepared adhering to the guidelines and format provided in the ITTO Manual for Project Formulation (2008) which is supported by ITTO Pro Tool software (both available through www.itto.int).

Obituary

David W.K. Boulter, Chairman of the International Tropical Timber Council in 1992, passed away at his home in Ottawa, Canada on March 31 2009 at the age of 66 after a brief battle with cancer. David retired a few years ago from a long career with the Canadian Forest Service during which he took several breaks to carry out international assignments for ITTO and other international organizations. He is fondly remembered by his friends at ITTO for his good humour during his Chairmanship of the Council and for his contributions to the Organization during its formative years in the early-mid 1990s. David is survived by his wife Diana (to whom any expressions of condolence can be sent on d_boulter@hotmail.com) and children James and Kelly.

Meetings

1–12 June 2009
30th Sessions of the UNFCCC Subsidiary Bodies
The Sixth session of the Ad Hoc Working Group (AWG) on Long-Term Cooperative Action and the Eigth session of the AWG on Further Commitments for Annex I Parties under the Kyoto Protocol.
Bonn, Germany
Contact: UNFCCC Secretariat; Tel: 49-228-815-1000; Fax: 49-228-815-1999; www.unfccc.int/meetings/unfccc_calendar/items/2655.php?year=2009

5 June 2009
World Environment Day: Your Planet Needs You
Mexico City, Mexico
Contact: Ms. Lucita Jasmin; Division of Communications and Public Information; United Nations Environment Programme (UNEP); Tel: 254-20-7623401 / 7623128 Fax: 254-20-7623692 / 7623927 worldenvironmentday@unep.org

18–20 June 2009
International Wildfire Management Conference
Sydney, Australia
Contact: IWMC09 Conference Managers; Postal: GPO Box 128, Sydney NSW 2001 Australia; Courier: Level 10, 51 Druitt Street, Sydney NSW, 2001 Australia; Tel: 61 2 9265 0700; Fax: 61 2 9267 5443; wildfiremanagement09@tourhosts.com.au; www.wildfiremanagement09.com

30 June–2 July 2009
Regional Meeting on Ramin under CITES
Bogor, Indonesia
Contact: ITTO Secretariat; Tel: 81-45-223-1110; Fax: 81-45-223-1111; itto@itto.or.jp;www.itto.int

30 June–2 July 2009
Promotion of Intra-African Trade in Timber and Timber Products
Accra, Ghana
Contact: ITTO Secretariat; Tel: 81-45-223-1110; Fax: 81-45-223-1111; itto@itto.or.jp;www.itto.int

6–10 July 2009
58th Meeting of the CITES Standing Committee
Geneva, Switzerland
Contact: CITES Secretariat; Tel: 41-(0)22-917-8139/40; Fax: 41-(0)22-797-3417; info@cites.org; www.cites.org/

10 July 2009
Children's Environmental Education Conference on Tropical Forests
Yokohama, Japan
Contact: ITTO Secretariat, Kanako Sakaguchi, Management Services; Tel: 81-45-223-1110; Fax: 81-45-223-1111; sakaguchi@itto.or.jp; www.itto.int

13–16 July 2009
Latin America Regional Forum on Promoting Wood-Based Bioenergy Using Wood Residues and Wastes
Manaus, Amazonas, Brazil
Contact: ITTO Secretariat, Dr. Tetra Yanuariadi, ITTO Forest Industry Division; Tel: 81-45-223-1110; Fax: 81-45-223-1111; tetra@itto.or.jp; www.itto.int

3–5 August 2009
7th Pacific Regional Wood Anatomy Meeting 2009
Kuala Lumpur, Malaysia
Contact: Dr. H'ng Paik San, Faculty of Forestry, University Putra Malaysia, 43400 Serdang, Selangor Darul Ehsan, Malaysia; Tel: 603-8946-7189; Fax: 603-8943-2514; prwac2009@gmail.com or prwac@forr.upm.edu.my; www.prwac2009.com/

11–14 August 2009
7th Latin American Congress on Forest Legislation
Curitiba, Paraná, Brazil
Contact: www.direitoflorestalambiental.com.br

17–20 August 2009
IUFRO Division 4.01 Conference
Meeting Multiple demands for forest information: new technologies in forest data gathering
Mount Gambier, South Australia
Contact: Dr Jim O'Hehir, Executive General Manager, Planning and Development, Forestry SA, Jubilee Highway East, PO Box 162, Mount Gambier,SA 5290, Australia; Tel: 61 8 8724 2721; Fax: 61 8 8724 2871; o'hehir.jim@forestrysa.sa.gov.au; www.alloccasionsgroup.com/IUFRO

23–29 August 2009
2nd World Congress on Agroforestry
Nairobi, Kenya
Contact: Dennis Garrity, World Agroforestry Centre; Tel: 254 20 722 4000; Fax: 254 20 722 4001; wca2009@cgiar.org; www.worldagroforestry.org/wca2009/

23–27 August 2009
19th Conference of the Society for Ecological Restoration International
SERI 2009 World Conference on Ecological Restoration: Making Change in a Changing World
Perth, Western Australia
Contact: seri2009@bgpa.wa.gov.au

3 September 2009
European Forest Institute 2009 Annual Conference
Dublin, Ireland
Contact: Anu Ruusila, EFI; anu.ruusila@efi.int

4–5 September 2009
Forest Ecosystem Management in the 21st Century (seminar in connection with the EFI annual conference)
Dublin, Ireland
Contact: John Gilliland; john@ifbsolutions.com

28 September–9 October 2009
AWG-KP 9 and AWG-LCA 7
Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA)
Thailand, Bangkok
Contact: UNFCCC; secretariat@unfccc.int

18–25 October 2009
13th World Forestry Congress
Argentina, Buenos Aires
Contact: Olman Serrano, WFC-XIII@fao.org; or Leopoldo Montes, info@wfc2009.org; www.wfc2009.org

21–23 October 2009
ASEAN Conference on Biodiversity 2009
Singapore
Contact: ACB2009 Secretariat, ASEAN Centre for Biodiversity (ACB), Los Baños, Laguna, Philippines; ACB2009@aseanbiodiversity.org

28–30 October 2009
8th Biennial Residue-to-Revenue Residual Wood Conference
Vancouver, Canada
Contact: Christina Ferreira, Conference Manager; Tel: 1-250-469-1958; ctferreira@shaw.ca; www.forestnet.com/rwc/index.htm

29–30 October 2009
8th International Machinery and Timber Products Show and 9th Plywood and Tropical Timber International Congress
Belém, Brazil
Contact: Congress organizer; Tel: 55 (11) 3722 3344; wrsp@wrsaopaulo.com.br; www.wrsaopaulo.com.br/; www.feiradebelem.com.br/

9–14 November 2009
45th Sessions of the International Tropical Timber Council and Associated Committees
Yokohama, Japan
Contact: ITTO Secretariat; Tel: 81-45-223-1110; Fax: 81-45-223-1111; itto@itto.or.jp;www.itto.int

30 November–11 December 2009
15th Conference of the Parties to the UNFCCC and the 5th Meeting of the Parties to the Kyoto Protocol
Copenhagen, Denmark
Contact: UNFCCC Secretariat; Tel: 49 228 815 1000; Fax: 49 228 815 1999; secretariat@unfccc.int; http://unfccc.int/meetings/unfccc_calendar/items/2655.php?year=2009

February 2010 (dates TBC)
15th Meeting of the Conference of the Parties to CITES
Doha, Qatar (venue TBC)
Contact: info@cites.org; www.cites.org/

23–27 August 2010
8th Flora Malesiana Symposium
Singapore
Contact: Singapore Botanic Gardens, 1 Cluny Road, Singapore 259569; Fax: 65 64674832; Floramalesiana2010@nparks.gov.sg; www.sbg.org.sg/fm8

23–28 August 2010
23rd International Union of Forest Research Organizations (IUFRO) World Congress *"Forests for the Future: Sustaining Society and the Environment"*
Seoul, Republic of Korea
Contact: 2010 IUFRO Congress Organizing Committee, Korea Forest Research Institute, 57 Hoegi-ro, Dongdaemun-gu, Seoul 130-712, Korea; Tel: 82 2 961 2591; Fax: 82 2 961 2599; iufrococ@forest.go.kr; www.iufro2010.com; www.iufro.org

Leslie was a lead author of the 1990 ITTO Sarawak Mission report, which was produced at a time when Sarawak was the centre of worldwide attention because of its destructive timber industry and the plight of the Penan forest people. The Mission report became a seminal work in the development of both ITTO and Sarawak's forest sector and helped diffuse tensions there. The University of Melbourne conferred a Doctor of Forest Science degree on Leslie in 1994 in recognition of his work in international forestry.

Leslie was a sceptic who delighted in an argument. In his speeches he often presented the conventional wisdom on a topic before expertly torpedoing the assumptions on which it was founded. He took delight in exposing flaws and gaps with the broad brush of a sceptical pragmatist, often supported by calculations made on the back of an envelope. He once wrote an essay titled 'Stupidity almost always wins', but he balanced his cynicism with humour and the demeanour of a real gentleman. He certainly had a strong pessimistic streak. In an article published in the *TFU* in 2006 he wrote:

"The only point about continuing to talk about SFM is to find a way around the conundrum that everybody says they want SFM but nobody wants to pay for it. If there is no answer, further talk won't find one. But talk serves a useful purpose for some: it creates the illusion that something is being done. Hence, in a world where illusion so often counts for more than reality, the combination of talk and inaction seems set to have a guaranteed future."

Nevertheless, when it came to personal interactions he was an optimist, and he had a positive influence on many lives. He had a gift of engaging the newly encountered, whether young or old and no matter their ethnic background or education, by joking about the ills of an organization or economy on an impersonal level. He could also point out the need to rethink ideas in a way that neither threatened nor embarrassed their proponents, and he encouraged young foresters to lift their aspirations, as many now in senior positions can attest. He was a gentleman in every respect; discourses were always lubricated with numerous cups of tea. Whatever the topic or concern, one left a discussion with him with a feeling that here was a person who listened, probed and cared, as well as counselled. He didn't suffer from false modesty. In 2005, at the age of 84 (and still working), he said: "I sometimes wonder if what I've got up here"—tapping his head—"is any good any more. Then I think, 'it's still better than most!'". He was right.

He is survived by his wife, Jean, two daughters and five grandchildren.

Alf Leslie's family and the University of Melbourne's Department of Forest and Ecosystem Science are establishing a memorial grove of trees at the University's Creswick campus. To make a donation go to www.itto.int and follow the links.

This obituary was put together by Ian Ferguson, Steve Johnson and Alastair Sarre with the assistance of many others. Variations have appeared in the International Forestry Review, The Melbourne Age, *and other publications.*

Tribute by Katsuhiro Kotari

I have known and been impressed by Mr Leslie throughout his distinguished international career and we also had the opportunity to work together over forty days in the ITTO Sarawak Mission between 1989 and 1990. I was much impressed by the depth of his knowledge of forestry issues. Also as the leader of the ITTO Fiji Mission in 2004, I remember Mr Leslie's enthusiasm as he provided valuable advice to the officials in Fiji for the future development of forestry in that country. During the busy schedule it seemed as though he was not in the best of his health, even going to the local hospital on occasion. I truly respected Mr Leslie for putting his utmost effort towards carrying out the mission.

Mr Leslie had told me that during World War II he frequently boarded the fighter planes in Port Moresby for the air raid of Rabaul. I had told him that I also served in the Japanese Navy as the head of the fort/battery of Rabaul. I recall how Mr Leslie and I had promised each other that when we retired from forestry we should reminisce about our days in Papua New Guinea. Now that it's not possible, I am filled with regret.

I would like to pray for the soul of Alfred John Leslie and also express my sincere regrets to his family whom I did not have the pleasure of meeting. I pray for their health and future happiness.

Katsuhiro Kotari (pictured above) is a distinguished Japanese forester with a longstanding commitment to ITTO's objectives. Both men appreciated the irony of their collaborative efforts for ITTO over the years, given that they were both in or around Papua New Guinea serving their countries during World War II, when in all likelihood they had been shooting at each other.

Passing of a forester

Alf Leslie, friend of ITTO and eminent forester, passed away earlier this year

Alfred John (Alf) Leslie, who died in January 2009 aged 87, was one of the forestry profession's most original thinkers. Born in Melbourne, Australia, in 1921, he studied forestry at the School of Forestry at Creswick; his iconoclastic views of forestry were keenly sought, even towards the end of his life, both at home and internationally.

Leslie had early field-forestry postings in regional Australia and later held senior academic positions at the universities of Melbourne and Canterbury (New Zealand). In the 1960s and 70s, however, his interests and career diverged towards the tropics and developing countries. He became a protégé of Jack Westoby, who was then a leading advocate of what became known as sustainable development; the two of them were colleagues at the Food and Agriculture Organization of the United Nations and worked together on forestry projects in many developing countries. Leslie later compiled *The Purpose of Forests*, a collection of Westoby's essays that became a classic, loved by foresters and environmentalists alike for the elegant way in which it challenged conventional thinking about forest-based development.

Leslie subscribed to Westoby's view that "forestry is concerned not with trees, but with how trees can serve people". He believed that, especially in the tropics, forests had to serve an economic purpose if they were to survive. He did not, however, favour intensive logging. Many tropical forests contain, at relatively low densities, timbers (such as teak and mahogany) that have such exceptional durability and decorative qualities that the demand for them is almost inelastic, meaning that consumers will always pay very high prices for them. The trick in tropical countries, according to Leslie, was to capture the value of those timbers closer to the forest so that local people could derive maximum benefit from them. He advocated what amounted to industrial espionage to determine who along the production chain was extracting most of the value of the timber—it certainly wasn't tropical forest owners and dwellers—and to raise the price paid by them. A focus on what he called 'diamond' timbers using intelligent marketing and environmentally sensitive extraction techniques such as helicopter logging would ensure that forests provided their owners and users with economic rewards at the same time as retaining virtually all their biodiversity and other environmental qualities.

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Although the 'diamond' approach has never really been implemented in the tropics, Leslie's persistent and persuasive advocacy helped convince many international policymakers and environmentalists of the need for forests to pay their way. This view is reflected in ongoing negotiations over a new global climate-change agreement that would encourage payments to reduce deforestation and forest degradation and therefore cut down on green-house gas emissions. The diamond approach would be consistent with the need to conserve carbon in these forests; it might yet have a role to play in making carbon conservation forests socially and economically viable.

Leslie had another, far-reaching influence on international forest policy. He was one of a handful of individuals who, in the 1970s and early 1980s, fought for the creation of ITTO, a United Nations-based institution he believed was essential if the tropical timber sector was to play its proper role in development. He played an essential role in assisting ITTO's first Executive Director, Dr B.C.Y. Freezailah, establish the groundwork for the Organization's work following its establishment in 1986. He continued to assist the Organization in many key initiatives at the policy and field level over the years. He was never afraid to express ideas or opinions that some considered politically incorrect but which were hard to dispute due to his always cogent supporting arguments. According to ITTO's second Executive Director, Dr Manoel Sobral, "among those few people who can be considered the founding fathers of ITTO, Alf no doubt was the one [who made] the greatest intellectual contribution".

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