SFM TROPICS

STATUS OF TROPICAL FOREST MANAGEMENT 2005

SUMMARY REPORT

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

A special edition of the *Tropical Forest Update* 2006/1

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The International Tropical Timber Organization (ITTO) is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. Its 59 members represent about 80% of the world's tropical forests and 90% of the global tropical timber trade.

Cover photos

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This is a summary of *Status of Tropical Forest Management 2005*, a report by ITTO. The core team in the compilation and writing of the main report comprised Jürgen Blaser and Duncan Poore from consumer countries and Cherukat Chandrasekharan and Sofia Hirakuri from producer countries. Alastair Sarre, Steven Johnson and Hana Rubin were responsible for overall coordination and editing. Acknowledgements can be found in the full report, which is available from:

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ITTO welcomes comments on this summary and the full report, which can be made at the ITTO website (www.itto.or.jp). Updates of the information presented in the report, and other relevant materials, will also be posted as they become available.

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ACRONYMS

C&I	Criteria and indicators
CAR	Central African Republic
DRC	Democratic Republic of Congo
FAO	Food and Agriculture Organization of the United Nations
FMU	Forest management unit
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
IUCN	World Conservation Union
NGO	Non-governmental organization
NWFP	Non-wood forest product
PFE	Permanent forest estate
PNG	Papua New Guinea
SFM	Sustainable forest management
UNEP-WCMC	United Nations Environment Programme-World Conservation Monitoring Centre

FOREWORD

Is forest management improving in the tropics? This report sets out to answer that question.

The fate of the tropical forests has been on the global agenda since at least the 1970s. ITTO itself was created in the early 1980s partly out of a desire to assist tropical countries in their efforts to improve the management of their timber-producing tropical forests. An early survey by ITTO (in 1988) found that a miniscule amount of such forest was being managed in accordance with good forest practice; the remainder was either being 'mined' for timber or had not yet been reached by the tractors and chainsaws. Some activists, particularly in developed countries outside the tropics, called for bans on tropical timber imports.

At the same time, many tropical countries were undergoing profound political, economic, social and cultural changes, and restricting the tropical timber trade was often neither possible nor desirable. Forest-based industries supplied many tropical countries with much-needed foreign exchange and local employment, and also assisted the development of agriculture by providing access to previously inaccessible land. This process has arguably taken place in almost all now-developed countries, and tropical countries were thus pursuing a tried-and-true development model.

ITTO's approach has been to urge countries to undertake land-use planning, in which land is assigned as 'permanent forest estate' for the sustainable production of timber and other forest goods and services. On this land, ITTO has encouraged countries to adopt sustainable forest management, whereby the inherent values of the forest are maintained (or at least not unduly reduced) while revenues are earned, people employed and communities sustained by the production of timber and other forest products and services.

It hasn't always worked. Some countries have already lost a significant part of their natural forest heritage and now have relatively little forest and large areas of degraded, unstable and unproductive land. A key task of the forestry sectors in such countries is to restore forest cover where possible and appropriate. But others still have vast natural forests and are better placed to implement sustainable forest management on a large scale.

This report provides a comprehensive analysis of the forest management situation in all 33 of ITTO's producer member countries. Using information submitted by the countries themselves and supplemented by data from a wide range of other sources, it addresses the policy and institutional settings in each country, the approaches taken to the allocation and management of resources, and the status of management of those resources.

The data indicate that significant progress has been made since 1988 towards the sustainable management of natural tropical forests, but the extent of such progress remains far from satisfactory. It is clear that the security of the tropical forest estate is still in jeopardy in many countries. Processes that allow the greater participation of local communities and other legitimate stakeholders in the management of and sharing of benefits from forests are often still insufficiently developed.

We know that tropical forests are important at the global level. Therefore, the international community must strengthen its assistance to countries in their quest to establish sustainable forest management across their permanent forest estates. This report adds considerably to our understanding and knowledge of the status of management in tropical forests and provides a basis for informed debate on how best to encourage further progress.

Manoel Sobral Filho

Executive Director
International Tropical Timber Organization

INTRODUCTION

Since the early 1970s there has been widespread public concern about the rate at which tropical forests are being degraded or destroyed. These processes have been going on in certain localities for a long time, but they have accelerated greatly since the 1960s as a result of mechanization, improved transport, and economic and population growth.

When the International Tropical Timber Agreement (ITTA) entered into force in 1986 it had one very unusual characteristic for a trade and commodity agreement: it was concerned not only with production and trade but also with the quality of management of the resource on which that trade was based. Accordingly, early in its life – 1987 – the International Tropical Timber Organization (ITTO), the body created in the ITTA to put it into effect, commissioned a survey of the management of tropical forests in its member countries, specifically directed at forests managed for timber production. The results were presented in a report to the fifth session of the International Tropical Timber Council, the Organization's governing body, in November 1988. The scope was later extended by the publication *No Timber without Trees* (Poore et al. 1989), which set this study in the wider context of the management of tropical forests for all purposes.

An alarming conclusion emerged from this survey: that an insignificant proportion of the world's tropical forests was managed sustainably, although some – but not all – of the conditions for sustainable management were present in a much larger area.

At its 30th session in 2001, the International Tropical Timber Council decided to prepare a new and more comprehensive report on sustainable forest management (SFM) in the tropics and, in Decision 9(XXX), it authorized the Executive Director "to prepare and publish [a] *Status of Forest Management Report*, based on available evidence, including (i) an examination of country reports; (ii) meetings with government officials, professional foresters, industry, concessionaires, non-governmental organizations (NGOs) and people's organizations; and (iii) field visits to a random sample of forest management units". This summary and an associated main report are the result. They discuss the nature and assess the reliability of available data; attempt to determine, as far as these data allow, the extent of the permanent forest estate (PFE) in each ITTO producer member country; examine, for each country, the policy and institutional settings for the adoption of SFM; estimate the area of forest that is actually managed sustainably for production and for protection; and discuss how the situation has changed since the first survey in 1988 and the significance of these changes for the future.

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METHODOLOGY

The report covers all 33 ITTO producer member countries. Grouped into three regions, these are: *Africa* – Cameroon, Central African Republic (CAR), Democratic Republic of Congo (DRC), Republic of Congo (sometimes referred to as Congo Brazzaville or simply, as in this report, Congo), Côte d'Ivoire, Gabon, Ghana, Liberia, Nigeria and Togo; *Asia & the Pacific* – Cambodia, Fiji, India, Indonesia, Malaysia, Myanmar, Philippines, Papua New Guinea (PNG), Thailand and Vanuatu; and *Latin America & the Caribbean* – Bolivia, Brazil, Colombia, Ecuador, Guatemala, Guyana, Honduras, Mexico, Panama, Peru, Suriname, Trinidad and Tobago and Venezuela.

This summary presents the key data on the status of tropical forest management, globally and by region, as well as short profiles of all ITTO producer member countries. The year of reporting is nominally 2005 but the actual year to which the data refer may vary considerably according to availability. The countries and forests covered by this report supply more than 90% of the global tropical timber trade and account for about 80% of global tropical forests and nearly all closed tropical forests.

DEFINITIONS

Sustainable forest management

ITTO (2005) defines SFM as:

> *the process of managing permanent forest land to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction in its inherent values and future productivity and without undue undesirable effects on the physical and social environment*

To elaborate the definition and assist the monitoring, assessment and reporting of SFM, ITTO has developed a set of key criteria and indicators (C&I) for the sustainable management of tropical forests (ITTO 2005). These comprise the essential elements of SFM; along with the definition of SFM given above, they constitute the basis of the assessment of SFM presented in this report.

The definition of SFM given here was not formulated for application in forests in totally protected areas, where forest goods are usually not extracted. Nevertheless, it can still be applied in such forests with the understanding that the extraction of 'desired goods' (both timber and non-wood forest products – NWFPs) should be zero, or close to zero, for SFM to be achieved.

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Tropical forest

Consistent with the ITTA, this report defines tropical forest as forest lying between the tropics of Cancer and Capricorn, although it has proved difficult to apply in all cases. For example, many ITTO producer countries have forests at higher altitudes within the tropics that effectively are temperate forest types. Moreover, several producer countries – Brazil, India, Mexico and Myanmar – have significant areas of forest outside the tropics. These countries do not usually distinguish between 'tropical' and 'non-tropical' in their forest statistics; therefore it has not always been possible to maintain the distinction. In such cases, the exact treatment is explained in the main report in the account of the country concerned.

Permanent forest estate

ITTO policies stress the need for countries to establish a PFE; that is, certain categories of land, whether public or private, that are to be kept under permanent forest cover to secure their optimal contribution to national development. Included in the PFE are three categories of forest: protection forests on fragile lands, forests set aside for plant and animal and ecosystem conservation, and production forests. In this report, the first two are generally grouped together as *protection PFE*, the third as *production PFE*. The production PFE includes both natural forest and planted forest (quantified separately) but excludes trees outside forests. Figures given for production PFE in this summary and in the main report are mostly for

TABLE 1: Global summary of management status in the tropical PFE

	PFE *('000 hectares)*											
	PRODUCTION							PROTECTION			ALL	
	NATURAL				PLANTED							
	Total area	With management plans	Certified	Sustainably managed	Total area	With management plans	Certified	Total area	With management plans	Sustainably managed	Total area	Sustainably managed
AFRICA	70,461	10,016	1,480	4,303	825	488	0	39,271	1,216	1,728	110,557	6,031
ASIA & THE PACIFIC	97,377	55,060	4,914	14,397	38,349	11,456	184	70,979	8,247	5,147	206,705	19,544
LATIN AMERICA & THE CARIBBEAN	184,727	31,174	4,150	6,468	5,604	2,371	1,589	351,249	8,374	4,343	541,580	10,811
TOTAL	**352,565**	**96,250**	**10,544**	**25,168**	**44,778**	**14,315**	**1,773**	**461,499**	**17,837**	**11,218**	**858,842**	**36,386**

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forests with greater than 30% canopy cover (ie closed forest), and usually much more than that. In general, then, production PFE in this summary and in the main report comprises those closed tropical forests and planted forests for industrial timber production deemed to be accorded 'permanent' status either by law or practice. As far as possible, anomalies in the PFE, and the interpretation adopted here, are identified, by country, in the main report.

SOURCES OF DATA

The country profiles presented in this summary and (in greater detail) in the main report were compiled from a wide range of sources. Member countries were asked to complete the reporting format questionnaire developed for the ITTO C&I. Of ITTO's 33 producer member countries, 23 submitted data at ITTO's request. Other international data sets, including some available on the internet, were used where judged reliable. The 2000 forest resource assessment of the Food and Agriculture Organization of the United Nations (FAO 2001) was a particularly important source; however, data collected for FAO's 2005 assessment – published in 2006 – were not available in time for use in this report. Diagnostic missions conducted by ITTO at the request of some of its members were also valuable data sources. In addition, a great deal of information was derived from experience with ITTO field projects, national-level training workshops on the application of the ITTO C&I, field visits, and discussions with organizations and individuals with specialist knowledge. Data on the area of forests in protected areas, and maps showing forest cover, were provided by the United Nations Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC) and used to supplement data received from other sources. New information received from various sources was incorporated in the country profiles up to late 2005.

In many cases, estimates for the same parameter differed according to source. Where the sources were credible, such contradictory estimates are included in this report. This is particularly the case for estimates of forest area and of the area of forested protected areas and is done partly to illustrate the uncertainty associated with the data and partly to provide readers with realistic bounds for estimates.

Estimates are given to three significant digits except where they are the product of summing within tables. Estimates of closed tropical forests are given exactly as published in FAO (2001), except where ITTO derived its own estimates.

ESTIMATING THE AREA UNDER SFM

In order to assess progress in the achievement of SFM since the survey conducted in 1988 (Poore et al. 1989), this report estimates the area of forest in each ITTO producer member country that can reasonably be thought to be under management that is largely consistent with SFM. These estimates have been derived for production forests by adding the forest management units (FMUs) that: (i) have been independently certified or in which progress towards certification is being made; (ii) have fully developed, long-term (ten years or more) forest management plans with firm information that these plans are being implemented effectively; (iii) are considered as model forest units in their country and information is available on the quality of management; and/or (iv) are community-based units with secure tenure for which the quality of management is known to be of a high standard.

Since trends are more useful than one-off measurements in determining sustainability, the assessment of SFM requires the long-term monitoring of forest values, which is carried out in very few tropical production forests. The pragmatic approach taken here, therefore, mirrors that used by Higman et al. (2005), which defines SFM as "the best available practices, based on current scientific and traditional knowledge, which allow multiple objectives and needs to be met without degrading the forest resource". The estimates of SFM in this report give the area of forests being managed in a way that, on a subjective judgement, is unlikely to cause long-term, undue reductions in the physical and social environments. It is expected that this report will establish a baseline to allow the assessment of trends in the future.

For some forests, information on the quality of management is anecdotal or otherwise unpublished. Nevertheless, in most cases the estimates should be considered conservative, since they include only those forest areas where information about the quality of forest management was available; it is possible that other forest areas are also being managed well, but information was not available for them.

Where data allowed, estimates were also made of the extent of protected forest under management considered consistent with SFM. These estimates were derived from information provided by countries and from other (mostly unpublished) sources. Areas included are those with secure boundaries and a management plan (usually fully in place, but in some instances still under development), that are generally considered in the country and by other observers to be well managed, and that are not under significant threat from destructive agents.

STATUS OF FOREST MANAGEMENT

This study covers forests in the tropical PFEs of all ITTO producer member countries except India (for which the tropical and non-tropical PFEs could not be differentiated and analysis therefore covers the total PFE). The issues of forest management and forest conversion outside the PFE are beyond the scope of this report.

GLOBAL OVERVIEW

Table 1 (page 5) gives figures for the PFE in all three regions, classified into production and protection forests, production being divided into natural and planted. For the natural production forests and for the protection forests, a figure is given for the area sustainably managed. Since the priority of this report is the management of natural forests, no comparable figure is given for planted forests; for these, the area covered by management plans and the area certified are shown. Tables 2a, 3a and 4a give the same data for countries in Africa, Asia and the Pacific, and Latin America and the Caribbean, respectively, and this quantitative information is further refined in tables 2b, 2c, 3b, 3c, 4b and 4c. The box (right) summarizes the basic data for each region.

The present natural PFE in Africa, Asia and the Pacific, and Latin America and the Caribbean is estimated to cover 110, 168 and 536 million hectares, respectively, giving a total natural PFE of 814 million hectares. Of the PFE in Latin America and the Caribbean, nearly half (271 million hectares) is made up of protection PFE in Brazil. Estimates of total forest area vary according to source. At the high end of the range of estimates, Africa has 274 million hectares of forest (40% of which is in the PFE); at the low end, 234 million hectares (47% of which is in the PFE). In the Asia-Pacific region, the figures are 316 million hectares (65%) and 283 million hectares (73%), respectively; in Latin America and the Caribbean they are 931 million hectares (58%) and 766 million hectares (71%).

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REGIONAL SUMMARIES

In all ITTO African producer member countries combined, at least 4.30 million hectares (6.1%) of the natural production PFE (70.5 million hectares) are estimated to be managed sustainably. At least 1.73 million hectares (4.4%) of the protection PFE (39.3 million hectares) are estimated to be so managed. Thus, at least 6.03 million hectares (5.5%) of the overall natural PFE (110 million hectares) are considered to be under SFM. An estimated 10.0 million hectares (14%) of natural production PFE are covered by management plans and 1.48 million hectares (2.1%) are certified; about 1.22 million hectares (3.1%) of protection PFE have management plans. An estimated 488,000 hectares of plantations (59% of all plantations in the PFE) are covered by management plans; none is certified.

In all ITTO producer member countries in the Asia-Pacific region combined, at least 14.4 million hectares (15%) of the natural production PFE (97.4 million hectares) are estimated to be managed sustainably. At least 5.15 million hectares (7.3%) of the protection PFE (70.9 million hectares) are estimated to be so managed. Thus, a total of 19.5 million hectares (11.6%) of the overall natural PFE (168 million hectares) are considered to be under SFM. An estimated 55.1 million hectares (56%) of natural production PFE are covered by management plans and 4.91 million hectares (5.0%) are certified; about 8.25 million hectares (12%) of protection PFE have management plans. An estimated 11.5 million hectares of plantations (30% of all plantations in the PFE) are covered by management plans; 184,000 hectares (0.5%) are certified.

In all ITTO producer member countries in Latin America and the Caribbean combined, at least 6.47 million hectares (3.5%) of the natural production PFE (185 million hectares) are estimated to be managed sustainably. At least 4.34 million hectares (1.2%) of the protection PFE (351 million hectares) are estimated to be so managed. Thus, at least 10.8 million hectares (2.0%) of the overall natural PFE (536 million hectares) are considered to be under SFM. An estimated 31.2 million hectares (17%) of natural production PFE are covered by management plans and 4.15 million hectares (2.2%) are certified; about 8.37 million hectares (2.4%) of protection PFE have management plans. An estimated 2.37 million hectares of plantations (42% of all plantations in the PFE) are covered by management plans; 1.59 million hectares (28%) are certified.

It is always possible for a country to de-gazette areas of PFE for purposes that it considers important. Some countries have still not clearly identified a PFE (some have not even adopted the term or a concept equivalent to it), and some have undergone political changes that have acted to obfuscate forest ownership. Also, there are still frequent conflicts over tenure that engage governments, local communities and private owners – issues that must be resolved if the forest is to be rendered more secure. Taking the tropics as a whole, however, there has been great improvement in the legal security of both production and protection forests in the last couple of decades. In addition, security has now been increased in many countries by the better delimitation of boundaries.

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Many countries still have large areas of forest outside the PFE. These are sometimes set aside deliberately for later planned conversion or reservation for other uses – as agricultural land, for example; this allows for the in-migration of people and an increase in agricultural production. Sometimes, however, land-use plans – if formulated – are not followed and forest is parcelled up and converted to other uses in an ad hoc fashion, with potential repercussions for the PFE.

The area of natural production PFE in ITTO producer member countries is estimated to be 353 million hectares (29% of the total area of tropical closed forest estimated by FAO 2001 to be 1.20 billion hectares – see tables 2a, 3a and 4a). Of this, an estimated 96.3 million hectares (27% of the total natural production PFE) are covered by management plans, 10.5 million hectares (3.0%) are certified by a recognized independent certification organization, and at least 25.2 million hectares (7.1%) are managed sustainably. The area of protection PFE in ITTO producer member countries is estimated to be 461 million hectares (38% of total tropical closed forest area as estimated by FAO 2001), of which an estimated 17.8 million hectares (3.9%) are covered by management plans and at least 11.2 million hectares (2.4%) are being managed sustainably. A much larger but unestimated area of the forest estate is not under immediate threat from anthropogenic destructive agents, being remote from large human settlements and projected roads.

Thus, the proportion of the tropical production PFE managed sustainably has grown substantially since 1988, from less than 1 million hectares (Poore et al. 1989) to more than 25 million hectares, and to more than 36 million hectares if the area of protection PFE so managed is included. Despite this significant improvement, the overall proportion of the PFE known to be sustainably managed remains very low, at less than 5% of the total.

Wood from natural production forests is supplemented in many countries by planted forests, some of them covered by management plans and some certified. In ITTO producer countries, planted forests now cover 825,000 hectares in Africa (488,000 hectares with management plans, none certified), 38.3 million hectares in Asia and the Pacific (11.5 million hectares with management plans, 184,000 hectares certified) and 5.60 million hectares in Latin America and the Caribbean (2.37 million hectares with management plans, 1.59 million certified). In many cases, data for plantation areas are from FAO (2001) and are therefore at least five years old. The area of the plantation estate in ITTO producer countries has no doubt grown substantially since then.

Illegal logging and the illegal movement of timber have become pressing issues in many countries, exacerbated by local warfare and by drug smuggling and other criminal activities. These have not only made forest management in the field a hazardous business and prejudiced the security of PFEs in many places, they have also undermined legitimate markets for timber and reduced the profitability of legitimate producers.

ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS

COMPARING SURVEYS

The basis of comparison for the management of production forests is their condition as presented in Poore et al. (1989). There is no comparable baseline study for the protection PFE.

The first question asked in the 1988 survey was simple: how much natural forest was being managed at an operational scale for the sustainable production of timber?

The answer was unequivocal: almost none. In Latin America and the Caribbean, there were only 75,000 hectares in Trinidad and Tobago; in Africa, none. In Asia, a number of "forests and operations appeared to be reasonably successful as potential sustained-yield units" in Malaysia, Indonesia and the Philippines. Note, however, that insufficient information was received from India in 1988 to reach any conclusions, even though India was a member country at the time.

Any comparison of findings from the 1988 and present surveys faces some obvious difficulties. The first is that comprehensive, reliable data were scarce for both surveys, although more was available for the second than the first (see later discussion). Another is that the number of countries surveyed expanded greatly in the second, from 18 to 33. Several of the 15 additional countries have significant tropical forest resources, including Colombia, DRC and Venezuela. Combined, the 15 contribute 2.80 million hectares of the estimated area of SFM

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in 2005, and India contributes 4.80 million hectares. Thus, while the overall estimate of SFM in the natural production PFE in 2005 is 25.2 million hectares, the increase in the countries that were included in both surveys is about 17.5 million hectares.

In addition to the gross increase in area considered to be under SFM, one of the most noticeable improvements since 1988 is the almost universal move towards the enactment of new forest laws and regulations, the reorganization of departments responsible for forests and, in many countries, moves towards the devolution of responsibilities to lower echelons of government. An increasing interest in certification within both government and the private sector is also apparent.

Some countries appear to have made less progress than others. Since 1988, the area of closed tropical forest for both production and protection has declined significantly in countries such as Côte d'Ivoire, the Philippines and Togo. Countries such as Liberia and DRC, which have endured major armed conflicts, have been unable to develop the administrative and private-sector capacity to pursue SFM. A lack of forest law enforcement remains a major problem in many countries, and progress in identifying, demarcating and securing a PFE has perhaps been less than might have been hoped for.

PRODUCTION FORESTS

Despite difficulties and some notable deficiencies, there has been some significant progress in the last 17 years. Countries have established and are starting to implement new forest policies that contain the basic elements of SFM. More forests have been given some security by commitment as PFE (or a similar concept) for production or protection, more are covered by management plans and more are actually being managed sustainably. All of this is encouraging, but the proportion of natural production forest under SFM is still very low, and SFM is distributed unevenly across the tropics and within countries.

The area now covered by formal forest management plans is estimated to be 96.3 million hectares (27% of the natural production PFE). The fact that this is much more than the 7% that is managed sustainably warrants further examination. Part of the discrepancy may be because more information was available on the area covered by management plans than on the extent to which such management plans were being implemented. But almost certainly there is also a problem in the actual implementation of management plans. Companies are able to comply relatively easily with the requirement to develop management plans for the forests they are licensed to harvest, but without keen oversight by a regulatory body may not feel compelled (and in some cases may not have the capacity or the intention) to implement them. With more international support, coupled with greater enforcement of the requirements of forest management plans, SFM is likely to become more widespread in the natural production PFE. Countries such as Brazil, Congo, Ghana, Malaysia and Peru might be expected to lead the way, and many others have established at least some of the elements necessary for the greater adoption of SFM.

Planted forests

Planted forests are coming to play a much more significant role in the supply of tropical timber. The fact that this role was not even considered in the 1988 survey shows how much things have changed; the area of planted tropical forests has expanded considerably in the past 15–20 years and continues to do so, and some countries are becoming increasingly reliant on planted forests for domestic wood supply. Unfortunately, there is a lack of comprehensive information across a range of countries as to the proportion of wood supply derived from plantations and the implementation of SFM in them, information deficits that will need to be rectified to allow more meaningful assessments of overall progress towards SFM in the tropics in the future.

Sustainable yield

Sustainable yield – the amount of timber (and other products and services) that can be harvested from a forest on a sustainable basis – is critical to SFM in the production PFE, both nationally and at the FMU level. However, few countries provided estimates of sustainable timber yields or data on actual offtakes in their PFEs and FMUs for this report.

The calculation of sustainable timber yield is complex and depends on, among other things, knowledge of growth rates of timber species under specified silvicultural prescriptions, adequate inventories of growing stock, the quality of forest management practice, the accessibility of production forest and the marketability of different species. It is therefore beyond the scope of this report to calculate potential sustainable yields or their relationship with current timber production; such an exercise would be inherently unreliable given the paucity of information on harvesting intensity, periods between re-entries

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to previously harvested stands, productivities of different forest types for industrial roundwood and fuelwood, the role of plantations (which usually have a much higher sustainable yield), etc.

Nevertheless, an examination of available data shows that if the average sustainable timber yield was about 1 m^3 per hectare per year in natural production PFEs (a conservative but widely accepted estimate of tropical forest productivity), many countries would have sufficient forest resources to sustain or increase current production were they to introduce (or expand) a sustainable yield regime in their PFEs. On the other hand, some countries would already appear to have difficulty supporting current production on a sustainable-yield basis from their natural forests. They must rely on timber plantations, harvesting from non-PFE forests and/or imports (as well as production from their natural PFEs) to maintain their current timber consumption; often, such countries also have large areas of degraded forest lands.

PROTECTION FORESTS

Data are still sparse on the extent to which the protection PFE represents the full diversity of forest ecosystems found there. Indeed, the designation of protected areas has often been relegated – not just in the tropics – to those areas of land left over when all other economic land-uses have been satisfied or that are too difficult to harvest. But it is now recognized that they should be selected according to their intrinsic value for biodiversity conservation, which usually means the inclusion of representative samples of all forest ecosystems; any areas of exceptional biological richness or where there are concentrations of endemic species; and the breeding, feeding and staging grounds of migratory species. It is desirable, too, that protected areas should be large and contain internal variation and, ideally, should constitute a network of connected habitats if they are to accommodate the larger animals and be buffered against environmental change. They also depend crucially on the cooperation and support of local communities.

Data provided by UNEP-WCMC presented in this summary and in the main report estimate the extent of forest types included in protected areas conforming to IUCN protected-area categories I–IV, by country. According to this source, 156 million hectares of tropical forest out of a total area of protection PFE of 461 million hectares are within reserves conforming to IUCN categories I–IV. Moreover, these seem reasonably well distributed among the various forest types in at least some countries. However, much more detailed analysis is needed to illuminate discrepancies in the data and to determine their reliability, the adequacy of the coverage of forest types, and how far the distribution of areas will ensure buffering against the possible effects of environmental change. Sparse though the information is, any progress in the sustainable management of protected areas must be assessed against these data; there is no earlier reliable baseline.

SUMMARY OF CHANGE

To summarize the present status of SFM compared to that in 1988:

- uneven progress has been made in the identification, demarcation and protection of PFEs. In many countries there still exists considerable uncertainty about the concept;
- there is greater government commitment to SFM, as demonstrated by improved legislation, administrative arrangements and consultative processes;

- forest tenure is still in a state of flux in many countries but is increasingly directed towards communities;
- there is an increase in the area of PFE that is managed sustainably, but progress is uneven within and across countries and regions;
- forest law enforcement is often weak due to the inadequate staffing and support of enforcement agencies, the remoteness of the resource, and confusion created by sometimes-conflicting legislation and by decentralization and other political processes;
- the resources allocated by governments and development assistance agencies to forest management are often seriously inadequate, reflected in chronic shortages of vehicles, equipment and trained and motivated staff; and
- there is more and better information about SFM than in the past, but it is still far from adequate for the comprehensive monitoring, assessment and reporting of SFM in either production or protection PFEs.

CONSTRAINTS TO SFM

Putting aside the difficulties caused by wars and armed conflicts, several constraints frequently recur in the country profiles. Probably the most important, and the most generally applicable, is that sustainable management for the production of timber is less profitable to the various parties involved (government, concessionaires and local communities) than other possible ways of using the land. Many of the FMUs in which SFM (and particularly, in some countries, certification) has been established have benefited from external financial and technical support from development assistance agencies and NGOs. The economic viability of SFM within these FMUs will be properly tested once such support is withdrawn. Those governments and companies that have been striving to improve forest management, even when they have not yet been wholly successful, merit the long-term support of markets, development assistance agencies, NGOs and the general public.

Other constraints are related to land. There have been advances in many countries in committing forest for either production or protection and in establishing a PFE, but without the security provided by long-term government resolve and by credible arrangements for tenure, SFM is unlikely to succeed. The best results will usually be achieved where countries (or relevant sub-national political units) decide the future uses to which they wish to allocate their forest resources and set up mechanisms to ensure that this allocation happens. There is little point in devoting scarce resources to bring an area of forest to a high standard of management if it is eventually to be converted to some other non-forest form of land-use.

Illegal logging and the illegal trade of timber are significant problems that have increasingly exercised the international forest-policy community in recent years. Discussing the problems is certainly an important first step in dealing with them but cannot, in itself, be sufficient. Ultimately they will be best addressed by improved laws and rigorous forest law enforcement, which in many cases will require increased support from governments in both producer and consumer countries. In many places, control in the field remains a central concern.

There is an almost universal lack of the resources needed to manage tropical forest properly. There are chronic shortages of staff, equipment, vehicles, facilities for research and training and all the other necessities for running an efficient enterprise – often accompanied by low staff morale. Pay and conditions of service are rarely sufficiently favourable to attract (and keep) enough able, dedicated and qualified staff to work in the field. These shortages are a reflection of the low social and economic status of field-based forestry and the relatively low priority accorded to forest management in many countries, both of which are partly attributable to the low economic returns provided by SFM.

THE NATURE OF THE EVIDENCE

In the preparation of the main report it became clear that, in most countries, information on the extent of forests and the status of management in the PFE is still very poor. For example, estimates of total forest area – arguably the most basic figure of all – vary by as much as 230% between sources. There also appears to be great uncertainty about the area of forest allocated to the PFE and about the extent of forests in protected areas and the level of protection afforded them. The extent of illegal activities in forests, one of the biggest hindrances to SFM, is rarely known or reported by governments, and estimates made by NGOs are often little more than guesses. Nearly one-third of ITTO producer member countries failed to submit a response to the ITTO C&I reporting format and, of those that did, many responses were at least partially unusable due to missing or obviously inaccurate data. The publication of this report should encourage ITTO member countries, and forest-

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related institutions and organizations, to continue to improve their data collection systems, since reliable information is the cornerstone for both practising and assessing SFM.

FUTURE DIRECTIONS

The global setting for the management of tropical moist forests is changing. Populations and aspirations are growing and communications improving. The agricultural frontier is continuing to advance, while previously inaccessible forests are becoming accessible and others have already been logged more than once, often becoming degraded in the process. The global market economy is extending its reach, with profound implications for land-use. For timber, the demand for certification is starting to influence management in FMUs in export-oriented countries. Conversely, a ready availability of relatively cheap commodity timbers from non-tropical forests, tropical plantations and illegal operations impose strict limits on the price increases that are possible for timber from sustainably managed natural tropical forests.

There is little doubt that standards of forest management improve as countries become richer and better able to allocate resources to enforce forest laws and implement SFM. It follows, therefore, that SFM can be expected to become more widespread in the tropics with economic growth, although such growth might also increase deforestation, at least temporarily. Eventually, countries that continue to develop economically will attain the capacity necessary to safeguard their PFEs and manage them sustainably. Conversely, continued poverty poses a significant threat to tropical forests. Civil war and other violent conflicts are similarly problematic, and those countries in which such conflicts have been prevalent since 1988 have generally made little progress towards SFM.

A number of possible developments may affect the direction of future change:

- the expansion of planted forests and the use of agricultural tree crops for timber may reduce timber-demand pressure on the natural forest by supplying an increasing proportion of wood production;
- declining timber prices and/or increased prices for agricultural products would undermine efforts towards SFM;
- a greater focus on the management of high-value timber species, an expanded range of species, and/or increased value-added production could help increase the profitability of natural forest management;
- climate change could affect forest growth, yield and even survival. A general drying in the tropics could lead to an increased incidence of forest fire and drought-related changes to forest structure. Conversely, increased rainfall could lead to higher rates of forest growth and could also cause more erosion, landslides and flooding;
- greater security of tenure may help to increase sustainable management;
- the situation of those peoples who live in or near the forest is unlikely to remain static. If living standards improve and migration to urban centres continues, local pressures on forest may decrease;
- decentralization may align forest management more closely with local interests, but there is no guarantee that this will favour SFM;
- as affluence increases, public pressure could induce governments to improve management and pay more attention to environmental values; and

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- the global community could increase its payments for the global environmental services provided by natural tropical forests, thereby improving the economic viability of SFM.

Given the number of variables at play, and the likelihood that entirely new ones will arise, it is difficult to predict how the status of tropical forest management will change in the future. It seems fairly certain, however, that the global area of natural tropical forests will continue to decline in the medium term and that management in the remaining areas, responding to a combination of market pressures and growing domestic concerns for forests as countries grow economically, will continue to improve. ITTO and others seeking to promote SFM in the tropics will continue to face a challenging agenda in the years to come.

RECOMMENDATIONS

This report should prove helpful in illuminating the status of tropical forest management; however, its usefulness will be limited if it is not repeated at reasonably regular (and frequent) intervals, because trends are essential in assessing progress towards SFM. **It is therefore recommended that regular reporting on the status of tropical forest management be instituted at the international level.**

Many countries still lack the capacity to collect, analyse and make available comprehensive data on the status of forest management. **It would be in the interest of the international community to make resources available to improve this capacity, and it is recommended that it does so.**

There has been an appreciable degree of progress towards SFM in tropical forests over the last 17 years, but there is still a long way to go in building the practice of SFM on these enabling foundations. However, the most debilitating weakness is the failure to develop an adequate and reliable system on a global scale for funding the additional costs involved in putting SFM into practice in the forest. A general progression towards SFM in the tropics will be faster and more robust if SFM is seen as a financially competitive land-use. This in turn will be best achieved if prices for timber from natural tropical forests are strong and/or the important services provided by such forests, such as water production, biodiversity conservation and carbon storage, are paid for. **A final recommendation is that the international forest-related community makes its number-one priority the development of a system for ensuring that SFM is a financially remunerative land-use.**

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TABLE 2A: TOTAL FOREST AREA AND PFE IN AFRICA

COUNTRY	TOTAL FOREST AREA *(range) (million hectares)*	TOTAL CLOSED NATURAL FOREST *(FAO 2001) ('000 hectares)*	PFE *('000 hectares)*				
			PRODUCTION			PROTECTION	TOTAL
			Natural	Planted	Total		
CAMEROON	13.3–23.8	19,985	8,840	17	8,857	3,900	12,757
CAR	22.9–29.3	4,826	3,500	3	3,503	300	3,803
DRC	128–135	126,236	20,500	55	20,555	27,000	47,555
CONGO	20.3–22.1	22,000	18,400	72	18,472	2,860	21,332
CÔTE D'IVOIRE	7.12–11.7	3,248	3,400	167	3,567	734	4,301
GABON	25.8	21,800	10,600	25	10,625	2,700	13,325
GHANA	2.72–6.34	1,634	1,150	97	1,247	353	1,600
LIBERIA	3.48–5.66	4,124	1,310	n.d.	1,310	101	1,411
NIGERIA	9.7–13.5	4,456	2,720	375	3,095	1,010	4,105
TOGO	0.51–1.09	272	41	14	55	313	368
TOTAL		**208,581**	**70,461**	**825**	**71,286**	**39,271**	**110,557**

n.d. = no data

TABLE 2B: MANAGEMENT OF THE PRODUCTION PFE IN AFRICA ('000 HECTARES)

COUNTRY	NATURAL					PLANTED		
	Total area	Allocated to concessions/ under licence	With management plans	Certified	Sustainably managed	Total area	With management plans	Certified
CAMEROON	8,840	4,950	1,760	0	500	17	n.d.	0
CAR	3,500	2,920	650	0	186	3	n.d.	0
DRC	20,500	15,500	1,080	0	284	55	40	0
CONGO	18,400	8,440	1,300	0	1,300	72	45	0
CÔTE D'IVOIRE	3,400	1,870	1,110	0	277	167	120	0
GABON	10,600	6,923	2,310	1,480	1,480	25	10	0
GHANA	1,150	1,035	1,150	0	270	97	97	0
LIBERIA	1,310	1,310	0	0	0	n.d.	0	0
NIGERIA	2,720	1,060	650	0	n.d.	375	175	0
TOGO	41	41	5.5	0	5.5	14	1.2	0
TOTAL	**70,461**	**44,049**	**10,016**	**1,480**	**4,303**	**825**	**488**	**0**

TABLE 2C: MANAGEMENT OF THE PROTECTION PFE IN AFRICA ('000 HECTARES)

COUNTRY	Total area	Attributed to IUCN categories I–IV	Allocated for soil and water protection	With management plans	Sustainably managed
CAMEROON	3,900	2,650	n.d.	n.d.	n.d.
CAR	300	3,090	5.7	n.d.	n.d.
DRC	27,000	9,320	n.d.	n.d.	0
CONGO	2,860	2,860	3,660	380	380
CÔTE D'IVOIRE	734	734	195	345	150
GABON	2,700	570	0	491	1,090*
GHANA	353	174	n.d.	n.d.	108
LIBERIA	101	101	0	0	0
NIGERIA	1,010	1,010	n.d.	n.d.	n.d.
TOGO	313	60.9	200	n.d.	n.d.
TOTAL	**39,271**	**20,570**	**4,061**	**1,216**	**1,728**

**Includes 599,000 hectares in the Minkebe National Park and Forest Reserve, for which a management plan is in the final stages of preparation*

TABLE 3A: TOTAL FOREST AREA AND PFE IN ASIA & THE PACIFIC

COUNTRY	TOTAL FOREST AREA *(range) (million hectares)*	TOTAL CLOSED NATURAL FOREST *(FAO 2001) ('000 hectares)*	PFE *('000 hectares)*				
			PRODUCTION			PROTECTION	TOTAL
			Natural	Planted	Total		
CAMBODIA	9.33–11.1	5,500	3,460	17	3,477	4,620	8,097
FIJI	0.82–0.93	747	0	113	113	241	354
INDIA	64.1–76.8	22,500*	13,500	32,600	46,100	25,600	71,700
INDONESIA	105–120	100,382	46,000	2,500	48,500	22,500	71,000
MALAYSIA	19.3–19.5	19,148	11,200	183	11,383	3,210	14,593
MYANMAR	34.4	32,700	9,700	710	10,410	3,300	13,710
PNG	30.6	30,150	8,700	80	8,780	1,700	10,480
PHILIPPINES	5.4–7.2	5,288	4,700	274	4,974	1,540	6,514
THAILAND	13.0–14.8	10,127	0	1,870	1,870	8,260	10,130
VANUATU	0.902	442	117	2.10	119	8.37	127
TOTAL		**204,484**	**97,377**	**38,349**	**135,726**	**70,979**	**206,705**

**Tropical only*

TABLE 3B: MANAGEMENT OF THE PRODUCTION PFE IN ASIA & THE PACIFIC ('000 HECTARES)

COUNTRY	NATURAL					PLANTED		
	Total area	Allocated to concessions/ under licence	With management plans	Certified	Sustainably managed	Total area	With management plans	Certified
CAMBODIA	3,460	3,370*	150	0	0	17	7	0
FIJI	0	n.a.	n.a.	n.a.	n.a.	113	90	0
INDIA	13,500	13,500	9,720	0	4,800	32,600	8,150	0
INDONESIA	46,000	43,200	18,400	275	2,940	2,500	2,500	0.152
MALAYSIA	11,200	6,790	11,200	4,620	4,790	183	183	183
MYANMAR	9,700	n.a.	9,700	0	291	710	0	0
PNG	8,700	5,600	4,980	19	1,500	80	n.d.	0
PHILIPPINES	4,700	n.d.	910	0	76	274	274	0
THAILAND	0	n.a.	n.a.	n.a.	n.a.	1,870	250	1
VANUATU	117	n.d.	0	0	0	2.1	2.1	0
TOTAL	**97,377**	**69,090**	**55,060**	**4,914**	**14,397**	**38,349**	**11,456**	**184**

**Suspended* *n.a. = not applicable*

TABLE 3C: MANAGEMENT OF THE PROTECTION PFE IN ASIA & THE PACIFIC ('000 HECTARES)

COUNTRY	Total area	Attributed to IUCN categories I–IV	Allocated for soil and water protection	With management plans	Sustainably managed
CAMBODIA	4,620	3,360	4,200	n.d.	n.d.
FIJI	241	3	18	37	55
INDIA	25,600	3,060	n.d.	n.d.	n.d.
INDONESIA	22,500	14,400	16,000	5,000	1,360
MALAYSIA	3,210	1,400	3,210	3,210	3,210
MYANMAR	3,300	195	6,560	n.d.	n.d.
PNG	1,700	362	n.d.	n.d.	n.d.
PHILIPPINES	1,540	1,540	n.d.	n.d.	n.d.
THAILAND	8,260	5,450	9,320	n.d.	522
VANUATU	8.37	0	n.d.	n.d.	n.d.
TOTAL	**70,979**	**29,770**	**39,308**	**8,247**	**5,147**

TABLE 4A: TOTAL FOREST AREA AND PFE IN LATIN AMERICA & THE CARIBBEAN

COUNTRY	TOTAL FOREST AREA *(range)* *(million hectares)*	TOTAL CLOSED NATURAL FOREST *(FAO 2001)* *('000 hectares)*	PFE *('000 hectares)*				
			PRODUCTION			PROTECTION	TOTAL
			Natural	Planted	Total		
BOLIVIA	52.2–59.5	47,999	17,000	60	17,060	14,700	31,760
BRAZIL	444–544	489,515	98,100	3,810	101,910	271,000	372,910
COLOMBIA	49.6–65.6	51,437	5,500	148	5,648	8,860	14,508
ECUADOR	8.40–11.4	10,854	3,100	164	3,264	4,300	7,564
GUATEMALA	2.85–4.29	2,824	1,140	71	1,211	1,240	2,451
GUYANA	16.9	16,916	5,450	12	5,462	980	6,442
HONDURAS	5.38	3,811	1,590	48	1,638	1,600	3,238
MEXICO	55.2–64.0	33,120	7,880	100	7,980	5,600	13,580
PANAMA	2.88–3.48	3,052	350	56	406	1,580	1,986
PERU	65.2–86.4	64,204	24,600	250	24,850	16,300	41,150
SURINAME	13.6–14.8	14,100	6,890	7	6,897	4,430	11,327
TRINIDAD & TOBAGO	0.248–0.259	250	127	15.4	142.4	59.1	201.5
VENEZUELA	49.9–55.0	49,926	13,000	863	13,863	20,600	34,463
TOTAL		**788,008**	**184,727**	**5,604**	**190,331**	**351,249**	**541,581**

TABLE 4B: MANAGEMENT OF THE PRODUCTION PFE IN LATIN AMERICA & THE CARIBBEAN ('000 HECTARES)

COUNTRY	NATURAL					PLANTED		
	Total area	Allocated to concessions/ under licence	With management plans	Certified	Sustainably managed	Total area	With management plans	Certified
BOLIVIA	17,000	5,470	5,470	2,210	2,210	60	n.d.	0
BRAZIL	98,100	n.a.	5,250	1,160	1,360	3,810	1,350	1,350
COLOMBIA	5,500	2,150	n.d.	0	200	148	80	58
ECUADOR	3,100	n.d.	65	0	101	164	65	21.3
GUATEMALA	1,140	540	697	520	672	71	25	7.57
GUYANA	5,450	3,800	3,730	0	520	12	0	0
HONDURAS	1,590	1,070	671	37	187	48	28	0
MEXICO	7,880	8,600	8,600	163	163	100	34	0
PANAMA	350	86	63	0	0	56	32	12.2
PERU	24,600	8,000	5,000	59.5	560	200–300	8	0
SURINAME	6,890	1,740	73	0	0	7	7	0
TRINIDAD & TOBAGO	127	75	75	0	15	15.4	15.4	0
VENEZUELA	13,000	3,120	1,480	0	480	863	727	140
TOTAL	**184,727**	**34,651**	**31,174**	**4,150**	**6,468**	**5,604**	**2,371**	**1,589**

TABLE 4C: MANAGEMENT OF THE PROTECTION PFE IN LATIN AMERICA & THE CARIBBEAN ('000 HECTARES)

COUNTRY	Total area	Attributed to IUCN categories I–IV	Allocated for soil and water protection	With management plans	Sustainably managed
BOLIVIA	14,700	7,660	6,790	n.d.	2,380
BRAZIL	271,000	19,000	n.d.	n.d.	n.d.
COLOMBIA	8,860	8,860	312	n.d.	n.d.
ECUADOR	4,300	1,790	2,450	513	n.d.
GUATEMALA	1,240	836	184	n.d.	n.d.
GUYANA	980	980	n.d.	243	243
HONDURAS	1,600	434	n.d.	n.d.	n.d.
MEXICO	5,600	1,040	n.d.	n.d.	n.d.
PANAMA	1,580	1,040	326	396	180
PERU	16,300	3,130	390	n.d.	1,540
SURINAME	4,430	1,390	1,160	n.d.	n.d.
TRINIDAD & TOBAGO	59.1	29.2	n.d.	12	n.d.
VENEZUELA	20,600	20,600	1,740	7,210	n.d.
TOTAL	**351,249**	**66,789**	**13,352**	**8,374**	**4,343**

AFRICA

*Same legend applies to country maps, but protected areas are not shown

CAMEROON

Cameroon possesses significant forest resources with good potential for SFM. The policy environment is sound and governmental responsibility for forests is vested in a single ministry, the Ministry of Forests and Fauna (MINFOF). However, the capacity of the ministry to fully enforce the forest law and implement the forest policy is low. Cameroon is yet to translate many of its ambitious forest management goals into practice and effectively protect its PFE from deforestation and degradation.

KEY POINTS

- Cameroon has an estimated 12.8 million hectares of PFE, comprising 8.84 million hectares of natural production forest, 3.90 million hectares of protection forest and 17,000 hectares of industrial timber plantations.
- At least 500,000 hectares of natural-forest production PFE are estimated to be managed sustainably. Insufficient data were available to estimate the area of protection PFE so managed.
- In 2004, nine foreign companies held 3.15 million hectares of the concession area in 45 FMUs. Of 72 FMUs, 32 had approved management plans, the management plans of 17 had been rejected by MINFOF, the status of 14 was unknown and 19 were in process.
- Of the 4.95 million hectares of PFE under licence or allocated to concessions, about 1.76 million hectares had a management plan or had completed forest inventories for the preparation of a management plan.
- The integrity of the PFE is threatened by encroachment, poaching and poor logging practices, including illegal logging, but no official data on the extent of these are available.
- There is a good framework of policy and legislation but its implementation is limited.
- Despite considerable efforts to reorganize the forest administration and improve forest law enforcement, the implementation capacity of MINFOF remains weak due to a lack of funding, training and internal control.
- Cameroon is rich in biodiversity, accommodating more than 8,300 plant species, about 297 mammal species and 848 bird species; nearly half of all the bird and mammal species of Africa are present in Cameroon's forests.
- Hunting for wild meat, including for commercial sale, is believed to have significantly reduced the abundance of certain mammals in some areas.

CENTRAL AFRICAN REPUBLIC

CAR possesses a substantial forest resource base in the south with a sizeable growing stock of high-value hardwood timber. Forest production provides important export revenues and contributes 5% or more to GDP. Two forest inventories have been carried out, the results of which can support forest management planning and economic analysis. In 1990, the country introduced a forest code that sets out social, environmental and silvicultural norms. However, there is a gap between the law and its implementation in the field.

KEY POINTS

- CAR has an estimated 3.80 million hectares of PFE, comprising 3.50 million hectares of natural production forest, 300,000 hectares of protection forest and 3,000 hectares of industrial timber plantations.
- At least 186,000 hectares (about 5%) of the natural-forest production PFE are under SFM. Insufficient data were available to estimate the area of protection PFE so managed.
- Commercial harvesting is carried out mostly by private entrepreneurs under management permits (*Permis d'exploitation et d'aménagement*), which are valid for the lifetime of the company.
- In mid 2005, ten timber companies, all foreign-owned, were operating in the southwest of the country in an area of 3.3 million hectares.
- A relatively small area of closed forest is contained in protected areas.
- There is little awareness in the private sector of the need for sustainable management, although such awareness may be growing as companies are obliged to develop forest management plans.
- The ministry in charge of forests, *Ministère des Eaux, Forêts, Chasses, Pêches, Environnement et du Tourisme*, generally lacks the capacity to oversee management of the PFE and to enforce the law, including sanctions when rules and regulations are infringed.
- The forest sector generates about 14% of state revenues.
- Wild meat and the gathering of edible fruits, nuts, insects and roots are of great importance for local communities.
- According to the forest law, a significant share of revenues generated by forest taxes is to be redistributed to local communities. However, such revenues are unevenly distributed between and within such communities.
- CAR is a landlocked country and the transport costs of exported timber are relatively high compared to those of other countries in the Congo Basin, limiting the profitability of SFM.

DEMOCRATIC REPUBLIC OF CONGO

A recent civil war took a heavy toll on DRC's infrastructure and development. Despite vast forest resources, the forestry sector failed to attract international investors or donors and remains undeveloped. There has been some improvement since 2002 (when the war ended) and the government has developed a policy aimed at encouraging the sustainable use of forest resources. The arrangements for forest and concession management and the enforcement of rules are currently in a state of flux; capacity for SFM remains minimal and its widespread adoption seems a long way off. Nevertheless, the forest sector has the potential (with appropriate planning and regulation) to play a crucial role in the country's recovery and subsequent development.

KEY POINTS

- DRC has vast closed tropical forests and a relatively low level of conversion to other uses, but the forest sector is in disarray as the country emerges from a long civil war.
- DRC has an estimated 47.6 million hectares of PFE, comprising 20.5 million hectares of production forest, 27.0 million hectares of protection forest and 55,000 hectares of industrial timber plantations.
- At least 284,000 hectares of the natural-forest production PFE are being managed sustainably, comprising three research and education forests. No areas of protection PFE are deemed to be so managed.
- Although not under formal management, large areas of DRC's forests are currently under no threat from deforestation or other significant human-induced disturbance due to their remoteness.
- Only one area of production forest, of about 1.1 million hectares, is covered by a management plan.
- Under the 2002 forest law, concessions of up to 500,000 hectares can be allocated for 25-year periods (renewable).
- Forestry administration is the responsibility of three directorates within the Ministry of Environment, Nature Conservation, Water Resources and Forests. A severe lack of capacity hinders efforts to supervise the forestry sector.
- The volume of timber harvested in DRC is only a tiny fraction of the potential sustainable yield, even accounting for likely significant levels of illegal logging.
- Four of the country's ten national parks are listed as UNESCO World Heritage sites; an estimated 9.32 million hectares of forest are contained in protected areas conforming to IUCN categories I–IV.

REPUBLIC OF CONGO

The Republic of Congo has a large forest resource, supportive government policies, little population pressure, and at least one large concessionaire well advanced along the path to SFM. The stage therefore seems set for the forestry sector – particularly in northern Congo – to expand the area of forest under SFM, provided that issues related to local communities and the over-hunting of certain mammal species can be addressed.

KEY POINTS

- The Republic of Congo has a large resource of closed tropical forests, particularly in the north, and a relatively low level of conversion to other uses, although there is significant encroachment in the southern forests.
- The PFE is an estimated 21.3 million hectares, comprising 18.4 million hectares of production forest, 2.86 million hectares of protection forest and 72,000 hectares of industrial timber plantations.
- At least 1.30 million hectares of the natural-forest production PFE, comprising the concession areas of *Congolaise Industrielle des Bois* in northern Congo, are thought to be under SFM. Some 380,000 hectares of protection PFE are deemed to be so managed.
- The over-hunting of wild meat within concessions, and social relations between indigenous forest dwellers and migrants, are possibly the biggest constraints to SFM in northern Congo.
- Forestry administration is the responsibility of the Ministry of Forest Economy and the Environment (MEFE). Institutional capacity remains relatively weak.
- In the south, more than 1 million hectares of forest have been allocated for harvesting in lots of about 50,000 hectares to operators largely unskilled in forest management.
- In the north, concession-holders are expected to collaborate with MEFE in the development of forest management plans; inventories have been carried out on at least 6.4 million hectares.

CÔTE D'IVOIRE

Côte d'Ivoire's 230 state-owned classified forests (*forêts classées*) have been over-harvested and have become depleted of timber; natural forests in the rural zone (*domain rural*) and planted forests are providing an increasing part of the timber supply. Institutional responsibility for forestry administration has changed several times in recent years, with the likely result of reducing administrative effectiveness. The level of enforcement of existing laws and decrees appears to be low in much of the PFE. Forest management plans are under preparation or have been prepared for the forest reserves, but few have been prepared for the *domain rural*. Illegal logging and deforestation are thought to be widespread, exacerbated by civil unrest.

KEY POINTS

- Côte d'Ivoire has a relatively low forest cover which continues to diminish.
- The country has an estimated 4.30 million hectares of PFE, comprising 3.40 million hectares of natural production forest, 167,000 hectares of industrial timber plantations and 734,000 hectares of protection forest.
- The estimated area of production PFE under SFM is 277,000 hectares, which is about one-quarter of the forest reserves covered by management plans. About 150,000 hectares of protection PFE are considered to be so managed.
- Forestry administration is currently the responsibility of the Ministry for Water and Forests (MINEF), which operates under a 1965 forest code and subsequent decrees. A process to revise the code is under way.
- Ten regional offices are responsible for forest protection and law enforcement. SODEFOR, a government corporation, manages the forest reserves and provides advisory services.
- MINEF and SODEFOR employ 2,000 people combined.
- Concession-holders are obliged to present a forest management plan that includes a reforestation scheme and social investments for the rural population living in or adjacent to the forest.
- There is a discrepancy between the standards applied in the forest reserves of the PFE and in the *domaine rural*.
- There is conflict between communities and harvesting operators over the use of forests.
- Poaching is believed to be a significant problem.

GABON

Over the past ten years, Gabon has gone through a profound process of reform affecting the forest and environment. A new forest law has come into force that emphasizes SFM as the overall approach in the PFE. Forestry is, and will remain, one of the pillars of Gabon's economic and social development. The private sector has become a major driver of industrial forest development and the export of forest products. The government has introduced a system to institutionalize community forestry as a way of meeting local needs for timber and other forest products. Gabon has a low deforestation rate, forests rich in valuable timber species and among the best prospects for a healthy and sustainable forest industry. There are still problems – mainly in governance. For example, there is little civil advocacy and few participatory processes in the forestry sector. Protected-area management in Gabon is still in its infancy and requires greater planning and effective enforcement.

KEY POINTS

- Gabon has timber-rich and extensive forest resources with a relatively low risk of conversion to other uses.
- The PFE is an estimated 13.3 million hectares, comprising 10.6 million hectares of natural production forest, 2.70 million hectares of protection forest and 25,000 hectares of plantations.
- At least 1.48 million hectares of natural-forest production PFE are thought to be managed sustainably; at least 1.09 million hectares of the protection PFE are considered to be so managed.
- The financial viability of SFM is greatly enhanced by the high quantity and quality of a prime species (okoumé) in a large part of the forest estate, particularly on the coastal plains.
- However, because of its high value, okoumé tends to be over-harvested.
- Community forests may be created in rural forests, but few had been as of 2004.
- High standards for concession management have been developed on paper, but still need to be fully introduced and enforced. There is interest in the application of C&I as a monitoring tool and forest certification has been encouraged.
- Many protected areas do not appear to be managed effectively.
- Management for wild meat and other NWFPs is still largely uncontrolled in forest concessions.

GHANA

Ghana has favourable conditions for the achievement of SFM, such as impressive human resources – including a strong Forestry Commission – and a long history of forest management. Nevertheless, many challenges must be met. For example, fire plays an influential and – in some forests – destructive ecological role and is difficult to control. Some forest reserves are well-managed, but others may have been over-harvested and off-reserve forests are often unregulated. Moreover, illegal activities such as chainsaw lumber production and poaching are thought to be widespread.

KEY POINTS

- The area of PFE is an estimated 1.60 million hectares, comprising 1.15 million hectares of natural-forest production PFE, 353,000 hectares of protection PFE and 97,000 hectares of plantations.
- At least 270,000 hectares of natural-forest production PFE are considered to be managed sustainably; an estimated 108,000 hectares of protection PFE are so managed.
- The silvicultural system used in natural forests is a polycyclic selection felling system using a cutting cycle of 40 years; a national AAC has been set at 500,000 m^3.
- There are manuals for production, management and planning, which set out the obligations of logging contractors.
- Ghana is establishing a sizeable plantation estate of teak.
- Community participation in forestry is being facilitated through community forest committees (CFCs) and a collaborative forest management unit of the Forestry Commission; in 2003 there were some 100 CFCs.
- An estimated 2 million people depend on forests for subsistence uses and traditional and customary lifestyles.
- Ghana has introduced a new timber utilization contract system to improve efficiency, transparency and accountability in forestry, particularly in forest production activities.
- There is limited information about the condition of protected areas.

LIBERIA

Liberia is blessed with a rich forest resource, a substantial part of which, however, has been lost or degraded in recent years during civil war. Once the country emerges from its political problems, a newly reconstituted and restructured forest sector, built on the pillars of accountability and transparency, could play a major role in economic growth and sustainable development. But its success will depend very much on strong political will and international support.

KEY POINTS

- Liberia's PFE covers an estimated 1.41 million hectares, comprising 1.31 million hectares of natural-forest production PFE and 101,000 hectares of protection PFE. More forest could be committed to the PFE from the presently uncommitted area of about 2 million hectares.
- None of the PFE is currently thought to be under SFM.
- The existing protection PFE comprises less than 3% of the country's forests.
- The UN Security Council imposed an embargo on the export of timber from Liberia in 2003 and it remains in force. The embargo was designed to minimize the extent to which revenues from timber exports contributed to private militias.
- In the past, the Liberian forestry sector has generated up to a quarter or more of GDP, but this has declined due to the embargo and the general disarray of the sector.
- There are few or no reliable inventory data available to facilitate forest management.
- The Forest Development Authority (FDA) is responsible for overseeing the forestry sector, but it is seriously under-resourced.
- The FDA has recently attempted to review concession agreements and decide which are legitimate, a difficult task since many files were lost or destroyed during the civil war.
- There is strong support across a range of stakeholders for community-based forest management and greater benefit-sharing with rural people.
- No silvicultural system has been devised for Liberian forests other than a selective logging regime. The prescribed felling cycle of 25 years is relatively short.
- Much of the timber-processing capacity and other infrastructure was destroyed during the civil war and is yet to be rebuilt.

NIGERIA

There are several obstacles to SFM in Nigeria. These include the discretionary power of government to de-reserve or harvest the forests; the lack of a coherent forest policy; the prevalence of illegal logging and harvesting of NWFPs in most of the high-forest states; chronic under-resourcing of forestry programs and forest management; overlapping responsibilities among federal, state and local governments and excessive bureaucracy; the lack of inter-sectoral coordination; and the overall absence of reliable data on which to base forestry planning and development. Nigeria has a long history of forest management and the formal goal is to achieve self-sufficiency in all aspects of forest production; however, the country, once a significant exporter, is now a net importer of primary forest products and considerable work must be done to achieve this goal.

KEY POINTS

- Nigeria has an estimated PFE of 4.11 million hectares, comprising 2.72 million hectares of natural production forest, 1.01 million hectares of protection forest and 375,000 hectares of planted forest. The PFE covers less than 5% of Nigeria's total land area.
- Data are generally weak and the federal government cannot confirm the accuracy of the data presented herein.
- A forest reserve system was created in 1937 covering 9.7 million hectares (10% of the land area), but much of this is no longer forested.
- The goal of the 1988 forest policy is to expand the forest estate from 10% to 20%, but this has not occurred.
- Insufficient information was available to estimate the area of PFE under SFM.
- The forestry sector is administered at the federal, state and local government levels according to the Nigerian constitution. However, there is a lack of clarity in the mandates of the three levels.
- The main concerns of the federal government are to provide an adequate policy framework for the states and to support afforestation and conservation programs.
- State governments are solely responsible for the management of forest resources and the coordination of forest development activities with local communities.
- Forest production has fallen, creating an imbalance between supply and demand. From its previous status as a significant exporter of forest products, Nigeria has become a net importer.
- The wood-processing industry is characterized by outdated technology, poor recovery and inefficiency.
- A National Forestry Development Program designed to encourage community plantation development is in place.
- A proportion of revenues from timber should go to local communal landowners but, in practice, funds are often diverted, reducing the incentive for local people to protect forests.

TOGO

The main difficulty in protecting and managing forests in Togo is the heavy pressure on them from an impoverished rural population. Indeed, pressure on the existing forest reserves is already high and the Ministry for Environment and Natural Resources, which is in charge of forests, is unable to secure their integrity. Capacity for forest management is low, and improvement is inhibited by a lack of means. This affects many forestry operations: for example, management plans are confined to a few teak plantations, scarcely 300 hectares of new plantations are established annually, and protection against fire is mostly ineffective. A process of decentralization has been initiated, whereby communes, prefectures and regions have responsibilities for the management of the state domain and on environmental issues, but the effects of this process on forest management are yet to be seen.

KEY POINTS

- Togo has an estimated PFE of 368,000 hectares, comprising 41,000 hectares of natural production forest, 313,000 hectares of protection forest and 14,000 hectares of plantations (and additional private plantations outside the PFE).
- At least 5,500 hectares of natural-forest production PFE are considered to be managed sustainably. Insufficient information was available for an estimate to be made of the area of protection PFE so managed.
- Forest reserves and protected areas are not effectively protected or managed, and many are heavily degraded and subject to uncontrolled encroachment, the illegal gathering of NWFPs, poaching and timber theft.
- Forestry training capacity is very limited, and fewer than ten personnel in the forestry administration have higher education in forestry or environmental management.
- There is a lack of a national SFM framework and of forest management standards for natural forests.
- Privately owned, planted forests are now being developed and will complement the teak and other plantations in the PFE.
- However, planted forests in the PFE are small and generally lack proper planning, monitoring and silvicultural follow-up.
- Many villages adjacent to forest reserves have forest committees to manage local interests in the use of forest reserves.

J. Blaser/ITTO

ASIA & THE PACIFIC

*Same legend applies to country maps, but protected areas are not shown

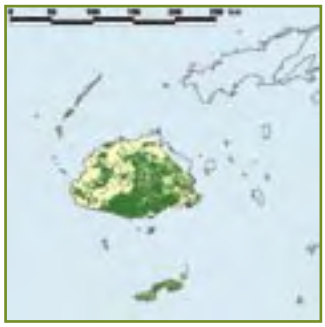
CAMBODIA

Deforestation is expanding rapidly in Cambodia. Nevertheless, the country has a large forest resource with the potential to sustain a robust timber industry and contribute enormously to national development. But the recent history of Cambodian forestry has been turbulent, and the timber sector is in disarray. The concession system has been suspended, yet unauthorized timber production apparently continues. The implementation of recent reforms, and increased law enforcement, are urgently required.

KEY POINTS

- Cambodia's significant reserves of high-value production forests present an important economic resource, the sustainable use of which would be of considerable benefit to the country.
- Cambodia has an estimated 8.10 million hectares of PFE, comprising 3.46 million hectares of natural production forest, 4.62 million hectares of protection forest and 17,000 hectares of industrial timber plantations. However, data on Cambodian forests are often inconsistent and unreliable.
- No part of the production PFE is considered to be under sustainable management; insufficient information was available to estimate the area of protection PFE so managed.
- A significant but unestimated area of forest has been degraded by shifting cultivation, encroachment, the development of agro-industries, illegal logging, over-harvesting and forest fire, as well as by the use of chemicals during war.
- The Forestry Administration was created in 2003, replacing the Department of Forestry and Wildlife; it has responsibility for managing the forest estate, although there may be some overlap in roles with the Ministry of Environment for forests in national parks and related reserves.
- Forest-sector reforms have been developed but are yet to be implemented effectively; the enforcement of existing policies, laws and regulations is weak.
- The management of forest concessions has been poor; the government cancelled some licences and, in 2002, suspended all remaining forest concessions until they fully complied with requirements. One apparent effect of this ban has been to stimulate a significant illegal timber industry.

FIJI



Timber is Fiji's third-largest export commodity and the sector still has considerable growth potential. However, land-use conflicts arising from the pattern of ownership have contributed to the degradation of the forest resource, particularly in natural forest, and have often been viewed as a major constraint to SFM. Other constraints include a lack of convincing evidence for the financial potential of the natural resource (and therefore the continued conversion of forests to various types of non-forest use), an inability to control the standards of logging in natural forests, and inadequate product supply and market research. Fiji's substantial mahogany plantation estate, if well managed and marketed, will be a significant driver of development.

KEY POINTS

- Because of the special conditions of land ownership there is no formal PFE, but some forests have equivalent status; an estimated 354,000 hectares may be regarded as a nominal PFE.
- None of the natural production forest (none of which is considered part of the PFE) is considered to be sustainably managed.
- Generally, the standard of logging is low. At least 55,000 hectares of PFE are estimated to be managed sustainably.
- Fiji has 55,000 hectares of plantation of the high-value species *Swietenia macrophylla* (mahogany) and there are plans to continue to expand this estate. Harvesting began in 2003; how the mahogany resource is managed and marketed will have a large bearing on the future success of the Fijian timber industry.
- Fiji also has a significant softwood plantation resource, which currently supplies about two-thirds of industrial timber.
- With some additions, Fiji continues to use its forest policy developed in 1950 as the basis of forestry, but implementation is guided by the priority now given to forest development based on exports. A review of the policy was completed recently.
- Apart from the conservation and expansion of forest cover, the forest policy focuses mainly on the efficient processing and manufacture of value-added products and training in forest industries.
- Fiji is a net exporter of wood products, including pine chips, sawnwood and wood-based panels. There is a small export trade of high-value finished products. The expansion of the export of these could make a significant contribution to the economy, particularly when mahogany timber is put on the international market.
- The forest area designated as 'protected' within IUCN categories I–IV is 3,000 hectares, although an area of 241,000 hectares has been broadly described as protection forest.

INDIA

In India, state forest departments are custodians of the public forest resource and act as the forest authorities. Timber production is shifting away from natural forests, stimulating the development of community-based approaches. All forest states have set up forest development corporations, which are responsible for production within the public forest estate. Increasingly, some responsibilities for and benefits from the forests are being shared with local communities. For example, joint forest management, which usually involves an agreement between the forest department and a village to jointly protect and manage forest land, has become widespread. Moreover, farmers are becoming more involved in tree-growing, the private sector is participating more in forest management, and partnerships between forest-product manufacturing companies and local farmers are developing. However, several components of SFM are still missing, including an accurate inventory of resources, the classification of land by capability and function, efficient utilization and sustained investment.

KEY POINTS

- The estimated 39.1 million hectares of India's natural-forest PFE comprises 13.5 million hectares of production forest and 25.6 million hectares of protection forest. Not all of this PFE is tropical.
- There are also 32.6 million hectares of planted forest in the PFE.
- While there was a net positive change in the area of forest during the 1990s, natural forest continues to be lost or degraded.
- In production forests, India follows a system of preparation and periodic revision of working plans.
- Information on the extent and management of forests is fragmentary at best, and often unreliable.
- Nevertheless, it is estimated that at least 4.80 million hectares of natural-forest production PFE (tropical and non-tropical) are being managed sustainably; insufficient information was available to estimate the area of protection PFE so managed.
- The condition of several of the protected areas is poor because of fire, grazing and inadequate management.
- Forest management is becoming increasingly decentralized and community-based approaches are becoming more common.
- A national afforestation program was initiated in 2000 and operates at the level of forest divisions within states through forest development agencies and village forest committees.
- India's wood-based industries face a serious scarcity of raw materials and, increasingly, they depend on non-forest and external sources. The country has become a major importer of tropical timber, particularly logs.

INDONESIA

Indonesia's forest resource base is still vast, but it faces many threats that put its long-term sustainability in jeopardy. These include illegal logging; forest fires; deforestation through land encroachment; wasteful logging and processing; structural deficiencies and inefficiencies in forest industries; the indebtedness of forestry enterprises; unsettled land claims; inefficiencies in public forest administration, in particular in the process of decentralization; an inadequate base of human resources; inadequate monitoring and evaluation; and a lack of effective governance. On the other hand, significant progress has been made in the establishment of certification systems and information on the management of concessions is becoming increasingly available.

KEY POINTS

- The estimated 68.5 million hectares of Indonesia's natural-forest PFE comprises 46.0 million hectares of production forest and 22.5 million hectares of protection forest. There are also about 2.50 million hectares of productive timber plantations.
- The security and integrity of the PFE are affected by several factors, of which forest fire and encroachment are among the most important.
- Illegal logging in the PFE (both production and protection) is widely held to be a major problem.
- The Ministry of Forestry is undertaking a review of concessions and their compliance with the Indonesian C&I. This process has shed light on the status of management in the production PFE.
- It is estimated that at least 2.94 million hectares of natural-forest production PFE and 1.36 million hectares of protection PFE are being managed sustainably.
- Some 12% of the land area of Indonesia has been designated as protected areas. However, information on the management of a large part of the protection PFE is scarce.
- Forestry is undergoing a process of decentralization that has proven difficult partly because of a lack of capacity at the decentralized levels of administration and partly because of disharmony in the policies of central and local governments.
- C&I for SFM have been developed for the country and a certification regime designed. About 275,000 hectares have so far been certified.
- The prescriptions for the management of production forests are conceptually sound but implementation has been weak. Over-capacity and structural imbalances in the wood-processing sector have exacerbated the situation.

MALAYSIA

Malaysia's forests are generally well managed, although there are differences between Peninsular Malaysia, which has the strongest approach, and Sabah and Sarawak; however, all regional forestry administrations are committed to achieving SFM. The forest sector plays an important role in the Malaysian economy and is a significant employer. Already a major producer of value-added, wood-based products in the world market, this part of the sector is likely to continue to grow. A large part of its furniture manufacturing is based on rubberwood, which is grown in plantations, while much of the harvest from natural forests is still exported as plywood, sawnwood and logs. Well-organized and resourced forestry administrations at both federal and state levels have the capacity to ensure that concessionaires adhere to prescribed practices and to oversee the long-term management of the resource.

KEY POINTS

- Malaysia's PFE comprises 11.2 million hectares of natural production forest, 183,000 hectares of plantations and 3.21 million hectares of protection forest.
- At least 4.79 million hectares of natural-forest production PFE are estimated to be under SFM; the estimated area of protection PFE so managed is 3.21 million hectares.
- Deforestation within the PFE is insignificant, but there is degradation in some forest areas.
- Malaysia is a federation and forestry is under the jurisdiction of the states. Thus, the implementation of the national forest policy requires a cooperative approach by the state and federal authorities, which is done primarily through the National Forestry Council.
- At the federal level, the division of responsibilities between the Ministry of Natural Resources and Environment and the Ministry of Plantation Industries and Commodities poses a coordination challenge.
- Managing relations between indigenous communities and concession companies needs further attention.
- All timber harvesting and related management operations are carried out by contractors operating on the basis of either a long-term logging agreement (concession) or a short-term licence.
- In Sabah, FMUs of 100,000 hectares each have been established and 100-year forest management agreements offered to forestry companies.
- Certification of forest management is well advanced in Peninsular Malaysia and is expected to increase in Sabah and Sarawak.
- There is a well-established protected-area system in place covering 16.3% of the total land area. Nevertheless, there is a need to establish better coordination between the federal government and the states in wildlife management and environmental conservation.

MYANMAR

Myanmar once boasted an exemplary system of forest management, particularly in its large area of teak forests, but in recent decades there has been significant deforestation and forest degradation. Timber production almost doubled in the ten years to 2003, and the Forest Department lacks sufficient resources to fully implement the silvicultural system or enforce regulations, particularly in remote border areas. Community forestry also faces a number of challenges, such as the lack of decentralization in forestry administration. Nevertheless, about half the country is still forested and SFM remains within reach, given the surmounting of political, administrative and economic obstacles.

KEY POINTS

- Myanmar has an estimated 13.0 million hectares of natural tropical forest in its PFE, of which 9.70 million are designated for production and 3.30 million for protection. Myanmar also has about 710,000 hectares of planted forests, 35% of which are teak.
- Many of Myanmar's forests are becoming degraded, exacerbated by a lack of law enforcement, particularly in remote regions.
- At least 290,000 hectares of semi-natural teak forest in the production PFE are being managed sustainably, but insufficient information was available to assess the management of the bulk of the production PFE. Nor could an estimate be made of the extent to which the protection PFE is so managed.
- A well-tested silvicultural system exists for Myanmar's teak forests, but the extent to which it is being implemented is unclear.
- The Ministry of Forestry has primary responsibility for implementing the national forest policy, which was instituted in 1995.
- Some of the most significant obstacles in the way of implementing SFM are institutional. These include chronic budget shortages affecting the Forest Department, very limited private-sector involvement, insufficient well-trained personnel, and a lack of effective participatory processes.
- Total production of industrial roundwood was an estimated 4.24 million m^3 in 2003.
- Myanmar has established protected areas and prepared plans for expanding the protected area system and for improving biodiversity conservation, but no information was available on implementation.

PAPUA NEW GUINEA

Two-thirds of PNG is under forest cover and the official timber harvest is well below the estimated national sustainable timber yield. On average, each citizen has rights over about 6.4 hectares of forest. However, the majority of people still live in extreme poverty. The challenges are substantial if SFM is to be achieved. Key among them would appear to be: reducing the social and cultural disruption of logging; increasing the benefits to local development of forest management; and increasing the allocation of resources to the monitoring of logging activities and the implementation of forest policies at the national level.

KEY POINTS

- Customary land ownership is guaranteed by the PNG constitution and is the key factor influencing the use of the forests; 97% of the land is held as communal or clan commons.
- The determination of a PFE is difficult in PNG given its land-tenure system. Nevertheless, ITTO estimates that the country has about 10.5 million hectares of forest that might be considered permanent; these include 8.7 million hectares of forest over which timber rights have been acquired (production PFE), 1.7 million hectares allocated for protection and about 80,000 hectares of timber plantations.
- At least 1.5 million hectares of natural-forest production PFE are estimated to be managed sustainably. No estimate could be made of the extent to which the protection PFE is so managed.
- The PNG Forest Authority was established in 1991 by the Forestry Act as a statutory corporation with regulatory and administrative responsibility for the management of the country's forests.
- A 'landowner company' concept was developed as part of the 1979 national forest policy in order to increase national participation in forestry. However, this has not been wholly successful.
- PNG is a major exporter of tropical logs, shipping out an estimated 2.02 million m^3 in 2003 to China, Japan and other mostly Asian destinations.
- The government collects revenues from a log export tax and a reforestation levy, while resource owners receive a royalty on timber harvested (10 kina per m^3) and other levies and premiums.
- Customary landowners participate in the processes by which the Forest Authority purchases timber rights but are not much involved in the subsequent management and development of the resources.

PHILIPPINES

The Philippines has lost a substantial part of its natural forest, and timber production has declined dramatically over the last three decades. Many of the problems associated with the large-scale destruction of the forest resource can be linked to a combination of land and concession tenure issues, and the lack of ability or will to enforce the conditions of the concessions. Moreover, many of the rural poor did not have land tenure and often settled illegally on forest land. Considerable efforts have recently been put into the development of community forestry, but the success of this approach in restoring the country's degraded landscapes, particularly on steep slopes, and in increasing rural incomes, remains to be proven.

KEY POINTS

- An area of 15.9 million hectares has been defined legally as forest land (land with greater than 18% slope), but the estimated natural-forest PFE under actual forest cover is only about 6.24 million hectares, comprising 4.70 million hectares of production forest and 1.54 million hectares of protection forest. There are also an estimated 274,000 hectares of plantation.
- At least 76,000 hectares of natural-forest production PFE are estimated to be sustainably managed. No estimate could be made of the extent to which the protection PFE is so managed.
- While commercial-scale concessions (using what are called 'timber licence agreements' – TLAs) have been the main mechanism for allocating logging rights in the past, forest management is now being conducted largely under community-based approaches; TLAs will be completely phased out by 2006.
- The contribution of the industrial forest sector to the national economy has declined dramatically in recent years and stood at only 0.05% of GDP in 2002.
- On the other hand, an estimated 18–20 million people are dependent on forest lands (not necessarily forested) for subsistence uses and traditional and customary lifestyles.
- The Department of Environment and Natural Resources is the government agency responsible for forest management and protected areas; a degree of administrative decentralization has been pursued in recent years.
- The Philippines is a net importer of timber.
- The Philippines has a large number of endangered species. In its protected-area network of 6.85 million hectares, the estimated extent of forests is 1.54 million hectares.

THAILAND

Forestry in Thailand is constrained by several factors. Coincident with Thailand's rapid economic growth in the 1980s and 1990s, its forest resources became severely depleted. Logging in natural forests has been banned, but the forests remain under pressure from encroachment, illegal logging, fire and other agents. The Royal Forest Department, the government agency responsible for forests, has a long history of forest management and remains reasonably well resourced. Plantations, especially of rubberwood, and imports are now supplying the country's thriving downstream-processing timber industry. The huge importance of tourism to the Thai economy provides an excellent incentive for strong measures to improve forest protection.

KEY POINTS

- The PFE is estimated to be 10.1 million hectares, of which 1.87 million is production PFE (all plantations) and 8.26 million protection PFE.
- An estimated 50% of the reported PFE in 1991 has been converted to agriculture, settlements and other uses.
- A logging ban has been in place in natural forests since 1989, after disastrous flash floods; however, it has not been sufficient to stop forest loss and degradation.
- Illegal tree-cutting in natural forests remains a problem.
- At least 522,000 hectares of protection PFE are being managed sustainably, but generally little information is available on the status of management in forested protected areas.
- Forests are owned by the state. There is an ongoing debate in Thailand about the rights of traditional and local communities to use and manage forests, including in protected areas.
- A draft Community Forestry bill has been under development and debate in Thailand for more than a decade.
- Timber production in Thailand has shifted from natural forests to planted forests, particularly teak and rubberwood, and non-forest sources of wood, supplemented by imports.

VANUATU

No formal PFE has been created in Vanuatu because all forests are under customary ownership. The role of the national government in forest management is in policy development, planning, protection, silvicultural principles and guidelines, and the supervision of logging companies. However, to date it has not been possible to implement a forestry regime that operates on the basis of long-term forest management plans.

KEY POINTS

- All lands, including forests, are customarily owned.
- There is, therefore, no formal PFE. Theoretically, a future PFE could amount to 127,000 hectares, of which 117,000 would be natural-forest production PFE and 8,340 protection PFE; there are about 2,100 hectares of plantations.
- Production forests are not covered by long-term management plans and therefore cannot be considered sustainably managed. No estimate could be made of the area of protection PFE under SFM.
- The current annual harvest of about 30,000 m^3 is well below the estimated sustainable yield (68,000 m^3) from the 117,000 hectares of natural forest deemed suitable for production forestry.
- The national forest policy contains an indicative program of action in all aspects of the management of Vanuatu's forests which, if fully implemented, would lead to a significant improvement in forest management.
- The Department of Forestry under the Ministry of Agriculture, Forestry and Fisheries has responsibility for administering and managing the forest. The personnel, funds and facilities available to it are inadequate to carry out these functions.
- The four FMUs (corresponding to the four main islands) are not covered by long-term management plans, although coupes are usually covered by harvesting plans based on the Code of Logging Practice.
- The protected-area system of Vanuatu is very small; about 3% of the mid-to-high forest and 0.7% of the low forest are represented in protected areas.

J. Blaser/ITTO

LATIN AMERICA & THE CARIBBEAN

*Same legend applies to country maps, but protected areas are not shown

BOLIVIA

Bolivia has made remarkable progress towards SFM over the past decade. It has launched and implemented a comprehensive and ambitious reform of its forest sector and embarked on a major process of conferring property rights for natural forests to indigenous communities. Through an overarching political decentralization process, responsibilities and monitoring functions are being decentralized to municipalities and rural communities; this has generated some tensions. Forest certification has become a major factor in the introduction of SFM practices, and Bolivia has the largest area of certified natural forest in Latin America. However, the reform process faces many obstacles; full implementation still needs time and continuous and strong political will.

KEY POINTS

- The PFE comprises an estimated 17.0 million hectares of production forest and 14.7 million hectares of protection forest. A further 16.3 million hectares of forest have not yet been allocated.
- There remain huge, partly unexploited forest resources in the Amazon Basin.
- The estimated area of natural-forest production PFE under sustainable management is at least 2.18 million hectares; the estimated area of protection PFE so managed is at least 2.38 million hectares.
- The Ministry of Sustainable Development and Planning has overall responsibility for the national forestry regime.
- The Forestry Superintendency oversees adherence to the forest law.
- Territorial grassroots organizations are gaining increasing recognition in the new structure for the use of forest resources, but tensions remain.
- A well-established wood-processing industry, good professional knowledge and the establishment of certified forests provide a good basis for SFM. But access to some markets for certified timber remains problematic and the lack of a significant price premium may make it difficult to maintain high standards.
- An auditing system is in place; as it becomes operational, a clearer picture of the overall situation in production forests will emerge.
- Land tenure and, in particular, the absence of clearly defined property rights are key limitations to attracting investments to the Bolivian forest sector and, consequently, to achieving SFM.
- There are ambitious plans for the creation and management of protected areas, but these still need to be acted upon. The status of their management is mostly unclear.
- Illegal logging and illegal crops are constraints to the full adoption of SFM and the effective conservation of protected areas in many localities.

BRAZIL

Brazil is endowed with an incredible abundance and variety of flora and fauna; it has more known species of plant than any other country. The Amazon represents the single largest tract of tropical rainforest and is still 86% intact; in contrast, the Atlantic forest covers less than 7% of its original area (although it still harbours a wide variety of biodiversity). Some of the most significant problems facing forestry in Brazil are: poor infrastructure; the remoteness of many forests from centres of commerce and control; the weak competitiveness of SFM as a land-use; the lack of competitiveness of the tropical timber industry; lack of full-cost pricing and the abundant availability of low-cost timber; a serious shortage of management skills; and a lack of enforcement of laws and regulations. To date, the high level of biodiversity in the Amazon has not been a development asset. Given that development will continue in the region, probably at an accelerated rate, there is an urgent need to find ways of using the biodiversity resource in financially remunerative and sustainable ways. Government has been working to address institutional barriers to SFM and a number of recent initiatives offer hope that the area of production PFE in the Amazon under SFM will expand significantly in the future.

KEY POINTS

- Brazil is a forest-rich country with a tropical-forest PFE of 370 million hectares. Despite deforestation in certain parts, there are still huge forest resources in the Amazon region.
- An estimated 1.36 million hectares of natural tropical forest production PFE are being sustainably managed; insufficient information was available to estimate the area of protection PFE so managed.
- Vast areas of the Amazon are currently under no threat from deforestation or other significant human-induced disturbance due to their remoteness.
- Brazil has successfully raised large-scale industrial forest plantations through private investment to ensure a sustainable supply of raw material.
- The majority of the production forest is under private ownership, although ownership and tenure disputes are a major problem.
- A wide range of policies, strategies, laws and regulations have been developed to facilitate forest administration and to achieve SFM.
- Institutional weaknesses and an inadequate capacity for enforcing policy and policy instruments have been a significant constraint.
- Only a small portion of the forest is under management plans; the bulk of wood production, though derived from private sources, is reported to be unauthorized because it is not based on official approvals. Harvests are often not based on any SFM criteria.
- A number of companies have come forward for the voluntary certification of their forest management operations. However, the financial competitiveness of SFM in natural forests with alternative land-uses is often low, leading to significant deforestation and threatening the long-term viability of sustainably managed natural forests.

COLOMBIA

The overall forest management situation in Colombia is not clear. On the one hand, advances have been made at the policy level in the priority activities identified under ITTO's Objective 2000, including the approval of a forest policy, new forestry legislation and the formulation of forest management plans. Forests are administered within the wider context of environmental management, and existing policy goals emphasize protection and conservation functions as well as forest restoration and forest land rehabilitation. However, there is as yet no clear designation of the PFE and inadequate control of forest resources on the ground, in particular in the Amazon region; nor are silvicultural methods applied in natural production forests.

KEY POINTS

- Colombia has a rich and largely unexploited forest resource in the Amazon Basin.
- Indigenous communities own 22.1 million hectares of forest, mostly in the Amazon, and Afro-Colombians about 5.4 million hectares, mainly in the Pacific region.
- The PFE is estimated to be 14.5 million hectares – although this has not been designated officially – of which 5.65 million hectares is production PFE and 8.86 million hectares protection PFE.
- The estimated area of natural-forest production PFE under SFM is at least 200,000 hectares. Little information is available on the status of forest management in the protection PFE.
- There is a well-established and well-developed program to establish planted forests. A new forest law awaiting presidential approval would promote an increase in plantations to about 1.5 million hectares.
- There is a lack of forest law enforcement and transparency in the application of laws that deal with forest management. Because of armed conflict, there is little long-term management of or control over resources.
- No specific standards have been established for large-scale production forestry and there are no concession policies.
- However, the new forest law awaiting presidential approval seeks to make major reforms to the management of natural forests.
- National institutions appear to be under-resourced and unable to maintain an effective presence in the field.
- There is a well-established protected area system and a well-established system to monitor biodiversity.
- The wider role of forests in providing environmental services is recognized.

ECUADOR

SFM is a long way from being achieved in most of Ecuador's PFE. National forestry institutions remain weak. One reason for this is that there has been no organizational or staffing continuity in the ministry responsible for forests, and also a lack of clarity in the decentralization process. On the positive side there is a declared political willingness to designate state forests to communes, indigenous communities, settlers and other interested groups if they can prove that they have the capacity to manage and conserve forest resources. Nevertheless, there is little sign of consistent progress towards SFM.

KEY POINTS

- Information on the forest sector is quite often poor and contradictory.
- The PFE is estimated to be 7.56 million hectares, of which 3.26 million hectares (including 164,000 hectares of plantations) may be regarded as production PFE.
- At least 101,000 hectares of natural forest in the production PFE are under SFM. Insufficient information was available for an estimate to be made of the extent of protection PFE so managed.
- Native forests are under threat mainly because of the expansion of the agricultural frontier near the coast and in the Amazon area.
- There is strong pressure on the forest from informal and illegal operators resisting change towards SFM, and illegal logging is widespread in all three forest regions.
- Many accessible forests are now degraded and secondary.
- The capacity to implement the national forest program and other forest-related policies and laws is low.
- In many cases, and despite new legislative provisions, forest tenure remains unclear.
- There is a discrepancy between actual harvesting practices and forestry regulations. Harvesting is generally unsustainable, and legal provisions for harvesting operations are unrealistic and may push forest-users towards illegality.
- Institutional weaknesses have created bureaucracy and additional costs, which have been transferred to the private sector. High transaction costs stimulate informality and corruption and increase timber volumes from illegal sources.
- The effective management of protected forests is inhibited by a lack of funding, a lack of sufficient political support to the forest sector and, in some areas, disputes over tenure.

GUATEMALA

Forests play an important role in Guatemala. They provide a source of income and household products for many poor and a resource for the commercial timber sector. However, SFM has been hindered in the past by, among other things, a protracted civil war, and deforestation was widespread. As the lowland rainforests of the Petén are also opened up, the sector is attempting to improve forest management. Great strides are being made by both private operators and communities, to the extent that more than half the production PFE is now considered to be under SFM.

KEY POINTS

- The PFE comprises an estimated 1.14 million hectares of natural-forest production forest, 71,000 hectares of plantations and 1.24 million hectares of protection forest.
- At least 672,000 hectares of production PFE are estimated to be under SFM; insufficient data were available to estimate the area of protection PFE so managed.
- The system of protected areas and the monitoring of biodiversity have both been long established. However, information on the status of their management is lacking.
- A large part of the natural forest estate in the highlands has been over-harvested, and development is proceeding rapidly in the Petén.
- Enormous efforts have been made since the end of the civil war to reorganize the control and management of forest resources; this has included the decentralization of management and monitoring. But support for existing community forest management institutions remains weak.
- There is long-standing experience in the management of conifer forests. The recent implementation of a well-defined concession management policy in moist forest areas also constitutes a solid basis for SFM.
- Forest management certification has been widely introduced with the support of international donors in the community concessions in the Petén, but its long-term prospects will depend on its financial viability once donor support is withdrawn.

GUYANA

Guyana has a broad forest resource base and large growing-stock of hardwood timber. It has introduced and implemented a well-designed forest management and control system in its timber production forests. However, there is a gap between the well-functioning core staff of the Guyana Forestry Commission and the industry that has to implement forest management in the field. Political and social uncertainty, lack of secure tenure, lack of understanding and awareness, lack of skilled labour, outdated management practices and, recently, a difficult economic environment have imposed major challenges for the achievement of SFM. Progress is being made in improving forest harvesting practice.

KEY POINTS

- Guyana's forests are still largely intact.
- The PFE comprises an estimated 5.45 million hectares of production forest and 980,000 hectares of protection forest. A further 7.35 million hectares of state forest have not yet been allocated.
- Uncontrolled gold mining is a significant cause of forest degradation and environmental pollution.
- At least 520,000 hectares of production PFE and 243,000 hectares of protection PFE are being managed sustainably.
- A detailed management provision and control system has been elaborated but is inadequately implemented.
- Progress is being made in the training of logging operators.
- The area of totally protected forests is low and there is not enough control and management in protected areas.
- The national forest policy is widely accepted as a sound guide for the forest sector but is yet to be fully implemented.
- A new forest law, which would establish a forest concession system in place of the current timber sales agreements and wood cutting leases, has been drafted but is yet to be enacted.

HONDURAS

Present management of the broadleaved natural forests in Honduras is sometimes more a matter of extracting only the most valuable species than of silvicultural management. Silvicultural and conservation measures described in forest management plans are often not respected and there is a risk that logged-over areas will become degraded. Illegal logging is widespread and nourishes an informal wood sector that competes with legally produced timber and timber products. Protected forest areas are not clearly delimited and there are difficulties in protecting remote forest areas from forest degradation and deforestation. On the other hand, recent efforts have been made to overcome illegal activities and corruption and to strengthen institutions in order to integrate forests into sustainable development; the wider importance of forests for goods and environmental services has been recognized and the forest law is being revised. The challenge will be to translate a good theoretical framework of law and policy into effective implementation in the field.

KEY POINTS

- The PFE comprises an estimated 1.59 million hectares of production forest and 1.60 million hectares of protection forest.
- At least 187,000 hectares of production PFE are being managed sustainably. Insufficient information was available to estimate the area of protection PFE so managed.
- The broadleaved moist forest could make a larger contribution to sustainable development in Honduras, although the potential for timber production is not known.
- Management norms for the pine forests have been formulated and are being implemented in some forests; prescriptions for the sustainable management of the moist forests also exist but are less clear.
- Illegal logging is thought to be prevalent.
- The extent and status of protected forest areas are not clear. Few data are available on the level of protection afforded by forested protected areas.
- Many protected areas are threatened by land conversion.
- A revision and modernization of forest legislation was started in 2002 as part of the Honduras Forestry Agenda, but the new law is yet to be enacted.
- Forest tenure, particularly on public land, is subject to dispute; large tracts of moist forest have no clear ownership status.
- Generally, the forest administration lacks the finance and staff necessary to adequately enforce the law and manage the forests.

MEXICO

The management of Mexico's forests differs greatly between the pine and oak forests in the temperate zone, the forests in subtropical regions and the moist tropical forests in the south. The rate of deforestation has apparently slowed but is still high. Over-harvesting and illegal harvesting of forest resources is widespread (although less so in the tropics than in the temperate zone); they exceed sustainable levels in many areas. Community management is the major form of forest management but, in many cases, communities are not equipped to manage their forests sustainably. Some of the problems that obstruct progress towards the sustainable management of the closed forest areas in communes (*ejidos*) include a lack of resources and know-how for the economic use of forest resources and discrepancies in the objectives between communities, the private sector and forest authorities. On the other hand, good progress has been achieved in forest certification, although much of this to date has been outside the tropics. Moreover, the government has taken steps to address shortcomings in the sector and is attempting to combat illegal logging and fire.

KEY POINTS

- The rate of deforestation has apparently slowed but is still high.
- Mexico has not formally designated a PFE. ITTO estimates that about 13.6 million hectares can be considered to constitute a tropical PFE, comprising 7.88 million hectares of natural-forest production PFE, 5.60 million hectares of protection PFE, and 100,000 hectares of industrial timber plantations.
- The area of natural tropical production PFE under SFM is estimated to be at least 111,000 hectares, corresponding to the total area of certified natural tropical forest; insufficient information was available on the forest management outside these areas for an estimate to be made for the wider tropical production PFE.
- No data were made available on the status of management of Mexico's tropical protection PFE.
- About 8,500 *ejidos* and local communities own an estimated 80% of Mexico's forests. About 15% is owned privately and 5% is national land.
- A forest law enacted in 2003 governs the management of production forests, including in *ejidos*. Some states have also enacted their own forestry/environmental laws.
- The low financial viability of natural forest management appears to be inhibiting the uptake of SFM in some *ejidos*.
- The national government has taken steps to combat illegal logging and forest fire, but both these problems are still prevalent.
- The production potential of the natural forests in the tropics is an estimated 1.4 million m^3, much more than current (official) production.
- Continuing conflicts over land-use are apparently inhibiting SFM in some areas.
- Some forests are classified as protected areas but are privately or communally owned, and their protection status is unclear.

PANAMA

The management of Panama's PFE is problematic. Concessions have been suspended, and smaller-scale logging is being carried out with little oversight and without detailed management plans or silvicultural prescriptions. The timber industry is in a poor state, with antiquated equipment and an under-supply of legally produced timber. Large areas of forest are classified as protected areas; nevertheless, they are generally not managed or controlled effectively. Forest plantations are being developed, mainly on private properties. Forest management appears strongest in the watershed of the Panama Canal.

KEY POINTS

- The PFE comprises an estimated 350,000 hectares of natural production forest and 1.58 million hectares of protection forest. A further 1.60 million hectares of forest have not yet been allocated.
- No production PFE is considered to be under sustainable management. The estimated area of protection PFE under SFM is estimated to be at least 180,000 hectares, comprising the core protection area of the Panama Canal.
- The forest law recognizes the rights of indigenous communities to manage forests in indigenous reserves (called *comarcas*).
- The National Environmental Authority has insufficient human and financial resources to carry out the field-level monitoring and control of forestry operations necessary to ensure adherence to forest-related laws and regulations.
- The private sector and civil society have been minimally involved in the preparation of SFM policies and strategies.
- There is a lack of information on the silviculture of the country's natural forests and an apparent lack of research and training capacity.
- Most of the protected areas and protection forests are not well delimited and are threatened by encroachment.
- Illegal logging is widespread in the moist forest area, even in protected areas. This is a significant impediment to long-term SFM.

PERU

Over the past three years, Peru has taken significant steps towards integrating the forest sector into the broader macroeconomic objectives of sustainable development. The new forestry and wildlife law embodies the forest policy of the country and prescribes several options for SFM and reforestation. An independent forest-control mechanism has been established and a broad coalition of stakeholders from the public and private sectors and civil society works together to develop joint approaches to SFM. Nevertheless, Peru still faces some major challenges in enforcing and applying regulations and planning instruments in the country's vast Amazon forests.

KEY POINTS

- Peru has a large forest resource with good potential for sustainable management.
- The PFE comprises an estimated 24.6 million hectares of natural production forest, 200,000–300,000 hectares of plantations and 16.3 million hectares of protection forest. A further 19.1 million hectares of forest have not yet been allocated.
- At least 560,000 hectares of production PFE and 1.54 million hectares of protection PFE are being managed sustainably. Moreover, large areas of the protection PFE, even if not formally under SFM, are under no imminent threat due to their remoteness.
- 59,600 hectares of natural forests have been certified in indigenous territories.
- The deforestation rate of about 269,000 hectares per year is one of the highest in the region; it is caused largely by the influx of settlers to the Amazon region and subsequent clearance for agriculture.
- A new forestry and wildlife law and its regulations were approved in 2000/2001, a national forest strategy was adopted in 2004 and a national reforestation plan was prepared in 2005.
- The forestry and wildlife law is a bold initiative to promote SFM; its effective implementation will probably require substantial investments in human resources in both the public and private sectors.
- Among other things, the new law sets out the parameters of a new concession system.
- An independent forest control and supervision agency has been created to oversee the implementation of this new system.
- The financial viability of SFM will depend in large measure on the prices that can be obtained for a range of lesser-known species.
- There are many informal forest operations, especially linked to caoba and cedro, but these species are becoming economically scarcer. Harvesting pressure for such timbers is increasing both in protected areas and in forests belonging to indigenous communities.
- The capacity to implement SFM at the field level is low, although considerable efforts are being made to address this through training and technical assistance.

SURINAME

Suriname has a large forest resource base that contains a sizeable growing stock of valuable hardwood timber. However, its forest-management institutions are not yet equipped to oversee the introduction of SFM in a commercial sector that has materialized only in the last decade or so. In addition, insecure tenure and recent difficult economic circumstances jeopardize the implementation of SFM.

KEY POINTS

- More than 80% of Suriname is forested, and very little deforestation is taking place.
- The PFE comprises an estimated 6.89 million hectares of natural production forest and 4.43 million hectares of protection forest. A further 2.59 million hectares of forest have not yet been allocated.
- As of late 2003, 67 logging concessions had been allocated over a total area of 1.74 million hectares.
- A coherent forest policy and legislation is under development, and the 1992 forest law is currently being revised.
- Current requirements for forest management plans do not have a strong focus on SFM.
- No area of either production or protection PFE has been identified in this report as under sustainable management. Nevertheless, most of the PFE is intact due to a lack of development pressure.
- Suriname's forests produce an estimated 160,000 m^3 of industrial roundwood per year; the sector is a significant employer.

TRINIDAD & TOBAGO

Trinidad and Tobago's strong tradition in forest management means that SFM has a good footing in the country; however, significant institutional and policy weaknesses could see the deterioration of this tradition unless remedial measures are taken. Both natural forests and plantations are affected by over-harvesting, encroachment, fires and other forms of damage, although the extent of these has not been quantified and police patrols probably help reduce illegal activities. There appear to be few social conflicts over forest use, and stronger community involvement in forest management has been foreshadowed.

KEY POINTS

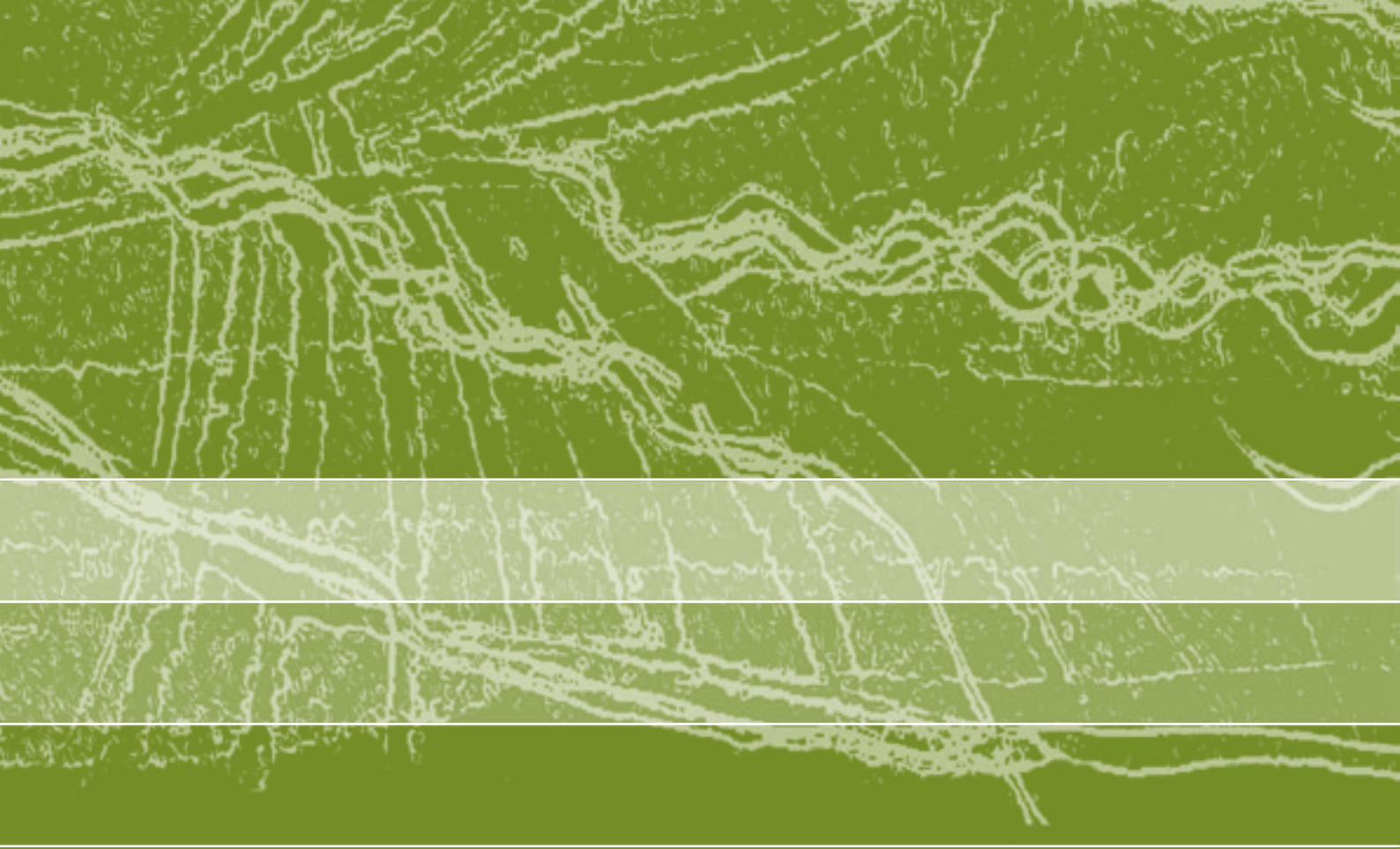
- The PFE comprises an estimated 142,000 hectares of production forest (including just over 15,000 hectares of plantations) and 59,000 hectares of protection forest.
- Most timber production derives from planted forests; the main species are teak and Caribbean pine.
- At least 15,000 hectares of natural-forest production PFE are being sustainably managed.
- The country has yet to develop a workable set of C&I for SFM suited to its special needs.
- Individually licensed loggers are able to cut a specified number of trees or volume as defined by the Forestry Division. In many cases this may have amounted to a 'logger's selection system'.
- Trinidad and Tobago imports round logs and squares from neighbouring Guyana and Suriname for local processing; it is a net importer of timber.

VENEZUELA

Venezuela still possesses vast unexploited forest resources in its two largest states of Bolivar and Amazonas. Relatively modest logging concessions and cutting permits have been granted over the past 35 years. Instead of increasing the harvesting of natural forests, plantation forestry has been developed for many years. Today, much of the domestic need for industrial wood is met by planted forest. The country's forest-related laws contain strong environmental provisions, and a large proportion of its territory is in designated protected areas (although in some places under tenurial dispute by indigenous communities). However, there is a gap between the legal provisions and their implementation in the field. SFM for production and conservation has not yet been fully achieved; the enforcement of forestry regulations is considered to be far from optimal, and illegal logging, hunting and encroachment are reportedly widespread. Nevertheless, a basis has been laid for the development of SFM and effective forest conservation.

KEY POINTS

- The PFE comprises an estimated 13 million hectares of natural production forest and 20.6 million hectares of protection forest. There is also a substantial plantation estate (about 863,000 hectares).
- It is estimated that at least 480,000 hectares of the natural-forest production PFE is managed sustainably; insufficient information was available to estimate the extent of the protection PFE so managed.
- The forests north of the Orinoco River are heavily degraded and encroached. South of the Orinoco River, Venezuela still has extensive and timber-rich forest resources with good potential for SFM.
- The monitoring of forest resources and implementation of forest management are both deficient, particularly in more remote areas.
- There is a lack of clarity in administrative roles and responsibilities for forests, in particular between the Ministry of Environment and Natural Resources, the Ministry of Agriculture and the Ministry for Energy and Mining.
- The new national forest policy is not yet finalized or backed up with effective legislation, and the forest concession policy lacks clarity.
- Wood production is shifting from natural forest to plantations and to regulated forest concessions with management plans.
- Despite regulations to the contrary, logging in natural forests concentrates on the most valuable timber species.
- The long-term viability of the protection PFE depends on the continuous provision of financial resources and acceptance by local stakeholders.



This special edition of the *Tropical Forest Update* summarizes *Status of Tropical Forest Management 2005*, a report by the International Tropical Timber Organization. It discusses the nature and assesses the reliability of available data; determines, as far as these data allow, the extent of the permanent forest estate in each ITTO producer member country; examines, for each country, the policy and institutional settings for the adoption of sustainable forest management; estimates the area of forest that is actually managed sustainably for production and protection; and discusses how the situation has changed since 1988, when the first survey was conducted, and the significance of these changes for the future. It finds that significant progress has been made towards the sustainable management of natural tropical forests, although the proportion of the total permanent forest estate under such management is still very low.

The full report can be obtained from ITTO (address on page 2) or downloaded at www.itto.or.jp

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