

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.

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

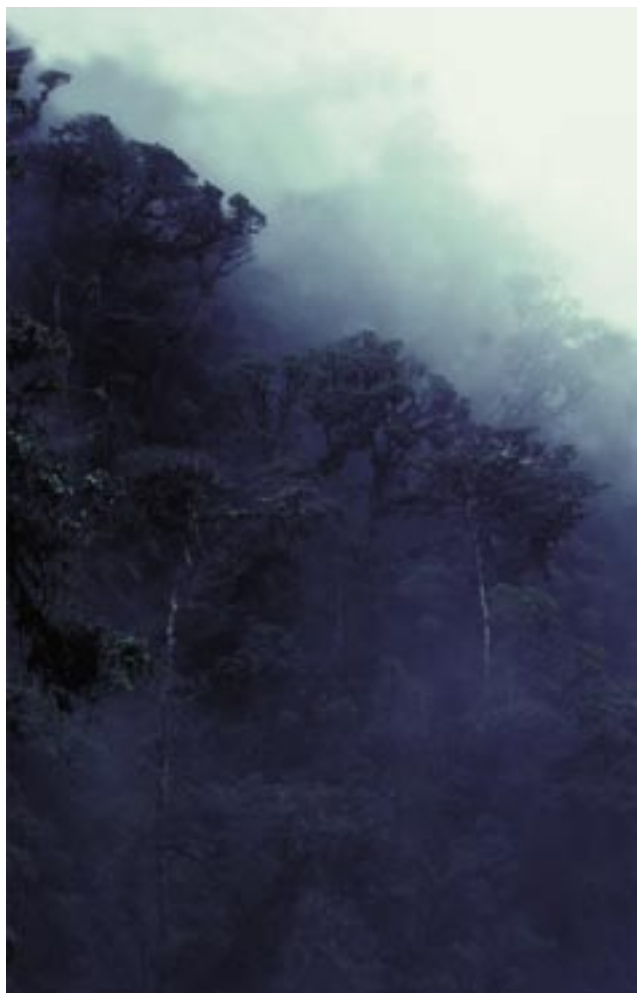
Sustainable forest management

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



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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.

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%).

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



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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