

PHILIPPINES



*For legend see page 58

Forest resources

The Republic of the Philippines lies to the east of continental Asia between the South China Sea and the Philippine Sea, extending from 5° to 20° north of the equator and comprising over 7,000 islands. It has a land area of 30 million hectares and a population of 82 million people. Most of the land in the Philippines is mountainous; 53% of the country is classified as uplands, being 18% or more in slope. While close to 16 million hectares of the land is categorized as forest land, estimates of the actual forested area in the country include 5.4 million hectares^a, 5.79 million (FAO 2005) and 7.2 million hectares^a, of which 0.8 million hectares might be regarded as primary forest^a.

Forest types. The Philippines has two broad biogeographical regions: the east, which remains wet throughout the year, and the west, which has a dry season. The forests have been classified by

climate and altitude into evergreen rainforest (81%), semi-evergreen forest (10%) and mountain forest (9%). On the basis of vegetational characteristics, forests have been further classified as various types of dipterocarp forest (61%), mossy forest (18%), pine forest (5%) and others including beach forest and mangrove (15%)^a.

Dynamics of forest resource change.

Deforestation occurred at an annual rate of about 316,000 hectares in the 1980s, caused by land conversion, shifting cultivation, forest fires and over-logging^a. Deforestation decreased somewhat to about 89,000 hectares (1.4%) annually during the 1990s (FAO 2005). Much of the remaining forest is heavily fragmented.

The forests of the Philippines are subject to typhoons and other wind damage. Floods have caused widespread damage and large numbers of casualties in recent years. Regular fires occur in many forest areas.

Permanent forest estate. The country's land resources are classified into forest lands and alienable and disposable (A&D) lands. All lands in the public domain of 18% in slope or greater are classified as forest lands. The Department of Environment and Natural Resources (DENR) reported in 2005 that the extent of the PFE was 15.9 million hectares, comprising areas above the stipulated 18% slope limit; however, based on an interpretation of LANDSAT images from 2001–2003 only an estimated 6.24 million hectares of these are actually forested^a, including an estimated 1.54 million hectares in protected areas and about 4.7 million hectares in production forests (Table 1).

Under the present land classification system, the information available on forest land and A&D land is often confusing. Also, land statistics in the

Table 1 PFE

Estimated total forest area, range (million hectares)	Total closed natural forest ('000 hectares) Source: FAO 2001a	PFE ('000 hectares)			
		Production		Protection	Total
		Natural	Planted		
5.4–7.2	5,288	4,700	274	1,540	6,514

Philippines tend to be imprecise and changeable, as new ways of estimation supersede older ones. Most forests are found on forest land, and most cropland on A&D land, but these land-uses are not always consistent with the legal classes. Of the area presently classified as A&D land, 30–35% has slopes greater than 18%. Conversely, as much as 28% of forest lands have slopes less than 18%. Loopholes in the existing system of land laws, the lack of demarcation of the PFE and other categories of land, and the status of extensive stretches of land as open access have affected the integrity and security of the forest. Forty-five per cent of the external boundaries of the PFE are reportedly demarcated^a.

Planted forests. No clear figures on the extent of planted forests are available; estimates range from 274,000 hectares^a to 753,000 hectares (FAO 2005). An estimated 25,600 hectares were established in 2002, of which 4,900 hectares were planted by the private sector^b. There are an estimated 97,000 hectares of rubber plantations (FAO 2001a).

Institutional arrangements

Forest tenure. The government holds title to a large part of the forest land; data on the actual extent were not available for this report. Considerable portions of the forests (excluding protected areas) are also held by the private sector, communities and people's organizations, and by indigenous people with various kinds of tenure. A 1995 Presidential Executive Order granted tenure and user rights over certain denuded forest lands and forests to communities; in recent years, the allocation of forest resource user rights has changed significantly (see 'Forest for production').

SFM policy framework. The 1987 constitution, which reflected a general reorientation of natural resource management policies in favour of co-production, installed CBFM as the main framework for forest resource management. Today, communities are the main implementers of SFM strategies and programs.

Forest policy and legislation. The foundation of forest policy is Presidential Decree 705 of 1975, as amended; it is known as the Revised Forestry Code of the Philippines. According to this code (Section 2), the components of forest policy are the multiple-use

of forests, the systemization of land classification, the establishment of wood-processing plants, and the protection, development and rehabilitation of forest lands. The code was drawn up when the major thrust was on the massive commercial harvesting of the vast state-owned natural forests by large corporations. Now, the focus has shifted towards small-scale CBFM, covering planted forests as well as natural forests. The drafts of a new national land-use code and an SFM act have been due to be considered by the legislature for several years. The current code and subsequent laws and regulations have not been fully harmonized. Some recent forestry-related laws and administrative instructions include the Republic Act 7586/1992 on a National Integrated Protected Area System; Executive Order 263/1995 on Community-Based Forest Management as a National Strategy for Sustainable Development of the Country's Forests; the Indigenous People's Rights Act 1997 (Republic Act 8371); and Executive Order 318/2004 on Promoting Sustainable Forest Management in the Philippines (which provides guidelines on how to harmonize and implement forestry reforms).

A Master Plan for Forestry Development (MPFD) was prepared in 1990 but not really implemented. It was reviewed, revised and updated in 2003 with the support of UNDP/FAO. The government is now in a position to take appropriate action to implement the revised MPFD and create an environment to attract investment for forestry development.

Institutions involved in forests. DENR is the government agency responsible for the management of forests and protected areas. From 1904 to 1987, the Bureau of Forestry (BFD) was responsible under different departments. With the issue of Executive Order 192 of 1987, most regulatory functions of the BFD were devolved to field offices known as environment and natural resources offices (ENROs), and BFD became the Forest Management Bureau (FMB), a bureau of DENR with recommendatory powers. There are two other forestry-related bureaux within DENR: the Protected Areas and Wildlife Bureau and the Ecosystem Research and Development Bureau.

In respect to decentralization, the Philippines Local Government Code of 1991 conferred certain central government powers relating to taxation, budgeting, planning and management on local government units.

In forestry, DENR devolved some of its functions to the regional level and reassigned some 1,000 staff members to local authorities. DENR was also expected to transfer budgets, assets and records for the Department's devolved functions and programs, but there has been only limited progress in this regard (Ferguson & Chandrasekharan 2005).

Many elements of Philippine civil society participate in forest management and development. A number of international and national NGOs are involved in forestry, particularly in CBFM and environmental conservation. Some of the national NGOs involved in forestry are: *Tanggal Kalikasan*, the Philippines Association for Inter-cultural Development, *HARIBON*, and *Environmental Science for Social Change*.

Status of forest management

Forest for production

The administration of forest lands is principally the responsibility of the state. The private sector began to be involved in forestry in the late 1920s, extracting and exporting Philippine mahogany (dipterocarp species) worldwide. At the height of these operations in the 1970s, the private sector held more than two-thirds of the public forest lands for timber extraction in concessions.

No other Asia-Pacific country was deforested as extensively as the Philippines in the period after World War II. Even though timber licence agreements (TLAs), the system for allocating logging rights, stipulated that logging operations should be conducted according to a system of selective logging, and there were detailed guidelines for forest management, these were hardly ever applied. 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. In order to prevent the loss of old-growth forests, Decree 24/1991 imposed a ban on old-growth (or primary-forest) logging from January 1992 and shifted logging to second-growth (residual) forests. Silvicultural prescriptions were not followed. Today, the control of illegal activities remains a major challenge and is considered one of the main obstacles to SFM^b.

The legal basis of the TLA system changed under the 1987 constitution, resulting in some dramatic reductions in the awarding of concessions. However, TLA holders were allowed to continue to operate until the expiry date indicated in the original agreement, subject to certain requirements. The policy implemented over the past 15 years has been to reduce, phase out or cancel the areas under TLAs in favour of awarding forest harvesting rights embodied in timber production sharing agreements (TPSAs). The TPSA system increased government revenues, but these revenues did not generally go back into forest management as originally intended. An important element in the new policies was the encouragement of private-sector participation in forest plantations. TPSAs then evolved into 'industrial forest management agreements' (IFMAs), 'socialized industrial forest management agreements' (SIFMAs) and community-based forest management agreements (CBFMAs), all of which encourage investment in maintaining the forest growing stock through a performance bond. These new instruments take into account the provisions of the Indigenous People's Rights Act, according to which indigenous people have the right to title over their ancestral lands. It also means that they have a say in the management of these lands. TLAs will all be phased out by 2006 and CBFM arrangements are becoming the norm.

Under CBFM, organized communities operate within allowable-cut limits set by the government. They harvest timber and other forest products to sell, use for their own needs, or process. The sale of timber, rattan, bamboo and other forest products has provided additional income for upland communities. As of December 2003, CBFM projects covered 5.97 million hectares (FMB 2005); the 13 active TLAs covered 544,000 hectares in February 2005. Forestland grazing management agreements covered 473,000 hectares in December 2003, SIFMAs 35,400 hectares and agroforestry lease agreements 147,000 hectares (*ibid.*).

Silviculture and species selection. TLAs for logging in natural forest follow a system of selective cutting, while forest plantations follow a system of clearfelling and artificial regeneration. Many species are used, and it is difficult to determine which are the most commercially important. Species from natural forests not listed in Table 2 but of commercial importance

Table 2 Some commonly harvested species for industrial roundwood (2001–03)^c

Timber species	Remarks
<i>Shorea squamata</i> (mayapis)	Used in the sawmilling and plywood industries
<i>Parashorea plicata</i> (bagtikan)	Used in the sawmilling and plywood industries
<i>Calophyllum</i> spp (bitanghol)	Used in the sawmilling and plywood industries
<i>Albizia falcataria</i>	From secondary forest stands and planted forests
<i>Gmelina arborea</i>	From planted forests

include *Dipterocarpus grandiflorus* (apitong), *Cleistocalyx operculatus* (malaruhat), *Pterocarpus indicus* (narra), *Shorea polysperma* (tangile) and *Ficus nota* (tibig). Natural hardwoods are in short supply and plantation woods such as *Gmelina arborea*, *Eucalyptus* spp and *Acacia mangium*, along with imported timber, are increasingly being used.

Planted forest and trees outside the forest.

Species most commonly used in plantations are *Eucalyptus* spp, which account for 25% of all plantations, and *Tectona grandis* (teak) (5%). Forest plantations include those developed by the government in regular reforestation projects, by communities in CBFM projects, and by industrial concerns through IFMAs, as well as tree farms developed by small landholders on private lands. No recent, aggregated information is available on the survival, growth or yield of the plantations, but it is thought to be low. Corporate-sector involvement in the growing of industrial plantations is being encouraged through IFMAs for the development of integrated industrial forest plantations. An IFMA is a production-sharing contract entered into between DENR and a qualified applicant for a period of 25 years; the period may be renewed for another 25 years, consistent with the principle of sustainable development and in accordance with an approved comprehensive development and management plan. In December 2003, there were 201 IFMAs and industrial tree plantation lease agreements covering a total area of 714,000 hectares (FMB 2005). In addition, trees are raised in farms, homesteads, road margins and in agroforestry systems.

Forest certification. No forest in the Philippines is known to be independently certified as well managed.

Estimate of the area of forest sustainably managed for production.

Given the uncertainties that the phasing out of TLAs is bringing, the extent of SFM is difficult to gauge. Certainly, some of the TLAs have been active for more than 30 years and the forests are now in their third cut, and some CBFM arrangements also show promise. The total area of PFE under management plans is 910,000 hectares^a; in general, however, data on the quality of management are lacking. The area of natural forest managed sustainably is estimated by ITTO to be at least 76,000 hectares, comprising a forest concession managed with ITTO assistance in Surigao del Sur.

Timber production and trade. The production of industrial roundwood in the Philippines peaked at 11.2 million m³ in 1974 (FAO 2001b); in 1977 there were some 325 sawmills and 70 wood-based panel manufacturing units (ibid.). By 2003, tropical industrial roundwood production had fallen to 503,000 m³ (ITTO 2005). Correspondingly, the number of processing units and their production has also fallen: in 2003 there were 31 active regular sawmills with an annual log requirement of 539,000 m³ and 50 plywood and veneer manufacturing units (FMB 2005). Many of the functioning mills have retooled and modified their operations to suit present conditions. Sawmills and woodworking mills mostly rely on plantation wood of *Gmelina arborea*, *Eucalyptus deglupta*, *Albizia falcataria*, *Pinus radiata* and *Pinus caribaea*. The first three of these are mostly produced locally and the last two are mostly imported.

The Philippines imports a significant volume of timber – 356,000 m³ of logs, 338,000 m³ of sawnwood and 93,000 m³ of veneer in 2003 (ITTO 2005).

Table 3 Management of the production PFE ('000 hectares)

Total	Natural			Planted		
	Allocated to concessions/ under licence	With management plans	Certified	Sustainably managed	With management plans	Certified
4,700	n.d.*	910	0	76	274	0

* Recent and continuing changes in the forest allocation system mean that even recent figures may be out of date

Non-wood forest products. No reliable figures on the production and trade of NWFPs were available for this report. NWFPs produced and marketed in the Philippines include resins, tannin, honey, medicinal plants, bamboo, rattan, nipa shingles, *Agathis celebica* (almaciga), etc. The allowable cut for rattan was 21.0 million linear metres in 2003 (FMB 2005). Much raw material for the NWFP industry is imported from other Southeast Asian countries and is further processed in the Philippines.

Forest for protection

Soil and water. The Revised Forestry Law (Chapter III) and the Philippine Environment Code (Chapter III and Chapter VI) have provisions on watershed and ecosystem management, including procedures for the protection and management of sensitive areas for soil and water conservation. The area of forest managed primarily for soil and water conservation is not known^a.

Biological diversity. The Philippines is rich in biodiversity, containing an estimated 24,300 forest-dependent species of mammals, birds, reptiles, amphibians and fish^a. A total of 50 mammals, 72 birds, eight reptiles, 48 amphibians and 215 plants are listed as critically endangered, endangered or vulnerable on the IUCN red list of threatened species; of these, 31 mammals, 65 birds, 48 amphibians and 21 plants are found in forests (IUCN 2004). Thirteen plants are listed in CITES Appendix I and 196 in Appendix II (CITES 2005).

Protective measures in production forests. Wood production from natural forests is progressively being reduced and efforts are being made to increase the area under planted forest.

Extent of protected areas. To conserve the diversity of ecosystems and species, 327 protected areas have been established with a total area of 6.85 million hectares (not all of which are forested)^a. According to UNEP-WCMC (2004), 1.54 million hectares of forest are in protected areas that conform to IUCN protected-area categories I-IV, including 246,000 hectares of lowland evergreen broadleaved rainforest and 825,000 hectares of unclassified forest.

Estimate of the area of forest sustainably managed for protection. Insufficient data were available to estimate the area of the protection PFE being managed sustainably.

Socioeconomic aspects

Economic aspects. The contribution of the forest sector to GDP was 1.6% in 1975, 0.14% in 1999 and 0.05% in 2002^a. An estimated 23,400 people are employed in forest-related government positions, 22,500 of whom have university degrees^a; no reliable data on the total forest-sector workforce were available for this report.

Livelihood values. An estimated 18–20 million people are dependent on 7.2 million hectares of forest lands (not all of which are forested) for subsistence uses and traditional and customary lifestyles^a.

Social relations. Indigenous people play a crucial role in CBFM implementation in areas they claim as ancestral domain. DENR formulated guidelines and undertakes the identification, delineation and recognition of ancestral land and domain claims through Department Administrative Orders 93/02. DENR further provides specific guidelines on the management of certified ancestral domain claims. However, there remains considerable uncertainty about the future of all ongoing and new CBFM projects under indigenous peoples' tenure^a.

Table 4 Management of the protection PFE ('000 hectares)

Total	Attributed to IUCN categories I-IV	Allocated for soil and water	With management plans	Sustainably managed
1,540	1,540	n.d.	n.d.	n.d.

The Philippines has been experimenting with people's participation for more than 30 years. CBFM has now been given the status of the flagship/banner program of DENR, particularly to address poverty and the lack of economic development in upland and forest-dwelling communities.

Summary

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.
- DENR 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.

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