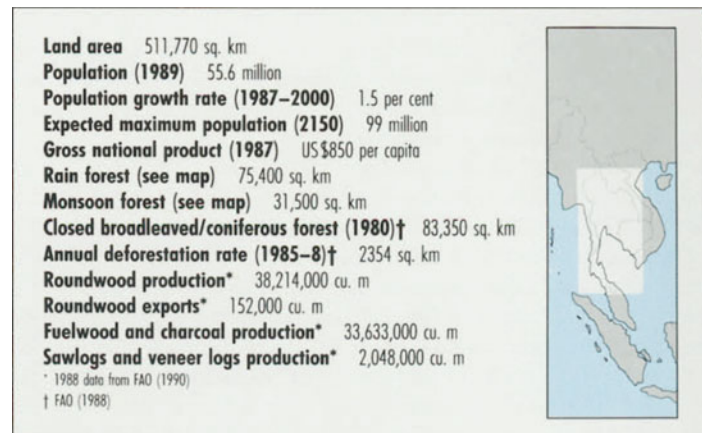


27 Thailand



Thailand, one of the wealthiest and most stable countries in Southeast Asia, was the first country in the world to ban all logging. The ban was a direct result of environmental disasters caused by logging and rubber plantation development. In November 1988, 359 people were killed and hundreds more made homeless by floods in the south of the country. Their houses were buried under an avalanche of logs and mud. The watersheds from where the floods had originated had been logged over and clear-felled for rubber plantations, and the steep slopes and friable soils were insufficiently stabilised. The Royal Decree to ban logging was issued in mid-January 1989 by the Prime Minister, Chatichai Choonhavan, and this was accepted by the House of Representatives in May. A second decree revoked all existing logging concessions.

That this should occur in Thailand is all the more surprising considering that, in the latter half of the 19th century, Thailand had been the first Southeast Asian country to begin managing its forests for a sustained yield. The decision to ban logging amounted to an official recognition that Thailand's timber must now be supplied by plantations and that natural forests will continue to exist only as isolated pockets in national parks, wildlife sanctuaries and some catchment protection areas. The Thai Government intends to allocate a total of 15 per cent of the country's land area for these.

The ban on logging has hit the timber industry hard and Thailand is now setting up trading links with its Indochinese neighbours to import logs and sawn wood.

INTRODUCTION

Thailand is a country of tremendous cultural and natural diversity. Its vegetation ranges from the upland pine forests on the Laotian and Burmese borders, to the lowland rain forests in the far south. The landscape has been moulded both by the original Malay population of the south, and successive waves of colonists who have moved into the country from the north over the past two thousand years.

The country divides naturally into six regions.

The Northern Highlands extend from the borders with Burma and Laos south to about 18° latitude. They are comprised mainly of ridges running north-east to south-east, reaching an elevation of between 1500 and 2000 m, and separated by wide valleys at between 300–500 m elevation. Originally the mountains above 1000 m were clad in evergreen montane rain forest, with mixed deciduous monsoon and dry dipterocarp savanna forests on their flanks. The valleys, however, have long been wholly cultivated. This region suffers from the steady southward push of hill tribes such as the Hmong and Yao, who cultivate upland rice and, at higher elevations, the opium poppy. Undisturbed forest is now restricted to a few scattered patches in remote areas.

The Korat Plateau covers the north-eastern bulge of Thailand. It forms a shallow saucer at 100–200 m, rimmed by the Petchabun Range in the west, and the Dangrek Range in the south. These reach 500–1400 m and meet in the highlands of the Khao Yai National Park. The plateau is now largely devoid of forest, but extensive areas still persist on the ranges. Dry monsoon forests on the lower slopes

grade into evergreen rain forest on the hills and finally into pine woodlands on the ridge tops.

The Central Plain of the Chao Phraya River is now almost entirely under intensive rice cultivation and its original swamp and monsoon forest has entirely disappeared.

The South-East Uplands are an extension of the Cardamom Mountains from across the Cambodian border. Rainfall approaches 5000 mm in some areas. Small remnants of the once prevalent tropical rain forest still survive in protected areas.

The Tenasserim Hills extend south from about 18°N in the Northern Highlands, along the Burmese border to the Kra Isthmus, at about 10°N, rising steeply to about 1000 m. Since the Thai side of the Tenasserim lies in the rain shadow of higher hills on the Burmese side, it is relatively dry, but semi-evergreen rain forest persists at higher elevations along the border. The upper flanks are often precipitous, with bare rock. The slopes, once clothed in deciduous monsoon forest containing some teak and much *Shorea* spp., are now deforested, and covered with bamboo and grassland.

The Southern Peninsula extends to the Malaysian border from a line joining Chumphon to Ranong at 10°N. It is an area of heavy rainfall and was originally covered in rain forest. However, most forest in the lowlands has been lost to agriculture. Extensive tracts persist only on the hills, but during the last decade even these have come under assault, principally from rubber plantations, which have often been established with international aid.

The Forests

Lowland rain forest, shown on Map 27.1, comprises both evergreen and semi-evergreen formations. Evergreen rain forest occurs in the extreme south of peninsular Thailand, near the Malaysian frontier. This is the northern fringe of the great Malesian rain forests, which reach their northern limit at a line from Kangar to Pattani. This also occurs in the Chantaburi pocket, an isolated patch in the south-east, on the wet western slopes of the Cardamom Mountains.

Thailand's rain forests are rich in Dipterocarpaceae and other species associated with the forests of Malesia, but they also contain species with Chinese and Himalayan affinities. Many species from these major centres of plant diversity have their northern and southern limits respectively at the Isthmus of Kra. Semi-evergreen rain forest is Thailand's main forest formation. Its boundary with evergreen rain forest is fairly well known in the peninsula (see Whitmore, 1984), although not in the Chantaburi pocket where a complex mosaic results from the locally variable rainfall, soil and aspect.

Monsoon forest in Huai Kha Khaeng Wildlife Sanctuary, Thailand. WWF/H. Jungius



Heath forest once occurred on some sandy soils in the south-east peninsula, but has now been degraded to open grass and shrublands.

Limestone with characteristic vegetation, occurs as karst towers in the south peninsula to about 9°N, and as islands off the south-west coast. There are also extensive limestone mountains in the north-west, and also to the west, north to c. 15°N latitude. Good examples of karst limestone vegetation are found in Ao Phangnga and Khao Sam Roi Yot National Parks and the Phu Luang Wildlife Sanctuary.

Freshwater swamp forest must once have existed along the major rivers, but it has now been entirely cleared to make way for irrigated rice cultivation. Swamp forests were the home of Schomburgk's deer (*Cervus schomburgki*), which became extinct in the 1930s. The only comparable formations to survive are the *Melaleuca* and *Alstonia* forests around Thale Noi in Phattalung Province, Bang Nara in Narathiwat Province in the southern part of the peninsula and the Pa Phiu Non-Hunting Area. This last is still extremely species-rich, and comprises 80 sq. km of peat swamp forest.

Beach forest with its typical Indo-Pacific flora, fringes sandy coasts of the mainland and offshore islands, but is now much altered by settlement and tourist development.

Montane forests in Thailand are difficult to define and map because distribution is dependent upon locally complex climatic and topographic variations. In Map 27.1 they have been delimited by a 914 m (3000 ft) contour. Montane forests contain strong temperate elements and are typically dominated by species of *Castanopsis*, *Lithocarpus* and *Quercus*. The higher forests at Khao Yai, at only 14°30'N, contain the Himalayan species *Betula alnoides*. Such temperate species become more frequent to the north, where *Aceraceae*, *Lauraceae*, *Magnoliaceae* and *Rosaceae* are abundant. Open stands of *Pinus kesiya* and *P. merkusii* occur as a fire climax formation on sandy soils on the hills of the north. A particularly good example occurs in the Phu Kradeung National Park and is visited by many thousands of people each year.

Deciduous monsoon formations were once much more extensive than rain forests, but have been widely deforested. The northern monsoon forests include commercially important teak, found mainly on well-drained soils derived from igneous rocks, and thriving under a regime of occasional ground fires which clear the undergrowth.

Extensive dry deciduous woodlands with some dipterocarp content also occur in the north and east but this open canopied formation has not been included in Map 27.1.

Forest Resources and Management

Table 27.1 is a summary of FAO data for forest cover of Thailand. FAO Rome estimated total natural forest cover at 156,750 sq. km in 1980 and predicted 137,800 sq. km by 1985 (FAO/UNEP, 1981; FAO, 1988). FAO Bangkok made a re-evaluation in 1987 and found slightly higher results for 1985 of 149,050 sq. km, but predicted 135,000 sq. km for 1990 (FAO, 1987). All these figures include open-canopied deciduous dipterocarp forests in northern Thailand, and it is of interest to note that this formation makes up a gradually larger proportion of the total (e.g. FAO (1987) shows 45 per cent open canopy forest in 1980 but 56 per cent in 1990).

Table 27.2, based on Map 27.1, is derived mainly from 1985 data (see Map Legend for details). It shows almost 107,000 sq. km of tropical moist forest in rain and monsoon forest formations. Open canopy dry dipterocarp forests have been excluded, but in the original maps about 43,000 sq. km of this formation was shown. The total for all forests is thus about 150,000 sq. km, in close agreement with the FAO assessment for 1985 (FAO, 1987). However it should be noted that there is some disparity between the totals for the open and closed canopy formations, with Map 27.1 showing more of the closed canopy rain and monsoon forests than FAO (1987) data would suggest.