

Madagascar (Democratic Republic of)

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Location and area

Madagascar is a republic in the Indian Ocean, separated from the southeastern coast of Africa by the Mozambique Channel. Madagascar is made up of Madagascar Island, the fourth-largest island in the world, and several small islands. The country's total area is 587,041 km² (Microsoft Encarta Encyclopedia 2002).

Topography

A central mountainous plateau that is partly volcanic in origin dominates the island of Madagascar. The highest point is Mount Maromokotro in the north, at 2,876 m. In the centre, the massive Ankaratra Mountains, near Antananarivo, reach a height of 2,643 m. The land slopes steeply to a narrow lowland bordering the Indian Ocean in the east and to a somewhat wider coastal plain along the Mozambique Channel in the west.

The major rivers of Madagascar are the Betsiboka, Tsiribihina, Mangoky, and Onilahy; all rise in the uplands near the eastern coast and flow west to the Mozambique Channel through fertile valleys. By contrast, rivers flowing to the Indian Ocean are short and swift. The largest lake is Alaotra, near Toamasina. (Microsoft Encarta Encyclopedia 2002).

Climate

The eastern part of Madagascar receives a lot of rain, brought by southeasterly trade winds; annual rainfall in some places exceeds 3,000 mm. The central plateau gets considerably less moisture, and arid areas in the south and southwest receive less than 380 mm per year. Most of the rain falls from November to April. The coastal regions are generally hot throughout the year. The central plateau has a temperate climate, with warm summers and cool winters. (Microsoft Encarta Encyclopedia 2002).

Land use

The country's best soil is found along the coast and in river valleys of the central plateau. Wood is cut, most for local use as fuel. There are problems of severe loss of forest cover accompanied by erosion. Because of the mountainous terrain, only about 5 per cent of Madagascar is farmed. Approximately 67 % of all electricity is produced by hydroelectric power stations (Microsoft Encarta Encyclopedia 2002).

Wetlands

Mangroves are relatively rare in Madagascar and largely found in the estuaries of the large western rivers (Straka 1962). According to the WWF 5,500 km² of mangroves are present in Madagascar. (www.worldwildlife.org/wildworld/profiles/terrestrial/at/at1404_full.html) Without further references, Lappalainen & Žurek (1996c) give a total wetland area of 1,970 km² (cf. Bord na Mona 1985))

Peatlands

An extensive literature review of the peatlands and mires of Madagascar is given by Straka (1960a). Peatlands are described from the eastern region, from the central mountains and plains (incl. a crater mire with a diameter of 3-5 km² with 7 m peat), from the western slopes of the mountains, from the area around Lac Alaotra, from northern Madagascar (Bealanana District), and from the western region. In the Bealanana district about 300 km² are covered by peatlands with a peat layer of > 30 cm to over 2 m thick and with a mineral content of 57 %. In the western region also floating mats are found over lakes and coastal lagoons. The maximum peat depth that was cored was 10.5 m (Straka 1959). See also De Waard & Straka (1961).

Pfadenhauer (1980, 1990), quoting Straka (1960b) mentions the presence of peatlands with up to 2 m of peat in the mountains of Madagascar. Dudal (1980) reports on the extensive presence of Histosols (organic soils) within large swampy areas in Madagascar.

Bord na Mona (1985) and Shrier (1985), referring to the histosols on the FAO/UNESCO 1971-1981 Soil Map of the World 1:5,000,000, mention a peatland resp. "mire" area of 1,970 km² on quaternary alluvial and lacustrine deposits around Lake Alaotra in north-eastern Madagascar. Howard-Williams & Thompson (1985) give an area of 200 km² for the Alaotra shallow lake and 1,000 km² for the adjoining swamp. Possible other peatland areas may include Itasy lake (35 km²) and Kinkony and associated shallow lakes (139-159 km²) (cf. Howard-Williams & Thompson 1985).

Andriessse (1988) uses the figure of 1,970 km² for the extent of organic soils, and Schneider & Schneider (1990) and Pfadenhauer et al. (1993) for the peatland area of Madagascar. According to Markov et al. (1988) peatlands can be found up to 2200 m above sea level, with peat layers up to 10,5 m thick.

According to the interpreted World Soil Map (Van Engelen & Huting 2002) 1,903 km² of histosols exist in Madagascar and 30,048 km² of gley soils.

Mire and peatland losses

Ferry (1898) (cited in Straka 1960a) already mentioned the presence of peat layers covered by clastic sediments in the area of Tananarive. The peat was used as a fuel for the production of bricks. Deforestation and erosion has led to the *Sphagnum* mires in the east of the country being covered by a layer of alluvial material. Living mires have also largely disappeared from the central mountains, where they used to cover large areas. They have often been reclaimed to rice fields (Perrier de la Bathie 1921a, b). Melioration for agriculture has also destroyed the mires in the southern part of the Lake Alaotra basin (Roche 1952), where (up to 2 m of) peat has disappeared following drainage and burning of the peat layers (Straka 1960a)

Still to be checked:

Euroconsult. 1984. Etude de la maîtrise d'eau des sols tourbeux des périmètres Somalac dans la région du lac Alaotra et de l'entretien mécanisé des réseaux hydrauliques de ces périmètres. Repoblika Demokratika Malagasy, Entreprise Socialiste Somalac.

Roche, P. 1952. Les sols de marais récemment récupérés au Lac Alaotra. *Agronomie Tropicale* 7:43-63.