

# **Ethiopia (Federal Democratic Republic of)**

**Last updated: 31-01-2004**

## **Location and area**

Ethiopia is a republic in eastern Africa, bordered on the northeast by Eritrea and Djibouti, on the east and southeast by Somalia, on the southwest by Kenya, and on the west and northwest by Sudan. The area of the country is 1,133,380 km<sup>2</sup>.

## **Topography**

A high tableland, the Ethiopian Plateau with an average elevation of about 1,650 m, covers more than half the country. Its northeastern edges drop some 1,200 m or more to the coastal plain and the Danakil Desert. Along its western edge, the plateau descends more gently to the deserts of Sudan. Along its southern and southwestern limits, the plateau drops towards Lake Turkana in Kenya. The plateau is split diagonally from northeast to southwest by the Rift Valley.

The highlands of Ethiopia are made up of crystalline rocks capped by sedimentary limestone and sandstone, and by thick layers of volcanic lava. In the north the plateau is cut by many rivers and deep valleys, some of which are 600 m below the level of the plateau and capped by mountains, the highest of which is Ras Dashen (4,620 m). Lake Tana, where the Blue Nile rises, also lies in the northern area. Part of the plateaux were glaciated during the late Quaternary (Gasse & Street 1978).

## **Climate**

The climate of Ethiopia varies, mainly according to elevation. The tropical zone, below 1,800 m, has an average annual temperature of about 27° C and receives less than 500 mm of rain annually. The subtropical zone, which includes most of the highland plateau and lies between 1,800 and 2,400 m above sea level, has an average temperature of about 22° C with an annual rainfall ranging from 500 to 1,500 mm. Above 2,400 m is a temperate zone with an average temperature of about 16° C and an annual rainfall between 1,200 and 1,800 mm. The main rainy season occurs between mid-June and September, followed by a dry season that may be interrupted in February or March by a short rainy season.

## **Land use**

Vegetation reflects the great variety in elevation. The lower areas of the tropical zone are sparsely covered with desert shrubs, thornbushes, and coarse savannah grasses. In the valleys and ravines, almost every form of African vegetation grows in luxurious profusion. The temperate zone is mainly grassland. Afro-alpine vegetation is found on the highest slopes. About 90 % of its relatively small yearly electricity output is generated by hydroelectric facilities, but about 90 % of total energy needs are still supplied by fuel wood. (Microsoft Encarta Encyclopedia 2002).

## **Peatlands**

According to Markov et al. (1988) most peatlands are located in the southwestern and northern part of the country, up to 3600 meters above sea level.

Shrier (1985) mentions the presence of mires on the Ethiopian Plateau.

Other potential peatland areas include the shallow lakes Tana (3,500 km<sup>2</sup>), Abaya (1,161 km<sup>2</sup>), Awasa (202 km<sup>2</sup>, with swamps), Shamo (551 km<sup>2</sup>), and Ziway (437 km<sup>2</sup>) (Howard-Williams & Thompson 1985).

Dramis (2001) gives <sup>14</sup>C dates of Holocene peat material in Northern Ethiopia.

According to the interpreted World Soil Map (Van Engelen & Huting 2002) 2,231 km<sup>2</sup> of histosols exist in Ethiopia and 1,303 km<sup>2</sup> of gley soils.

### **Mire and peatland losses**

Both poor rainfall, increased population, and new technology have led to an increased use and drainage of wetlands in Ethiopia in the 20<sup>th</sup> century leading to an oxidation of the soil organic matter (Hailu et al. 2003).

#### Still to be checked:

**Bonnefille R. & Mohammed U.** (1994) Pollen inferred climatic fluctuations in Ethiopia during the last 3,000 years. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 109, 331-343.

**Gasse F., Rognon P. & Street F.A.** (1980) Quaternary history of the Afar and Ethiopian rift lakes. In: M.A.J. Williams and H. Faure (eds.) *The Sahara and the Nile*, Balkema, Rotterdam, 361-400.

**Gasse, F. & Street, F.A.** 1978. Late Quaternary lake-level fluctuations and environments of the Northern Rift Valley and Afar Region (Ethiopia and Djibouti). *Palaeogeogr., Palaeoclim., Palaeoecol.* 24: 279-325.

**Machado M.J., Pérez-González A. & Benito G.** (1998) Paleoenvironmental changes during the last 4,000 yr. in the Tigray, Northern Ethiopia. *Geomorphology*, 23, 127-138.

**Street-Perrot F.A. & Perrot R.A.** (1990) Abrupt climate fluctuations in the tropics: the influence of Atlantic Ocean circulation. *Nature*, 343, 607-612.

**Gasse, F. & Street, F. A.** (1978) The main stages of the late Quaternary evolution of the Northern Rift Valley and Afar lakes (Ethiopia and TFAI). *Pol. Arch. Hydrolbiol.* 25: 145-150

**Lézine, A-M. & Bonnefille, R.** (1982) Diagramme pollinique holocène d'un sondage du Lac Abiyata. *Pollen et Spores*, 24 (3-4): 463-480

**Hamilton, A.C.** 1977. An Upper Pleistocene pollen diagram from Highland Ethiopia. INQUA Congr. Birmingham, p. 193. 3 m boring in tourbiere du miont Badda 4040M, 90 NE of lake Abiyata)

**Telford, R.J. & Lamb, H.E.** (1999) Groundwater-mediated response to Holocene climatic change recorded by the diatom stratigraphy of an Ethiopian crater lake. *Quaternary Research* 52: 63-75

**Hamilton, A.C.** 1982. Environmental history of East Africa. A study of the Quaternary. Academic Press, London, 328 pp. peat deposit in Mount Badda bog (4040 m)

Bale Mountains National Park  
Forest and moorland.

Michael Succow  
Udo Schickhoff  
Aanvraag biodiversity East Africa

Ethio Wetlands and Natural Resources Association

