Kenia

Last updated: 31-01-2004

Location and area

Kenya is a republic in Africa, bounded on the north by Sudan and Ethiopia, on the east by Somalia and the Indian Ocean, on the south by Tanzania, and on the west by Lake Victoria and Uganda. Kenya has an area of 582,646 km^2. (Microsoft Encarta Encyclopedia 2002).

Topography

Kenya falls into several well-defined topographical zones:
1. The low coastal plains, extending from the Indian Ocean, rise gradually to
2. a broad, arid plateau that covers much of the north and east.
3. In the central area there are great volcanic mountain chains, reaching more than 3,000 m with Mount Kenya (5,199 m) as the principal peak.
4. Further west, the immense depression of the Rift Valley is demarcated by a succession of steep cliffs.

The chief rivers are the T'ana and Galana (known as the Athi in its upper course). Kenya contains almost all of Lake Turkana (Lake Rudolf) and a small portion of Lake Victoria. (Microsoft Encarta Encyclopedia 2002).

Climate

Kenya is divided by the equator into two almost equal parts. The region north of the equator is hot and receives comparatively little rain. The southern region falls into three zones. The coast is humid, with a mean annual temperature ranging from about 24° C in June and July to about 28° C in February, March, and April; the highlands are temperate; and the Lake Victoria region is tropical. The rainy seasons occur from October to December and from April to June. (Microsoft Encarta Encyclopedia 2002).

Land use

About 11 % is suitable for agriculture, about one third of this is arable; the remainder is used mainly for grazing. The Kenyan agricultural system is highly diversified, producing almost every basic foodstuff.
Along the coast are forests containing palm, mangrove, teak, copal, and sandalwood trees. Forests of baobab, euphorbia, and acacia trees cover the lowlands to an elevation of approximately 900 m. Extensive tracts of savannah, interspersed with groves of acacia and papyrus, characterize the terrain from about 900 to 2,750 m. The eastern and southeastern mountain slopes are in dense rainforest. The alpine zone (above about 3,500 m) contains large *Senecio* and *Lobelia* species.
88% of the country is semi-arid. The northern region, covering two thirds of Kenya, is mostly desert or semi-desert. (Microsoft Encarta Encyclopedia 2002).

Wetlands

No coordinated national wetland/peatland inventory and mapping has yet been carried out (www.fao.org/DOCREP/003/X6611E/x6611e04c.htm, Kiai & Mailu 1998).
Without further reference or description, Lappalainen & Żurek (1996c) give a total wetland area of 1,600 km² incl. coastal mangroves and other wetlands (cf. D'Costa et al. 1994).
According to Abiya (2000) the "wetland" area of Kenya covers 18,000 km^2 and comprises "swamps", "marshes" and "shallow open water systems".

xxx

Fig. Xxx: Wetlands of Kenya (after Kiai & Mailu 1998).

Peatlands

Kivinen & Pakarinen (1981) mention the presence of peatland in Kenia but present no estimates for its area.
Markov et al. (1988) estimate the area of „peat resources" (peat thickness not mentioned) in Kenya as being 1,000 km^2. According to them peatlands can be found around lakes, such as Magadi Lake and in the northwestern parts of the country.
Shrier (1985) mentions the presence of "mires" in the Aberdare Range and the Cherangani Hills in Kenya and on Mount Elegon on the Uganda/Keny border. Bord na Mona (1985) and Shrier (1985), on the basis of the FAO Soil Map of the World also refer to Histosols associated with Orthic Ferrasols and Humic Gleysols.
D'Costa et al. (1994) mention 1,600 km^2 of Histosols, swampland soils, with 20-30% organic matter, and permanently saturated with water. These 1,600 km^2 of histosols are mapped "singly or in association with humic gleyed soils" and consist of montane Histosols, Lake Victoria swamps, riverine swamps, and coastal swamps.

Potential peatland areas are presented in table 1.

Table 1: Potential peatland areas in Kenya (after Howard-Wiliams & Thompson 1985).

Area	**countries**	**Wetland type**	**Extent (in km^2)**
Lake Victoria swamps	Uganda, Tanzania, Kenya	Swamp	?
Lotagipi	Sudan, Kenya	Swamp	12,900
Yala swamp	Kenya	Swamp, delta	140
Sondu Ahero swamp	Kenya	Swamp, delta	140
Lorrian swamp	Kenya	Swamp	100
Lake Naivasha	Kenya	Shallow lake and swamp	140
Baringo	Kenya	Shallow lake	130

Mainga & Mbuvi (1994) distinguish between
1. Wetlands in the mountains > 3 000 m (around Mt. Kenya) with a histic horizon of 50-90 cm)
2. Wetlands on the "High level structural plains", that are used for intensive rice production
3. Valley wetlands with Umbric gley soils, Dystric gley soils, and Fibric Histosols with layers of partly decomposed organic material of > 150 cm. The seasonally flooded ones are used for the cultivation of various crops, whereas the reeds and papyrus in the permanent water logged ones are used for thatching of houses, weaving of baskets, chairs etc.

According to Kiai & Mailu (1998), basing on data of the Kenya Soil Survey, alluvial Fluvisols cover 19,366 km^2 and poorly drained Versols, Gleysols other Planosols, Greyzems, Chernozems and Vertoluvic Phaezems in total 56,043 km^2.

Small spring mires with a clayey peat (LOI from 75% at the surface to ~10% at 0.4 – 1.2 m) are described by Ashley et al. (2002) between Lake Baringo and Lake Bogoria in the Rift Valley. The springs are capped with a peat math, and an area of marsh and wet meadows surrounds each vent. Individual mounds are ~ 15 m wide, 1-2 m high, and have a central water blister with a volume of < 1 m^3.
According to the interpreted World Soil Map (Van Engelen & Huting 2002) 4,959 km^2 of histosols exist in Kenya and 11,540 km^2 of gley soils.

Mire and peatland losses

Kenya has lost about 15% of its coastal wetlands and 9% of its inland wetlands during the last decade (Baer 2001).
Some edges of the larger Lake Victoria and Riverin swamps have been drained and brought under cultivation (grazing, cropping, vegetables, irrigated sugar cane and reed uses).Threats for wetlands include rapid urban growth, agriculture, pollution, and wetland resource extraction (Abiya 2000).
Several large wetlands have been accorded protection status, including Lake Nakuru within the Lake Nakuru National Park, Lake Bogoria, Mzima Springs in Tsavo west National Park, Tana river Floodplain within the Tana river Primate National Reserve and Lake Amboseli within the Amboseli National Park. Many other important wetlands are unprotected and under threat of degradation (Kiai & Mailu 1998).

Fotos of Kenyan peatlands can be found under: www.ipcc.ie/wpkenya.html

Still to be checked:
Crafter, S.A., Njuguna, S.G. and Howard, G.W. Proceedings of a seminar on wetlands of Kenya.
ILACO. 1977. Yala swamp investigation project, final report. Republic of Kenya, Ministry of Agriculture and National Irrigation Board, Kingdom of the Netherlands.
Mäckel, R., Schultka, W. & Walther, D. 1989. Vegetation and landuse changes of Mount Kulal, northern Kenya, during the Holocene. In: Mahaney, W.C. (ed.) Quaternary and environmental research on East African mountains: 405-420, Rotterdam
Maitima, J.M. 1991. Vegetation response to climatic change in Central Rift Valley, Kenya. Quaternary Research 35: 234-245
Tiercelin, J.J., Renaut, R.W., Delibrias, G., Le Fournier, J. & Bieda, S. 1981. Late Pleistocene and Holocene lake level fluctuations in the Lake Bogoria basin, northern Kenya Rift Valley. Palaeoecology of Africa 13: 105-120.
Van Zinderen Bakker, E.M. (1964) A pollen diagram from equatorial Africa, Cherangani, Kenya. Geologie en Mijnbouw 43: 123-128