Sri Lanka (Democratic Socialist Republic of) (formerly Ceylon)

Last updated: 31-01-2004

Location and area

Sri Lanka is an island republic in the Indian Ocean off the southeastern coast of India. It is separated from India by the Palk Strait and Gulf of Mannar. Lying between the two nations is a chain of tiny islands known as Adam's Bridge. Sri Lanka is somewhat pear-shaped, with its apex in the north. The greatest length from north to south is about 440 km, the greatest width is about 220 km. The total area of Sri Lanka is 65,610 km^2. (Microsoft Encarta Encyclopedia 2002).

Topography

An outstanding feature of the topography of Sri Lanka is a mountainous mass in the south-central part of the country, the highest point of which is the peak of Pidurutalagala (2,524 m). In the upland area are two plateaux, Nuwara Eliya and Horton Plains, noted for their cool climate, which are major centres of commercial tea plantations. North of the mountains, and extending south, is an arid and gently rolling plain. Lagoons and inlets indent the west, south, and southeast parts of Sri Lanka's coast. (Microsoft Encarta Encyclopedia 2002).

Climate

The climate is generally hot and humid. The hill and mountain areas, however, are cool, and the humidity is lower in the dry zone. The average annual temperature is 32.2° C in the lowlands and 21.1° C in the higher mountainous regions.
The hills and the lowlands of the southwestern section normally have some rainfall throughout the year. In the northern dry zone the main precipitation of about 1,016 mm (40 in) annually occurs during the monsoon season. Rice the principal crop of the island. More acreage is devoted to the cultivation of rice than to any other crop (Microsoft Encarta Encyclopedia 2002).

Wetlands

The wetlands of Sri Lanka comprise a variety of coastal and inland systems, ranging from estuaries, lagoons and mangroves to rivers, villus and tanks (reservoirs). Many of the tanks date back 1,500 years when they formed part of an intricate irrigation system for rice cultivation. In recent decades, several large reservoirs have been constructed as part of large-scale hydro-power and irrigation projects, notably in the Mahaweli catchment area. (www.geoanalytics.com/bims/bims.htm).
Lappalainen (1996b) gives a recent wetland area for Sri Lanka of 150 km^2. The area of mangroves is estimated to 130 km^2 (Dhanapala & Premachandra 1994) or up to 320-400 km^2 (Copal & Krishnamurthy 1993), but continually decreasing.
Sri Lanka has 7,800 km^2 of rice fields under irrigated, rain feed, upland and tidal wetland conditions (Bambaradeniya & Edirisinghe 2002).

Peatlands

The first publication on peatlands in Sri Lanka is Keilhack (1914), who was encouraged to look for peatlands on Sri Lanka by reading Meyer's travel guide "Weltreise" in which "unsecure peaty areas in the surroundings of Nureliya" (Nuwara Eliya) were mentioned, which Keilchack interpreted as the presence of schwingmires. Indeed he found the valley of the Nanuoya stream in the subtropic southern highlands (1,850 m a.s.l.) being "in its total extent filled with peatlands and both in its deeper, as also in its higher parts covered with a peat blanket" (Keilhack 1915). The peat is up to 1m thick and rises from the margins of the lake uphill to a height of 30 m over the lake. Furthermore he describes

- a terrestrialization fen peatland (max. width 200 m, 3-8 dm of peat) surrounding Lake Gregory in the southern part of the valley, the peat having an ash content of 25 – 40%,
- a peatland (30m wide, unknown length) on the Talagalla Mountain (2,250m a.s.l.).

Next to these upland peatland he described extensive peatlands (with 1m or more of peat) stretching over 30 – 40 km length in the southern coastal plains between Ambalangoda, Galle, and Weligama (Keilhack 1914, 1915).

Kivinen & Pakarinen (1981) mention the presence of peatland in Sri Lanka but present no estimates for its area.

Pfadenhauer (1980, 1990) mentions, on the basis of communications of Kh. Göttlich, the presence of "patanas" peatlands in the Horton Plains (2000 m asl) of Sri Lanka.

Schneider (xxxx) mentions a peatland north of Colombo of 33 km^2, that is temporarily flooded.
Kivinen & Pakarinen (1980) estimate the peatland area (> 30 cm peat) in Sri Lanka as being 100 km^2.
Markov et al. (1988) estimate the area of „peat resources" (peat thickness not mentioned) in Sri Lanka as being 100 km^2. Peat thickness: usually 0,5 – 0,75 m

Shrier (1985), referring to Bord na Mona (1984) mentions a "mire area" of 25 km^2 (survey 1960). The peat resources of Sri Lanka are located at or near the west coast. Muthurajawela swamp, covering 22 km^2, lies to the north of Colombo, with a second deposit at Kotte to the south coast. The peat of Muthurajawela has a high sulphur content (1.6-8.3 % by weight) and most of the deposit is permanently inundated. A limited number of the higher dry-ground areas have been developed for vegetable cultivation.

Bord na Mona (1984) and Andriesse (1988) estimate the extent of organic soils in Sri Lanka to be 25 km^2. The same figure is used for peatlands by Schneider & Schneider (1990) and Pfadenhauer et al. (1993).
Rieley et al. (1996a) estimate the extent of peat swamps in Sri Lanka at 30 km^2, Lappalainen (1996b) mentiones a recent peatland area (> 30 cm peat) of 29 km^2. 2.40 km^2 has a peat thichness of >1m with a peat volume of 5.45 Mm^3 and 490,000 t dry matter, whereas an area of 1.40 km^2 has a peat thickness of > 2m, a peat volume of 4.2 Mm^3 and 243,000 t dry matter. As most significant peatland he mentions Muthurajawela mire, near Colombo with an area of 29 km^2 (> 30 cm of peat, total peat resources being 9.65 Mm^3). The peatland is drained and cultivated (Ekono 1985).

According to the interpreted World Soil Map (Van Engelen & Huting 2002) 565 km^2 of histosols exist in Sri Lanka and 2,574 km^2 of gley soils.

Mire and peatland losses

Mangroves originally (i.e. before human influence) covered 1,022 km^2, of which currently 63 km^2 remains. Freshwater swamp originally covered 72 km^2 of which 17 km^2 remain (www.geoanalytics.com/bims/bims.htm).
Keilhack (1914) decribes how the higher parts of the coastal peatlands were drained and used for agriculture. Keilhack (1915) describes that already in 1913 two third of the Nanuoya valley was reclaimed.

Still to be checked:
Copal, B & Krishnamurthy, K. 1993. Wetlands of South Asia. In: Whigham, D., Dykyjova, D. & Hejný, S. (eds.). Wetlands of the World I. Handbook of vegetation science. Kluwer Academic Publishers. Netherlands. 345-414
Dhanapala, A.H. & Premachandra, O.V. 1994. Mapping mangroves utilization and degradation using historical documents and sequential aerial photographs. Wetland, Environment and Utilization, Int. Conference on Wetland, Environment and Peatland Utilization, 9-11 August 1994, Chanchung, P.R. China. 1994:2
Ekono 1985. Feasability Study on the Potential Uses of Peat in Sri Lanka. – Ministry for Foreign Affairs, Finnish International Development Agency. 53 p. + 3 app.