

SRI LANKA



Source: esri

General

Sri Lanka - officially the Democratic Socialist Republic of Sri Lanka - is an island country in South Asia, located southeast of India and northeast of the Maldives. The area of Sri Lanka is 6.6 Mha (million hectares) with, in 2022, a population of 21.8 million, or 3.3 persons per ha (Wikipedia and United Nations, 2022).

Climate and geography

The climate is tropical. Mean temperatures range from 17 °C in the Central Highlands to a maximum of 33 °C in low-altitude areas. Average annual temperatures range from 28 °C to nearly 31 °C. The rainfall pattern is influenced by monsoon winds from the Indian Ocean and Bay of Bengal. The wet zone and some of the windward slopes of the Central Highlands receive up to 2,500 mm of rain annually, but the leeward slopes in the East and Northeast receive little rain. Most of the east, southeast and northern parts of Sri Lanka comprise the dry zone, which receives between 1,200 and 1,900 mm of rain annually. The arid northwest and southeast coasts receive 800 to 1,200 mm per year. Periodic squalls occur and sometimes tropical cyclones bring overcast skies and rains to the southwest, northeast, and eastern parts of the island. Humidity is typically higher in the Southwest and mountainous areas and depends on the seasonal patterns of rainfall (source: Wikipedia).

Sri Lanka is a pearl-shaped Island lying on the Indian Plate, a major tectonic plate that was formerly part of the Indo-Australian Plate. The island consists mostly of flat to rolling coastal plains, with mountains rising only in the south-central part. Sri Lanka has 103 rivers. The longest of these is the Mahaweli River, extending 335 km. Sri Lanka's coastline is 1,585 km long. Sri Lanka has 45 estuaries and 40 lagoons. An area of about 70,000 ha is flood prone. An increase in average rainfall coupled with heavier rainfall events has resulted in recurrent flooding and related damages to infrastructure, utility supply and the urban economy (source: Wikipedia).

Existing polders

The Group Polder Development (1982) identified 4 polder areas (Figure 1). These are:

- *Muturajawela* (2,429 ha). This is a marsh area on the west coast. The main marsh is traversed by a navigation canal, called the Old Dutch Canal. In 1767 the first reclamation project was initiated at the initiative of Iman William Flack, the then Dutch Governor of Ceylon. Several attempts to reclaim the area were made in the following years, but mostly with little success as often acid sulphate soils developed;
- *Karavakn*. 810 ha lowland;
- *Tempalakaman*. 81 ha lowland in the delta of the Mahaweli River;
- *Kiralekele*. 972 ha;
- *Thondamannar*. The Group Polder Development (1982) mentions that this was a proposed reclamation project of 2,000 ha. At Google Earth it can be identified that in this region indeed areas have been reclaimed.

General characteristics of the polders in Sri Lanka are shown in Table I.

Proposed polders

No proposed polders have been identified.

Location of the polders in Sri Lanka as shown on the World polder map

The location of the polders in Sri Lanka is shown in Figure 2.

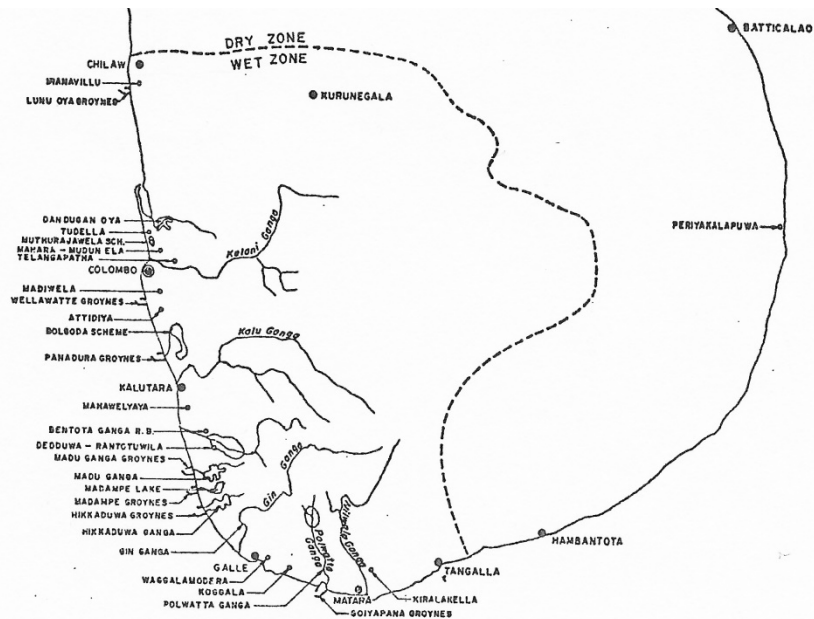


Figure 1. Reclamation of marshes in Sri Lanka (Group Polder Development, 1982)

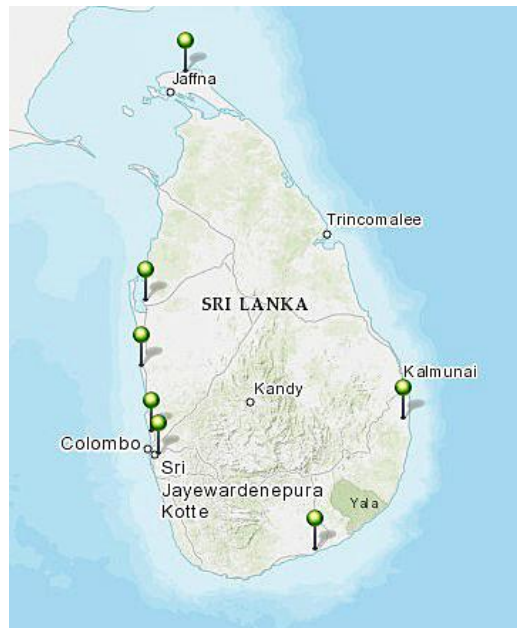


Figure 2. Location of the polders in Sri Lanka (source: esri – Batavialand)

The pictures by Prof. Adriaan Volker are shown in Table II.

References

- De Silva, S.H.C., 1983. *Reclaiming mutura-jewels - Sri Lanka*. In: Proceedings International Symposium 'Polders of the World'. International Institute for Land Reclamation and Improvement, Wageningen, the Netherlands.
- De Silva, 2001. *Modernization of drainage and flood protection facilities in Kalutara District - Western province of Sri Lanka*. MSC Thesis, IHE. Delft, the Netherlands.
- Group Polder Development, Department of Civil Engineering, Delft University of Technology, 1982. *Polders of the World. Compendium of polder projects*. Delft, the Netherlands
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Lelystad, October 2023

Table I. General characteristics of existing polders in Sri Lanka

Name	Reclamation	Area in ha	Type *)	Latitudes	Longitudes	Elevation in m+MSL	Land use
<i>Existing polders</i>							
Chilaw			LGS	7° 33' N	79° 48' E	3	Agriculture
Hambantota			RLL	6° 09' N	81° 08' E	3	Agriculture
Karavakn		810					
Kiralekele		972					
Madiwela			RLL	6° 52' N	79° 56' E	4	Agriculture
Muturajawela		2,429	RLL	7° 04' N	79° 52' E	3	Agriculture
Periya Kalapuwa			RLL	7° 09' N	81° 49' E	2	Agriculture
Puttalam			LGS	8° 3' N	79° 49' E	3	Agriculture
Tempalakaman		81					
Thondamannar		2,000	LGS	9° 48' N	80° 9' E	3	Agriculture
Total							

*) RLL = reclaimed low-lying land; LGS = land gained on the sea; DL = drained lake

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker









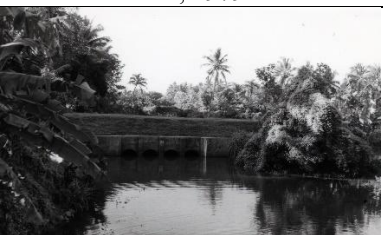
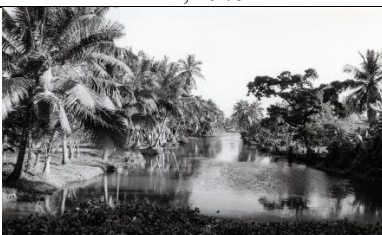
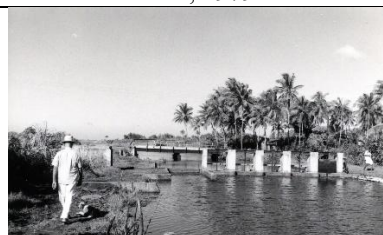
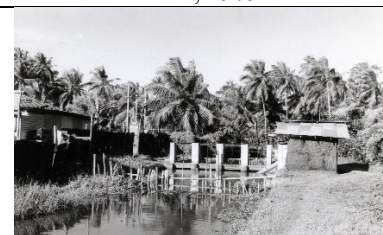
			
A1 001/IV.1.1 Lowland area, Possibly even polder area, 1979	A1 002/IV.1.2 Lowland area, Possibly even polder area, 1979	A1 003/IV.1.3 Lowland area, Possibly even polder area, 1979	A1 004/IV.1.4 Lowland area, Possibly even polder area, 1979
			
A1 005/IV.1.5 Lowland area, Possibly even polder area, 1979	A1 006/IV.1.6 Lowland area, Possibly even polder area, 1979	A1 007/IV.1.7 Lowland area, Possibly even polder area, 1979	A1 008/IV.1.8 Lowland area, Possibly even polder area, 1979
			
A1 009/IV.1.9 Lowland area, Possibly even polder area, 1979	A1 010/IV.1.10 Lowland area, Possibly even polder area, 1979	A1 011/IV.1.11 Lowland area, Possibly even polder area, 1979	A1 012/IV.1.12 Lowland area, Possibly even polder area, 1979

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)









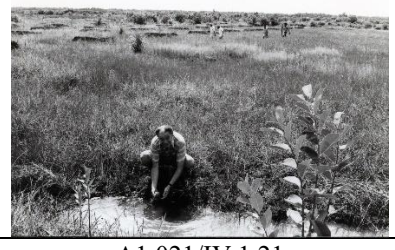
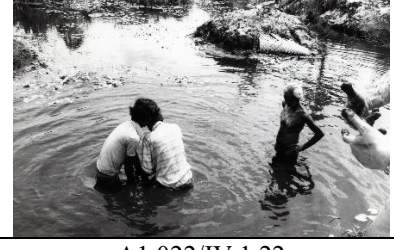
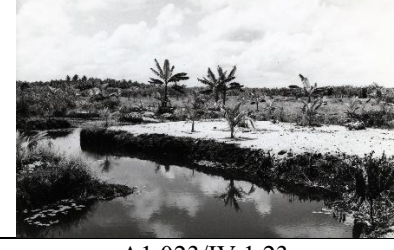
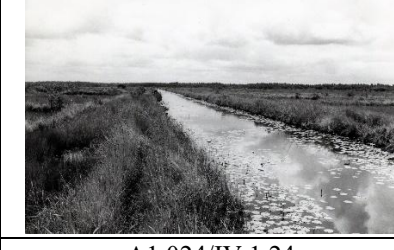
			
A1 013/IV.1.13 Lowland area, Possibly even polder area, 1979	A1 014/IV.1.14 Lowland area, Possibly even polder area, 1979	A1 015/IV.1.15 Lowland area, Possibly even polder area, 1979	A1 016/IV.1.16 Lowland area, Possibly even polder area, 1979
			
A1 017/IV.1.17 Lowland area, Possibly even polder area, 1979	A1 018/IV.1.18 Lowland area, Possibly even polder area, 1979	A1 019/IV.1.19 Lowland area, Possibly even polder area, 1979	A1 020/IV.1.20 Lowland area, Possibly even polder area, 1979
			
A1 021/IV.1.21 Lowland area, Possibly even polder area, 1979	A1 022/IV.1.22 Lowland area, Possibly even polder area, 1979	A1 023/IV.1.23 Lowland area, Possibly even polder area, 1979	A1 024/IV.1.24 Lowland area, Possibly even polder area, 1979

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)

			
A1 025/IV.1.25 Lowland area, Possibly even polder area, 1979	A1 026/IV.1.26 Lowland area, Possibly even polder area, 1979	A1 027/IV.1.27 Lowland area, Possibly even polder area, 1979	A1 028/IV.1.28 Lowland area, Possibly even polder area, 1979
			
A1 029/IV.1.29 Lowland area, Possibly even polder area, 1979	A1 030/IV.1.30 Lowland area, Possibly even polder area, 1979	A1 031/IV.1.31 Lowland area, Possibly even polder area, 1979	A1 032/IV.1.32 Lowland area, Possibly even polder area, 1979
			
A1 033/IV.1.33 Lowland area, Possibly even polder area, 1979	A1 034/IV.1.34 Lowland area, Possibly even polder area, 1979	A1 035/IV.1.35 Memorial stone	A1 036/IV.1.36 Lowland area, Possibly even polder area, 1979

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)

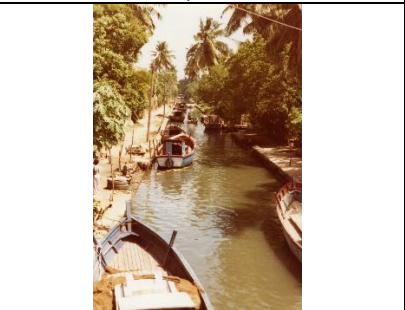


			
<p>A1 037/IV.1.37 Lowland area, Possibly even polder area, 1979</p>	<p>A1 038/IV.1.38 Lowland area, Possibly even polder area, 1979</p>	<p>A1 039/IV.1.39 Lowland area, Possibly even polder area, 1979</p>	<p>A1 040/IV.1.40 Lowland area, Possibly even polder area, 1979</p>
			
<p>A1 041/IV.1.41 Lowland area, Possibly even polder area, 1979</p>	<p>A1 042/IV.1.42 Lowland area, Possibly even polder area, 1979</p>	<p>A1 043/IV.1.43 Lowland area, Possibly even polder area, 1979</p>	<p>A1 044/IV.1.44 Lowland area, Possibly even polder area, 1979</p>
			
<p>A1 045/IV.1.45 Lowland area, Possibly even polder area, 1979</p>	<p>A1 046/IV.1.46 Lowland area, Possibly even polder area, 1979</p>	<p>A1 047/IV.1.47 Lowland area, Possibly even polder area, 1979</p>	<p>A1 048/IV.1.48 Prof. Adriaan Volker and two Sri Lankan officials</p>

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)









			
A1 049/IV.1.49 Possibly other lowland area	A1 050/IV.1.50 Possibly other lowland area	A1 051/IV.1.51 Possibly other lowland area	A1 052/IV.1.52 Possibly interesting display
			
A1 053/IV.1.53 Lowland area	A1 054/IV.1.54 Lowland area	A1 055/IV.1.55 Lowland area	A1 056/IV.1.56 Lowland area
			
A1 057/IV.1.57 Lowland area	A1 058/IV.1.58 Lowland area	A1 059/IV.1.59 Lowland area	A1 060/IV.1.60 Lowland area

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)

			
<p>A1 061/IV.1.61 Lowland area</p>	<p>A1 062/IV.1.62 Lowland area</p>	<p>A1 063/IV.1.63 Lowland area</p>	<p>A1 064/IV.1.64 Aerial picture of lowland area</p>
			
<p>A1 065/IV.1.65 Aerial picture of lowland area</p>	<p>A1 066/IV.1.66 Aerial picture of lowland area</p>	<p>A1 067/IV.1.67 Aerial picture of lowland area</p>	<p>A1 068/IV.1.68 Aerial picture of lowland area</p>
			
<p>A1 069/IV.1.69 Aerial picture of lowland area</p>	<p>A1 070/IV.1.70 Aerial picture of lowland area</p>	<p>A1 071/IV.1.71 Aerial picture of lowland area</p>	<p>A1 072/IV.1.72 Aerial picture of lowland area</p>

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)













			
A1 073/IV.1.73 Aerial picture of lowland area	A1 074/IV.1.74 Aerial picture of lowland area	A2 001/IV.2.1 Lowland area, July 1976	A2 002/IV.2.2 Discharge sluice, July 1976
			
A1 4 041/A.1.4.41 Muthu Rajawela	A1 4 042/A.1.4.42 Muthu Rajawela	A1 4 043/A.1.4.43 Muthu Rajawela	A1 4 044/A.1.4.44 Muthu Rajawela
			
A1 4 045/A.1.4.45 Muthu Rajawela	A5 2 051/A.5.2.51 Polder	C4 5 001/C.4.5.1 Discharge sluice in lowland area (May 1)	C4 5 002/C.4.5.2 Observation point in lowland area (May 1)

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)













			
<p>C4 5 003/C.4.5.3 Probably irrigation canal</p>	<p>C4 5 004/C.4.5.4 Distrubution structure</p>	<p>C4 5 005/C.4.5.5 Observation weir</p>	<p>C4 5 006/C.4.5.6 Weir</p>
			
<p>C4 5 007/C.4.5.7 Irrigation canal with a dike</p>	<p>C4 5 008/C.4.5.8 Inlet</p>	<p>C4 5 009/C.4.5.9 Inlet</p>	<p>C4 5 010/C.4.5.10 Inlet</p>
			
<p>C4 5 011/C.4.5.11 Inlet</p>	<p>C4 5 012/C.4.5.12 Dam</p>	<p>C4 5 013/C.4.5.13 Reservoir dam</p>	<p>C4 5 014/C.4.5.14 Reservoir dam</p>

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)













			
C4 5 015/C.4.5.15 Rice fields	C4 5 016/C.4.5.16 Rice fields	C4 5 017/C.4.5.17 Irrigation canal	C4 5 018/C.4.5.18 Traditional lifting device
			
C4 5 019/C.4.5.19 Traditional lifting device	C4 5 020/C.4.5.20 Rice fields	C4 5 021/C.4.5.21 Rice fields	C4 5 022/C.4.5.22 Irrigation canal
			
C4 5 023/C.4.5.23 Discharge sluice in lowland area	C4 5 024/C.4.5.24 Discharge sluice in lowland area	C4 5 025/C.4.5.25 Sea dike	C4 5 026/C.4.5.26 Discharge sluice in lowland area

Table II. Pictures on polders and lowlands in Sri Lanka by Prof. Adriaan Volker (continued)

			
<p>C4 5 027/C.4.5.27 Rice fields</p>	<p>C4 5 028/C.4.5.28 Probably a drain</p>	<p>C4 5 029/C.4.5.29 Test plot for water management of rice fields</p>	<p>C4 5 030/C.4.5.30 Lowland</p>
			
<p>C4 5 031/C.4.5.31 Small house in lowland area</p>			