

SUDAN



Source: esri

General

Sudan - officially the Republic of the Sudan - is bordered by Egypt in the North, the Red Sea, Eritrea and Ethiopia in the East, South Sudan in the South, the Central African Republic in the Southwest, Chad in the West and Libya in the Northwest. Before the Sudanese Civil War, South Sudan was part of Sudan, but it became independent in 2011. Now Sudan has an area of 189 Mha (million hectares) with, in 2024, a population of 50.4 million, or 0.27 persons per ha (Wikipedia and United Nations, 2024).

Climate and geography

The amount of rainfall increases towards the South. The central and the northern part have extremely dry desert areas such as the Nubian Desert in the Northeast and the Bayuda Desert in the East. Sudan's rainy season lasts for about three months (July to September) in the North, and up to six months (June to November) in the South. The sunshine duration is very high all over the country, but especially in the deserts where it could soar to over 4,000 hour per year (source: Wikipedia).

The terrain is generally flat plains, broken by several mountain ranges. In the west, the Deriba Caldera, located in the Marrah Mountains, is the highest point in Sudan. In the east are the Red Sea Hills. In the South there are swamps and rainforest.

The River Nile divides the country into the eastern and western part. The Blue Nile and White Nile rivers meet in Khartoum to form the River Nile, which flows northwards through Egypt to the Mediterranean Sea. The Blue Nile's course through Sudan is nearly 800 km long and is joined by the Dinder and Rahad rivers between Sennar and Khartoum. Within Sudan the White Nile has no significant tributaries. There are several dams on the Blue and White Niles. Among them are the Sennar and Roseires Dams on the Blue Nile, and the Jebel Aulia Dam on the White Nile. There is also Lake Nubia on the Sudanese-Egyptian border.

The dry regions are plagued by sandstorms, known as *haboob*, which can completely block out the sun. In the northern and western semi-desert areas, people rely on the scant rainfall for basic agriculture and many are nomadic, travelling with their herds of sheep and camels. (source: Wikipedia).

Existing polders

In Sudan there is the large Gezira Irrigation Scheme with an area of about 1 million ha. The area receives its irrigation water from the Blue Nile. The excess water is drained back to the Blue Nile south of Khartoum. The scheme is provided with a drainage system as well. Two types of drainage are distinguished: i) escape and preventive drainage; ii) drainage of depressions. The areas that need escape or preventive drainage are not really polders. However, the depressions are in fact polder areas, while drainage by pumping is required to enable agricultural exploitation. However, the pumped drainage systems of the depressions are generally not really operational. Therefore their areas cannot clearly be identified.

Characteristic data of the existing polders in Sudan are shown in Table I.

Proposed polders

No proposed polders could be identified.

Location of the polders in Sudan as shown on the World polder map

The location of the polders in Sudan is shown in Figure 1.

The pictures by Prof. Bart Schultz are shown in Table II.



Figure 7. Location of the polders in Sudan (source: esri – Batavialand)

References

- Group Polder Development, Department of Civil Engineering, Delft University of Technology. 1982. *Polders of the World. Compendium of polder projects*. Delft, the Netherlands.
- United Nations, Department of Economic and Social Affairs, Population Division. 2024. *World population prospects, medium prognosis. The 2024 revision*. New York, USA.

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Lelystad, November 2024

Table I. General characteristics of existing polders in Sudan

Name	Reclamation	Area in ha	Type *)	Latitudes	Longitudes	Elevation in m+MSL	Land use
Depressions/polders in Gezira Scheme			RLL	14° 38' N	33° 06' E	403	Agriculture
Total							

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

Table II. Pictures by Prof. Bart Schultz in a polder in the Gezira Irrigation Scheme in Sudan

		
<p>IMG_2773 Drainage pumping station of one of the depressions in the Gezira Scheme - 22 February 2016</p>	<p>IMG_2776 Swamp vegetation in one of the depressions in the Gezira Scheme - 22 February 2016</p>	<p>IMG_2777 Track at small dike along one of the depressions in the Gezira Scheme - 22 February 2016</p>
		
<p>IMG_2778 Swamp vegetation in one of the depressions in the Gezira Scheme - 22 February 2016</p>	<p>IMG_2779 Track at small dike along and drain in one of the depressions in the Gezira Scheme - 22 February 2016</p>	