MALI

Source: esri

General

Mali - officially the Republic of Mali - is a land-locked country that consists of eight regions. Its borders in the North reach deep into the middle of the Sahara Desert, while the country's southern part, where the majority of inhabitants live, features the Niger and Senegal rivers. It borders with Algeria in the North, Niger and Burkina Faso in the East, Ivory Coast and Guinea in the South, and Senegal and Mauritania in the West. Its area is just over 124 Mha (million hectares) with, in 2024, a population of 24.5 million, or 0.2 persons per ha (Wikipedia and United Nations, 2024).

Climate and Geography

Mali lies in the torrid zone and is among the hottest countries in the world. The thermal equator, which matches the hottest spots year-round on earth crosses the country. Most of Mali receives negligible rainfall and droughts are very frequent. Late June to early December is the rainy season in the southernmost area. During this time, flooding of the Niger River is common, creating the Inner Niger Delta. The vast northern desert part of Mali has a hot desert climate with long, extremely hot summers and scarce rainfall, which decreases northwards. The central area has a hot semi-arid climate with very high temperatures year-round, a long, intense dry season and a brief, irregular rainy season. The little southern band possesses a tropical wet and dry climate, very high temperatures year-round with a dry season and a rainy season (source: Wikipedia).

Mali has five terrestrial ecoregions: Sahelian Acacia savanna, West Sudanian savanna, Inner Niger Delta flooded savanna, South Saharan steppe and woodlands, and West Saharan montane xeric woodlands. The Inner Delta of the Niger River has an area of 4,1 Mha. As an example the inundated area at a level of 6.30 m at the Mopti scale is shown in Figure 1 (Marie, 2000).

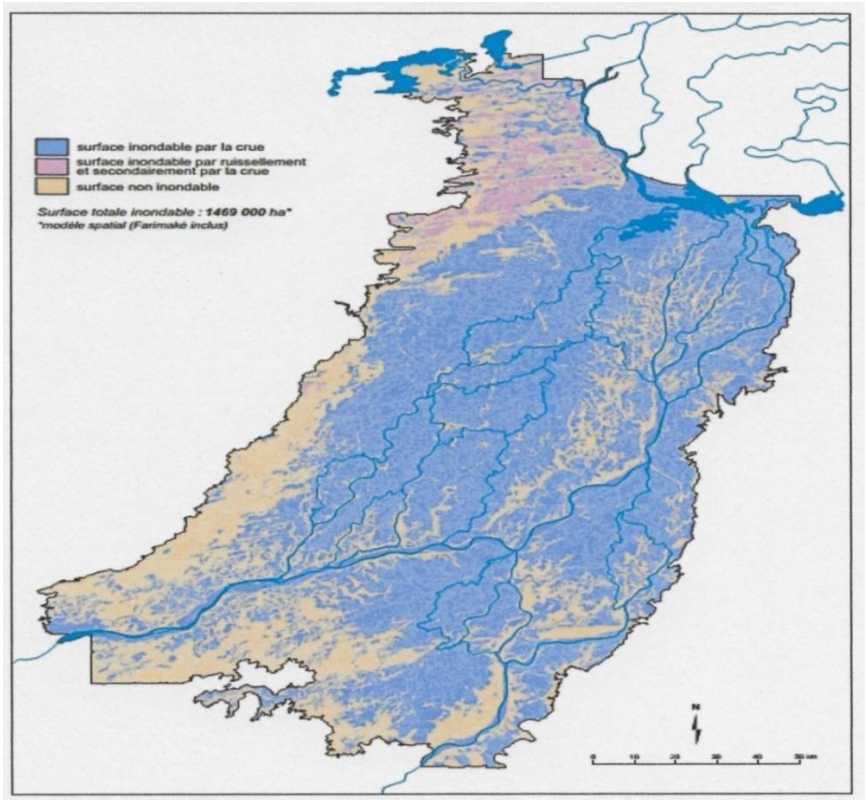

Figure 1. Inundated area at a water level of 6.30 m at the scale of Mopti (Marie, 2000)

The World Bank (1981) mentioned that Mali had embarked on a programme to construct 120,000 ha rice polders in the Inner Delta of the Niger River, about 55,000 ha of which located in the Mopti area. In this area the Mopti I Rice Project comprised of (World Bank, 1981, 1987): i) construction of three polders, including land preparation, with a rice cultivated area of about 13,000 ha; ii) rehabilitation of five polders, including land preparation, with a rice cultivated area of about 18,000 ha; iii) land preparation on 2,000 ha of an existing polder; iv) construction of buildings for the project; v) establishment of a project organisation for the State company Operation Riz Mopti (ORM), including provision of farm machinery and technical assistance to ORM. OMR was established in 1972 to develop and exploit several rice polders located in the Inner Delta of the Niger and Bani rivers. Operation and maintenance of the polders, allocation of land in the new polders, production and distribution of selected seeds, and provision of credit and extension services by the project organisation in all areas mentioned above, plus in existing polders with a rice cultivated area of 2,700 ha; vi) establishment and operation of an agricultural research station; vii) preparation of a feasibility study for a second rice project in the Mopti area.

The Mopti II Rice Project comprised of (World Bank, 1987): i) construction of four polders (together 8,800 ha); ii) improvement of polders developed under the Mopti I Rice Project; iii) deep ploughing of the newly developed polders and of 14,285 ha of polders developed under the Mopti I Rice Project; iv) construction of stores, workshops, offices, houses, and training centres; v) acquisition of vehicles, machinery, equipment, and two ferries; vi) an applied research and a credit program; vii) technical assistance. The Mopti Area Development Project is a follow-up of the Mopti II Rice Project. The project was approved at 21 May 1985 and completed at 31 December 1992. As far as the polders are concerned, the project concentrated on improvement works in existing polders (World Bank, 1994)

Moens en Wanders (1983) showed a map with a Project of Office du Niger. From this map several polder areas can be derived (Figure 2). Moens en Wanders (1983) also mentioned ORM. At the time of their report the total area of the 18 polders was 39,000 ha.

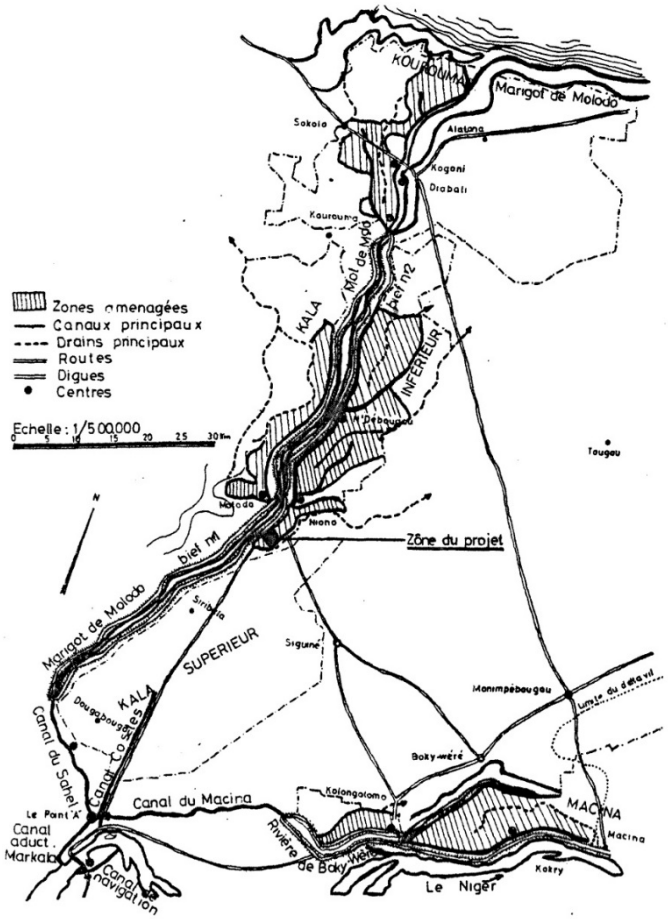

Figure 2. Project areas of Office Du Niger (Woens en Wanders, 1983)

Poncet and Troublet (1994) have published a map from which to a certain extent the polders in the Inner Delta of the Niger River can be derived (Figure 3).

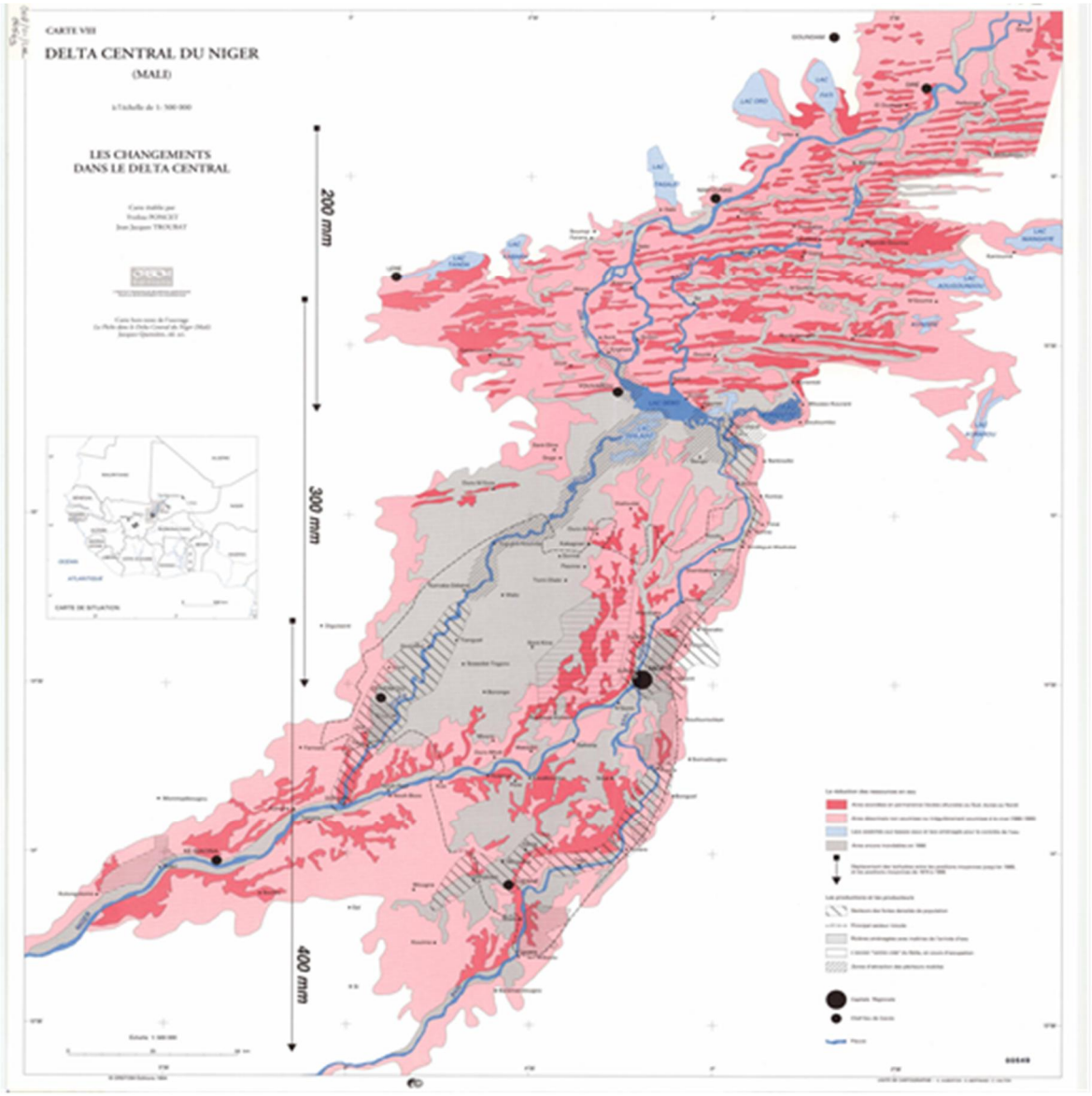

Figure 3. Map from which to a certain extent the polders in the Inner Delta of the Niger River can be derived (Poncet and Troublet, 1994)

Wymenga *et al*. (2002) and the International Union for Conservation of Nature (UICN) (2009) described that the Inner Delta is also a Ramsar site and gave information on the environmental values. Zwarts (2010) gave useful information on the rainfall, river flow, climatic and human induced impacts in the area of the Inner Delta. Dependent on the magnitude of the annual flood a large area will be inundated.

At 4 June 2016 the 4 km long Cornelis Lely Dike was inaugurated. The dike protects the city of Mopti against flooding by the Niger River (Figure 4) (Dutch Water Sector, 2016).

Existing polders

Some names of polders, as mentioned by the World Bank (1981, 1987, 1994) are: Dia-Tenenkou Polders, Ibetemi Polder, Karbaye Polder, Mopti-Sud Polder, Sarantomo Syn Polder, Sofara Polder and Soufouroulaye Polder.

General characteristics of the polders in Mali are shown in Table I.

Figure 4. Cornelis Lely dike at Mopti, Mali (Dutch Water Sector, 2016)

Proposed polders

No proposed polders could be identified.

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

The location of the polders in Mali is shown in Figure 5.

Figure 5. Location of the polders in Mali (source: esri – Batavialand)

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Lelystad, August 2024

Table I. General characteristics of existing polders in Mali

Name	Reclamation	Area in ha	Type *)	Latitudes	Longitudes	Elevation in m+MSL	Land use
Existing polders		>2,700	RLL				
18 polders exploited by *ORM*	1972-1983	39,000	RLL	14° 48' N	5° 59' W	274	Agriculture
Mopti I Rice project:				14° 30' N	4° 10' W	267	Agriculture
• construction of three polders		13,300					
* Bougoula	1972-1978						
• rehabilitation of five polders		13,200					
• land preparation of 2000 ha in an existing polder		10,300					
Bougala Polder			RLL				
Dia-Tenenkou Polders			RLL				
Ibetemi Polder			RLL				
Karbaye Polder			RLL				
Mopti-Sud Polder			RLL				
Sarantomo Syn Polder			RLL				
Sofara Polder			RLL				
Soufouroulaye Polder			RLL				
Mopti II Rice project - construction of four polders:	1978-1983	8,800		14° 30' N	4° 10' W	267	Agriculture
• Saré-Mala Polder			RLL				
• Ouronema Polder			RLL				
• Tiroguel Polder			RLL				
• Torokoro Polder			RLL				
Total		48,300					

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