

BRAZIL



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General

Brazil - officially the Federative Republic of Brazil - is the largest country in both South America and Latin America. Bounded by the Atlantic Ocean in the East, Brazil has a coastline of 7,491 km. It borders all other South American countries except Ecuador and Chile and covers 47.3% of the continent's land area. The country has an area of 850 Mha (million hectares) with in 2020 a population of 213 million, or 0.25 persons per ha. This makes Brazil the world's fifth-largest country by area and the sixth-most populous (Wikipedia and United Nations, 2019).

Climate and geography

The climate of Brazil comprises a wide range of weather conditions across a large area and varied topography, but most of the country is tropical. According to the Köppen system, Brazil hosts six major climatic subtypes: desert, equatorial, tropical, semi-arid, oceanic and subtropical. Many regions have starkly different micro-climates. An equatorial climate characterizes much of northern Brazil. There is no real dry season, but there are some variations in the period of the year when most rain falls. Temperatures average 25 °C, with more significant temperature variation between night and day than between seasons. Over Central Brazil rainfall is more seasonal, characteristic of a savanna climate. This region is as extensive as the Amazon River Basin, but has a very different climate as it lies farther south at a higher altitude. In the interior Northeast, seasonal rainfall is even more extreme. The semi-arid climatic region generally receives less than 800 mm of rain, most of which generally falls in a period of three to five months and occasionally less than this, creating long periods of drought (source: Wikipedia).

The different climatic conditions produce environments ranging from equatorial rainforests in the North and semi-arid deserts in the Northeast, to temperate coniferous forests in the South and tropical savannas in Central Brazil.

Existing polders

The World Bank (1975) has published an appraisal report and a project performance audit report (1985) for the Lower São Francisco Polders Project (Figure 1). Based on these reports it can be concluded that this project include flood protection for an area of 32,000 ha. This implies six large so-called *varzeas*: Marituba (6650 ha), Betume (8100 ha), Boacica (7200 ha), Brejo Grande (4800 ha), Cotinguiba (1600 ha), Pindoba (1150 ha) and small *varzeas* (2500 ha). Although not specifically mentioned this are polders.

In addition, according to the Group Polder Development (1982) there are polders near the Rio Parana in the southern part of Brazil, a rather similar condition as in the northern part of Argentina. In addition there are some polders in the Amazon area. However, specific areas have not been given.

General characteristics of the existing polders in Brazil are shown in Table I.

Proposed polders

No proposals for new polders have been identified.

References

- Group Polder Development, 1982. *Polders of the World. Compendium of polder projects*. Delft, the Netherlands
- United Nations, Department of Economic and Social Affairs, Population Division. 2019. *World population prospects, medium prognosis. The 2019 revision*. New York, USA.
- World Bank, 1975. *Appraisal of the Lower Sao Francisco Polders Project*, Brazil. Latin America and

Table I. General characteristics of existing polders in Brazil

Name	Reclamation	Area in ha	Type *)	Latitudes	Longitudes	Elevation in m+MSL	Land use
Marituba		6650	RLL	10° 23' S	36° 32' W	4	rice
Betume		8100	RLL	10° 27' S	36° 35' W	2	rice
Brejo Grande		4800	RLL	10° 26' S	36° 27' W	2	rice
Boacica		7200	RLL	10° 15' S	36° 40' W	7	rice
Cotinguiba		1600	RLL	10° 15' S	36° 46' W	7	rice
Pindoba		1150	RLL	10° 17' S	36° 43' W	6	rice
Small <i>varzeas</i>		2500	RLL				rice
Polders in the Rio Parana area			RLL				
Polders in the Amazon area			RLL				
Total		32,000					

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