

ARGENTINA



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General

Argentina - officially the Argentine Republic - is a federal republic located mostly in the southern half of South America. Sharing the bulk of the Southern Cone with its neighbour Chile in the West, the country is also bordered by Bolivia and Paraguay in the North, Brazil in the Northeast, Uruguay and the South Atlantic Ocean in the East, and the Drake Passage in the South. The country has a mainland area of 278 Mha (million hectares) with in 2020 a population of 45.2 million, or 0.16 persons per ha (Wikipedia and United Nations, 2019).

Climate and geography

Although the most populated areas are generally temperate, Argentina has an exceptional amount of climate diversity, ranging from subtropical in the North to polar in the far South. The average annual precipitation ranges from 150 mm in the driest parts of Patagonia to over 2,000 mm in the westernmost parts of Patagonia and the northeastern parts of the country.

The lowest point of the country is Laguna del Carbón in the San Julián Great Depression at 105 m-MSL (mean sea level), also the lowest point in the Southern and Western Hemispheres. In addition there are three other deep saline depressions: Salina Grande and Salina Chica at 42 m-MSL, and Bajo del Gualicho at 41 m-MSL. However, these are no polders, but natural depressions (source: Wikipedia).

Large parts of the delta of the Parana River are flooded most of the year. Canals have been constructed, serving both drainage and water traffic. The spoil from these canals has been dumped alongside, forming artificial dikes, which like the natural levees, are inhabited and cultivated. The lower parts of the areas have been drained by open drains, thus allowing the cultivation of these lands. The population is scattered along the rivers, the navigable creeks and the canals. Most people live in pile dwellings due to the frequent inundations, and as a result of these precautions even the highest floods cause very few casualties. In a few places, some degree of flood protection has been achieved by surrounding the fields with dikes. These dikes are high enough to keep out the regular inundations but are unable to withstand the major floods. Dikes surrounding urban areas have been designed for overtopping with a chance of occurrence of once in 1,000-10,000 years. (Centre for Civil Engineering Research and Codes (CUR) and Ministry of Transport, Public Works and Water management, 1993).

Existing polders

Sallabar (1983) gives a list of polders in the Delta of Parana River. The data may have been derived from NEDECO (1962). The characteristic data of these polders are shown in Table I.

Proposed polder

Sallabar (1983) also describes a proposed open polder of 90,000 ha in the Parana Delta (Figure 1). This project would be a first phase of a much larger reclamation in the delta.

Pictures of polders

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



Figure 1. Proposed project for an open polder of 90,000 ha in the Parana Delta (Sallabar, 1983)

References

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Table I. General characteristics of existing polders in Argentina

| Name | Reclamation | Area in ha | Type *) | Latitudes | Longitudes | Elevation in m+MSL | Land use |
|---------------|-------------|------------|---------|-----------|------------|--------------------|-------------|
| Lechiguanas | | 23500 | RLL | 33° 33' S | 59° 35' W | 4 | Agriculture |
| Mazaruca | | 5000 | RLL | 33° 35' S | 59° 17' W | 3 | Agriculture |
| Don Ernesto | | 500 | RLL | 34° 31' S | 58° 57' W | 27 | Agriculture |
| Tajber | | 800 | RLL | | | | Agriculture |
| INTA | | 56 | RLL | | | | Agriculture |
| Las Carabelas | | 1000 | RLL | 32° 06' S | 64° 08' W | 423 | Agriculture |
| Don Antonio | | 4600 | RLL | 31° 36' S | 60° 01' W | 92 | Agriculture |
| Victoria | | 4900 | RLL | 32° 36' S | 60° 08' W | 50 | Agriculture |
| Don Mario | | 575 | RLL | 33° 00' S | 58° 28' W | 5 | Agriculture |
| Don Humber | | 720 | RLL | | | | Agriculture |
| Don Orlando | | 1970 | RLL | | | | Agriculture |
| Impora | | 800 | RLL | | | | Agriculture |
| Total | | 44,421 | | | | | |

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

Table II. Pictures and slides on polders in Argetina by Prof. Adriaan Volker

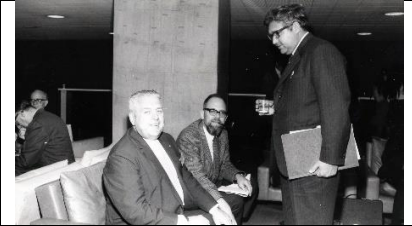



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| <p>A1 002/V.1.2 Prof. Volker 4th meeting of the Technical Committee for hydrology of the World Meteorological Organisation in Buenos Aires, 3-17 April 1972</p> | <p>A1 003/V.1.3 Volker 4th meeting of the Technical Committee for hydrology of the World Meteorological Organisation in Buenos Aires, 3-17 April 1972</p> | <p>A1 004/V.1.4 Lowland area</p> | <p>A1 005/V.1.5 Lowland area</p> |
|  |  |  |  |
| <p>A1 006/V.1.6 Lowland area</p> | <p>A1 007/V.1.7 Lowland area</p> | <p>A1 008/V.1.8 Lowland area</p> | <p>A1 009/V.1.9 Flooding of lowland area</p> |
|  |  |  |  |
| <p>A1 010/V.1.10 Flooding of lowland area</p> | <p>A1 011/V.1.11 Flooding of lowland area</p> | <p>A1 012/V.1.12 Flooding of lowland area</p> | <p>A1 013/V.1.13 Flooding of lowland area</p> |

Table II. Pictures and slides on polders in Argetina by Prof. Adriaan Volker (continued)













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|  |  |  |  |
| A1 014/V.1.14 Flooding of lowland area | A1 015/V.1.15 Aerial picture of a lowland area | A1 016/V.1.16 Aerial picture of a lowland area | A1 017/V.1.17 Aerial picture of a lowland area |
|  |  |  |  |
| A1 018/V.1.18 Warehouse Puerto Barranquas, lowland area | A1 019/V.1.19 Lowland area | A1 020/V.1.20 Lowland area | A3 1 037/A.3.1.37 Flooding |
|  |  |  |  |
| A3 1 038/A.3.1.38 Flooding | A3 1 039/A.3.1.39 Flooding | A3 1 040/A.3.1.40 Marsh vehicle | A3 2 041/A.3.2.41 Flooding |

Table II. Pictures and slides on polders in Argetina by Prof. Adriaan Volker (continued)

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|  |  |  |  |
| A3 2 042/A.3.2.42 Flooding | A3 2 043/A.3.2.43 Flooding | A3 2 044/A.3.2.44 Flooding | A3 2 045/A.3.2.45 Flooding |
|  |  |  |  |
| A3 2 046/A.3.2.46 Flooding | A3 2 047/A.3.2.47 Flooding | A3 2 048/A.3.2.48 Flooding | A3 2 049/A.3.2.49 Flooding |
|  |  | | |
| A3 2 057/A.3.2.57 Lowland area | A3 2 058/A.3.2.58 Lowland area | | |