

TAIWAN



Source: esri

General

Taiwan is located in East Asia. The area of Taiwan consists of several islands. The main island makes up 99% of the total area. Its neighbours include the People's Republic of China in the West, Japan in the Northeast, and the Philippines in the South. The area of Taiwan is 3.6 Mha (million hectares) with, in 2022, a population of 23.9 million, or 6.6 persons per ha (Wikipedia and United Nations, 2022).

Climate and geography

Taiwan lies on the Tropic of Cancer, and its general climate is marine tropical. The northern and central regions are subtropical, whereas the South is tropical. The average rainfall is 2,600 mm per year; the rainy season is concurrent with the onset of the summer East Asian Monsoon in May and June. The entire island experiences hot, humid weather from June through September. Typhoons are most common in July, August and September. During the winter (November to March), the Northeast experiences steady rain, while the central and southern parts of the island are mostly sunny (source: Wikipedia).

The main island is a tilted fault block, characterized by the contrast between the eastern two-thirds, consisting mostly of five rugged mountain ranges parallel to the east coast, and the flat to gently rolling plains of the western third, where the majority of Taiwan's population reside. The tectonic boundary that formed the mountain ranges is still active, and the island experiences many earthquakes, a few of them highly destructive (source: Wikipedia).

Taiwan contains four terrestrial ecoregions: Jian Nan subtropical evergreen forests, South China Sea Islands, South Taiwan monsoon rain forests, and Taiwan subtropical evergreen forests. The eastern mountains are heavily forested and home to a diverse range of wildlife, while land use in the western and northern lowlands is intensive (source: Wikipedia).

In several coastal areas of Taiwan substantial subsidence occurs, partly caused by extraction of deep groundwater under soft layers. Examples of such areas, expectation for the future and measures taken are, for example, given by Mong - Heiung (1983) and Wang *et al.* (2018).

Existing polders

In the period 1625 – 1662 hydraulic projects, polders, bridges and roads have been constructed by joint Chinese and Dutch efforts (source: Wikipedia).

In a power point presentation by the Land Reclamation Administration Taiwan Provincial Government the polders are mentioned that are shown in Figure 1.

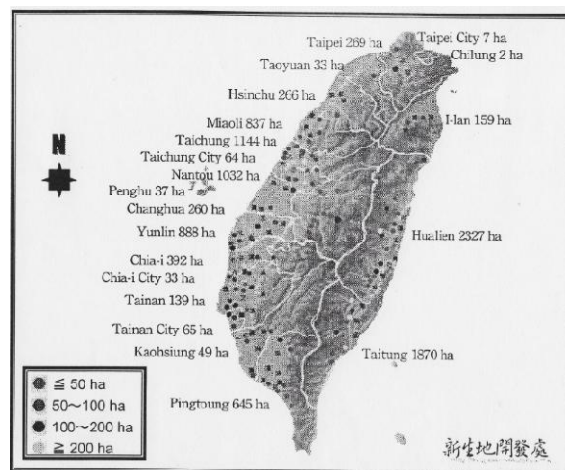


Figure 1. Distribution of reclaimed land in Taiwan (Land Reclamation Administration Taiwan Provincial Government)

2. In addition the Group Polder Development (1982) mentions the polders that are shown in Figure

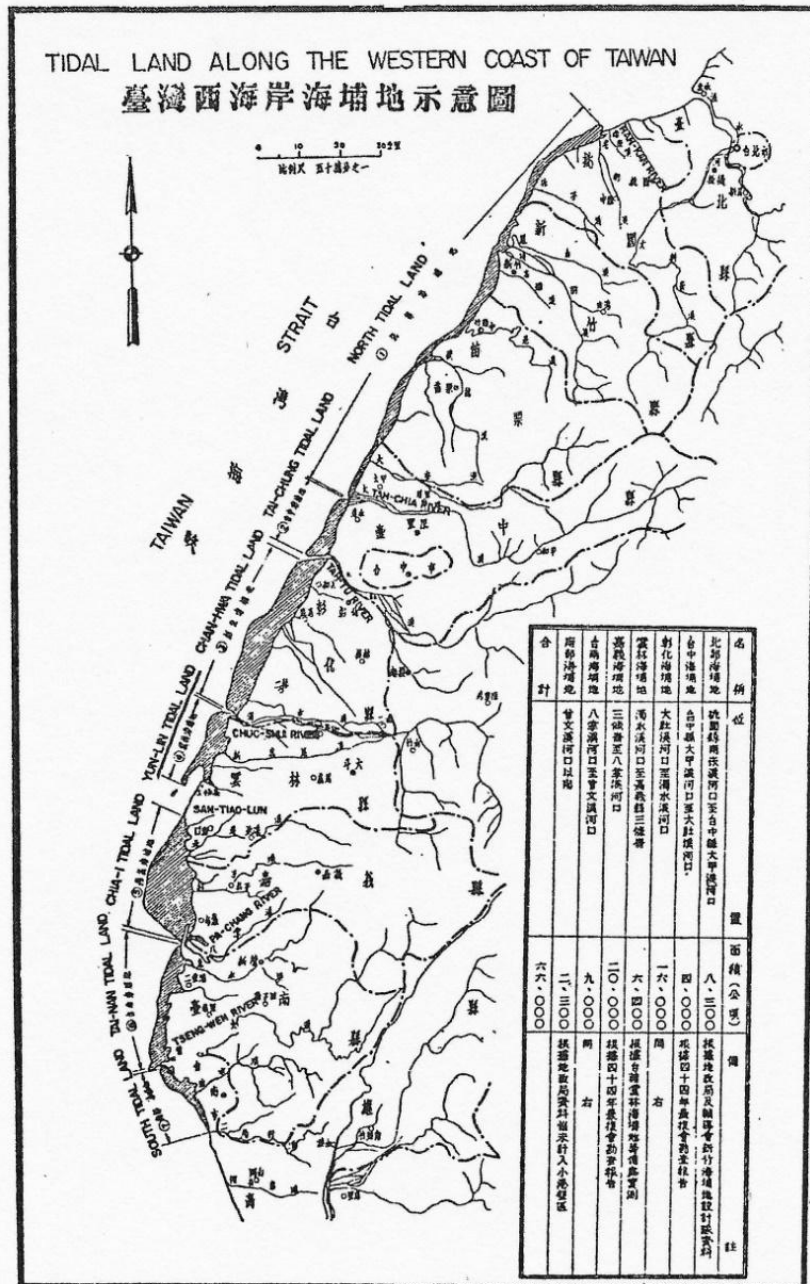


Figure 2. Tidal land development along the west coast of Taiwan (Group Polder Development, 1982)

General characteristics of the polder in Taiwan are shown in Table I.

Proposed polders

No proposed polders have been identified.

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

The location of the polders in Taiwan is shown in Figure 3.

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



Figure 3. Location of the polders in Taiwan (source: esri – Batavialand)

References

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Bart Schultz


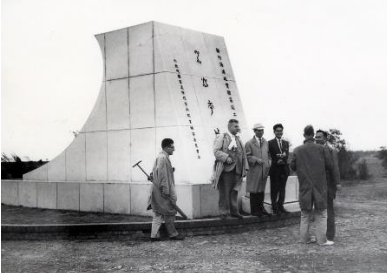




Lelystad, October 2023

Table I. General characteristics of existing polders in Taiwan

Name	Reclamation	Area in ha	Type *)	Latitudes	Longitudes	Elevation in m+MSL	Land use
Ao-Ku Polder	1960	1000	LGS	23° 50' N	120° 17' E	0	
Chen-Wun Polder	1963	1600	LGS				
North Polder	1966	314	LGS				
Wan-Kung Polder	1968	462	LGS				
Yu-Pu Polder	1971	820	RLL	24° 08' N	120° 28' E	3	Rural area
Tai-Hai Polder	1974	777	LGS				
Chi-Ku I & II Polder	1977	750	LGS				
Ho-Mei Polder	1978	160	LGS	24° 07' N	120° 30' E	11	Urban area
Changhua	1993	260	RLL	24° 04' N	120° 32' E	13	Urban area
Yun Lin	1998	888	LGS				
Chia-i		392	RLL	23° 29' N	120° 27' E	33	Urban area
Chia-I City		33	RLL	23° 29' N	120° 27' E	33	Urban area
Chilung		2					
Choshui Fan			RLL				
Hsin Chu		266	LGS	24° 49' N	120° 55' E	3	
Hualien		2327	RLL	23° 54' N	121° 35' E	20	Rural area
I-lan		159	RLL	24° 45' N	121° 48' E	3	Rural area
Kaohsiung		49	LGS	22° 36' N	120° 19' E	2	Urban area
Linbian		4000	LGS	22° 25' N	120° 31' E	-1	
Miaoli		837	RLL	24° 38' N	120° 46' E	4	Rural area
Nantou		1032	RLL	23° 55' N	120° 41' E	78	Urban area
Penghu		37	RLL	23° 36' N	119° 39' E	3	Rural area
Pingtung		645	RLL	22° 33' N	120° 33' E	12	Urban area
Taichung		1144	RLL	24° 13' N	120° 32' E	4	Rural area
Taichung City		64	RLL	24° 09' N	120° 40' E	78	Urban area
Tainan		139	LGS	23° 01' N	120° 10' E	0	Rural area
Tainan City		65	RLL	23° 00' N	120° 13' E	19	Urban area
Taipei		269	LGS	25° 08' N	121° 29' E	-3	Rural area
Taipei City		7	LGS	25° 14' N	121° 38' E	1	Rural area
Taitung		1870	RLL	22° 45' N	121° 10' E	4	Urban area
Taoyuan		33	RLL	24° 59' N	121° 18' E	100	Urban area
Total		20,667					

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

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

			
<p>A6 040/XI.6.40 Pilot Polder Hsinchu, Taiwan, 22 November 1962</p>	<p>A6 041/XI.6.41 Pilot Polder Hsinchu, Taiwan, 22 November 1962</p>	<p>A6 042/XI.6.42 Group picture in front of the railway station of Taichung, 23 November 1962</p>	<p>A6 043/XI.6.43 Group picture in front of the railway station of Taichung, 23 November 1962</p>
			
<p>A6 044/XI.6.44 Group picture in front of a Bhoeda statue, 23 November 1962</p>	<p>A6 045/XI.6.45 Prof. Adriaan Volker at a boat in Tainan, 25 November 1962</p>		

*) Batavialand/orginal

Table III. Pictures on polders and lowlands in Taiwan by Prof. Bart Schultz













			
<p>D6 12 001/XII-1 Dike along a river close to the mouth near Hualien, 20 – 26/6 1998</p>	<p>D6 12 002/XII-2 Dike along a river close to the mouth near Hualien, 20 – 26/6 1998</p>	<p>D6 12 003/XII-3 Dike along a river close to the mouth near Hualien, 20 – 26/6 1998</p>	<p>D6 12 004/XII-4 Road at the inner side of a dike along a river close to the mouth near Hualien, 20 – 26/6 1998</p>
			
<p>D6 12 005/XII-5 Road at the inner side of a dike along a river close to the mouth near Hualien, 20 – 26/6 1998</p>	<p>IMG_3301 Dike and discharge sluice near due to subsidence inundated land north of Tainan, 2 August 2016</p>	<p>IMG_3302 Dike and discharge sluice near due to subsidence inundated land north of Tainan, 2 August 2016</p>	<p>IMG_3303 Dike and discharge sluice near due to subsidence inundated land north of Tainan, 2 August 2016</p>
			
<p>IMG_3304 Due to subsidence inundated land north of Tainan, 2 August 2016</p>	<p>IMG_3311 Fish ponds north of Tainan, 2 August 2016</p>	<p>IMG_3312 Fish ponds north of Tainan, 2 August 2016</p>	<p>IMG_3313 Fish ponds north of Tainan, 2 August 2016</p>

Table III. Pictures on polders and lowlands in Taiwan by Prof. Bart Schultz (continued)

			
IMG_3314 Fish ponds north of Tainan, 2 August 2016	IMG_3315 Fish ponds north of Tainan, 2 August 2016	IMG_3317 Fish ponds north of Tainan, 2 August 2016	IMG_3318 Fish ponds north of Tainan, 2 August 2016
			
IMG_3319 Artificial dune to protect Haomiliao Wetland, 2 August 2016	IMG_3320 Artificial dune to protect Haomiliao Wetland, 2 August 2016	IMG_3321 Artificial dune to protect Haomiliao Wetland, 2 August 2016	IMG_3322 Artificial dune to protect Haomiliao Wetland, 2 August 2016
			
IMG_3323 Artificial dune to protect Haomiliao Wetland, 2 August 2016	IMG_3324 Fish ponds behind artificial dune to protect Haomiliao Wetland, 2 August 2016	IMG_3325 Artificial dune to protect Haomiliao Wetland, 2 August 2016	IMG_3326 Artificial dune to protect Haomiliao Wetland, 2 August 2016

Table III. Pictures on polders and lowlands in Taiwan by Prof. Bart Schultz (continued)













			
<p>IMG_3327 Dam to protect Haomiliao Wetland, 2 August 2016</p>	<p>IMG_3328 Dam to protect Haomiliao Wetland, 2 August 2016</p>	<p>IMG_3341 Fish ponds behind artificial dune to protect Haomiliao Wetland, 2 August 2016</p>	<p>IMG_3344 Hydraulic laboratory of Tainan, 2 August 2016</p>
			
<p>IMG_3345 View of one of the canals of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3346 Pumping station of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3347 Pumping station of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3348 One of the canals of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>

Table III. Pictures on polders and lowlands in Taiwan by Prof. Bart Schultz (continued)

			
<p>IMG_3349 One of the canals of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3350 One of the canals of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3351 One of the canals of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3352 One of the canals of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>
			
<p>IMG_3353 Office of the management authority with in it the pumping station of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3354 Name plates related to the water management of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3355 Inlet of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>	<p>IMG_3356 Inlet of the Southern Taiwan Science Park. Computer chips are produced here. The park is located in a polder with as far as I know the largest pumping capacity per unit area in the world, 4 August 2016</p>