TAIWAN

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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 2020 a population of 23.8 million, or 6.6 persons per ha (Wikipedia and United Nations, 2019).

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 2600 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.

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.

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 (Wikipedia).

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

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

Characteristics of the polders in Taiwan are shown in Table I.

Proposed polders

No proposed polders have been identified.

Pictures of polders

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

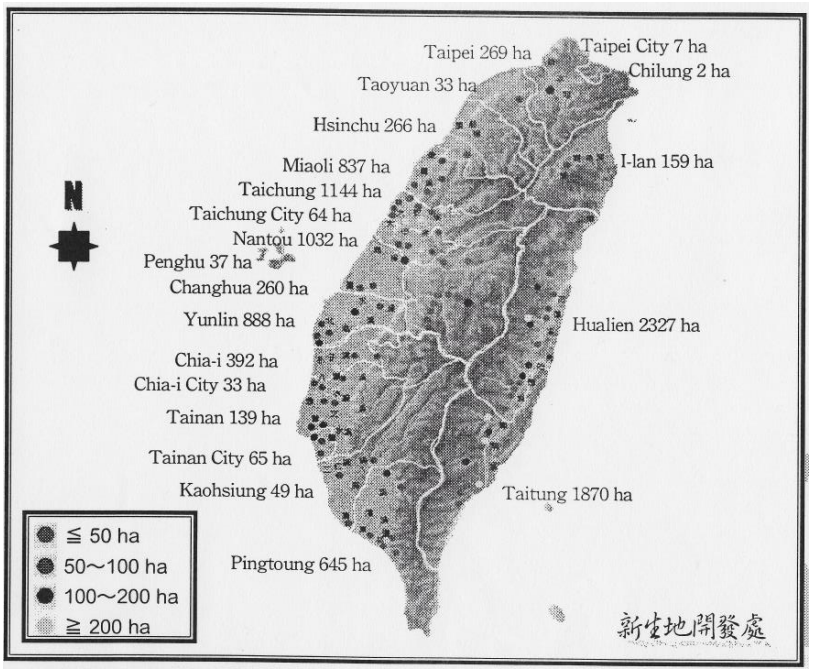

Figure 1. Distribution of reclaimed land in Taiwan (Land Reclamation Administration Taiwan Provincial Government)

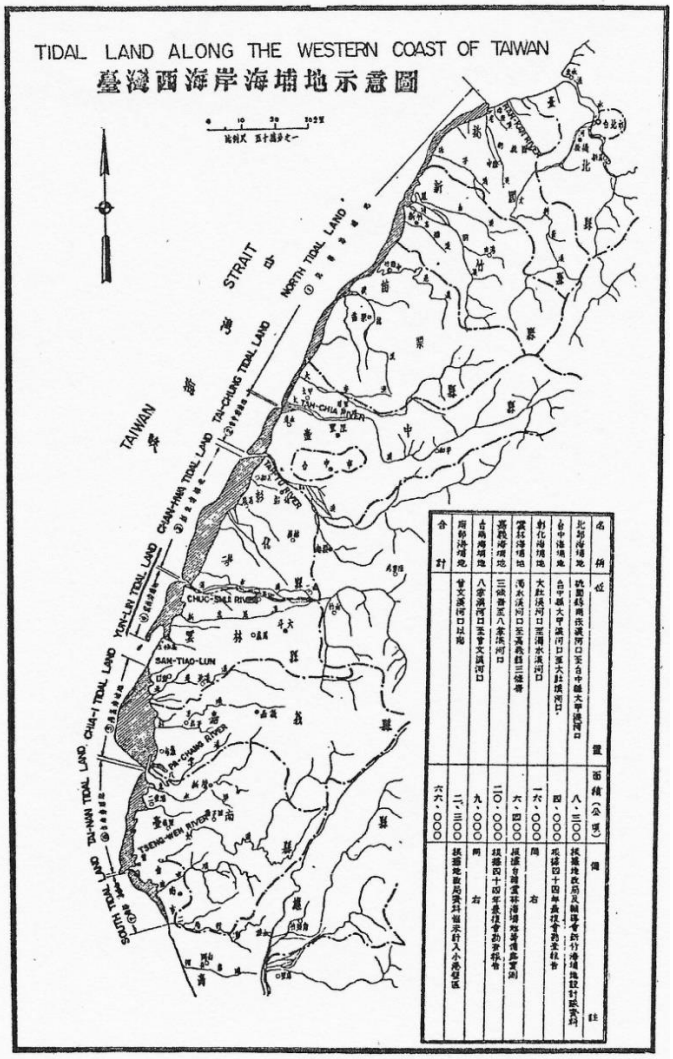

Figure 2. Tidal land development along the westcoast of Taiwan (Group Polder Development, 1982)

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Bart Schultz

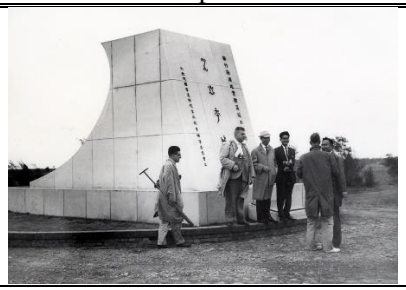
Lelystad, januari 2022

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				
Chen-Wun Polder	1963	1600	LGS				
North Polder	1966	314	LGS				
Wan-Kung Polder	1968	462	LGS				
Yu-Pu Polder	1971	820	RLL	24º 08' N	120º 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				
Changhua	1993	260	RLL				
Yun Lin	1998	888	LGS				
Taipei		269	LGS	25º 08' N	121º 29' E	-3	Rural area
Taipei City		7	LGS	25º 14' N	121º 38' E	1	Rural area
Chilung		2					
Taoyuan		33					
I-lan		159	RLL	24º 45' N	121º 48' E	3	Rural area
Miaoli		837	RLL	24º 38' N	120º 46' E	4	Rural area
Taichung		1144	RLL	24º 13' N	120º 32' E	4	Rural area
Taichung City		64		24º 09' N	120º 40' E		Urban area
Nantou		1032		24º 04' N	120º 38' E		Urban area
Penghu		37	RLL	23º 36' N	119º 39' E	3	Rural area
Hualien		2327	RLL	23º 54' N	121º 35' E	20	Rural area
Chia-i		392	RLL				
Chia-I City		33	RLL				
Tainan		139	LGS	23º 01' N	120º 10' E	0	Rural area
Tainan City		65	RLL	23º 00' N	120º 13' E	19	Urban arae
Kaohsiung		49	LGS	22º 36' N	120º 19' E	2	Urban area
Taitung		1870	RLL	22º 45' N	121º 10' E	4	Urban area
Pingtoung		645					
Linbian		4000	LGS	22º 25' N	120º 31' E	-1	
Hsin Chu			LGS	24º 49' N	120º 55' E	3	
Choshiu Fan							
Total		20,401					

*) 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

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

*) Batavialand/orginal

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

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

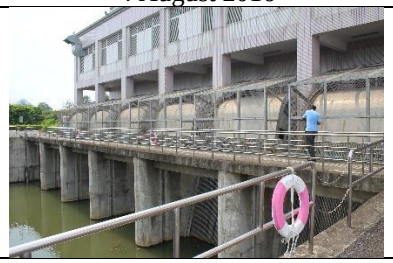
Table III. Pictures on polders and lowlands in Taiwan by Prof. Bart Schultz (continued)

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)

IMG_3327 Dam to protect Haomiliao Wetland, 2 August 2016	IMG_3328 Dam to protect Haomiliao Wetland, 2 August 2016	IMG_3341 Fish ponds behind artificial dune to protect Haomiliao Wetland, 2 August 2016	IMG_3344 Hydraulic laboratory of Tainan, 2 August 2016
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	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	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	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

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

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	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	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	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
			
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	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	IMG_3355 Inlet of 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	IMG_3356 Inlet of 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