

Water Indicators

Country Aspects

1. PHYSICAL ASPECTS

1.1. WATER RESOURCES

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The main characteristics of Taiwan's rivers are as follows:

- 21 major rivers, 29 secondary rivers and 79 minor rivers;
- Relatively small drainage area, only nine rivers exceed 100km²;
- Relatively short length, only six rivers exceed 100km;
- Relatively steep slope, upstream reaches exceed 1/200-1/500, only five rivers have slope milder than 1/1000;
- Poor watershed geological conditions; most watersheds are sandstone and shale and easy-to-collapse. Sediment concentrations are huge. There are also special geological structures such as mudstone and conglomerate which can easily become mudflow;
- Concentrated rainfall, rapid flows, poor flow conditions, uneven time distribution of flows and rapid rise of flow peak.

1.1.2. WATER USE

Agriculture is the major water user in Taiwan, accounting for 78 per cent of all use. The construction of a major canal from south to north is envisaged to alleviate water scarcity in the north. Seasonal variations of water availability, causing floods and droughts, are a major problem. Industrial pollution affects many rivers. Natural contamination of groundwater with arsenic and fluoride affects the drinking water supply of about 4 per cent of the population. Water resources management is fragmented among various agencies and levels of government.

1.2. WATER QUALITY, ECOSYSTEMS AND HUMAN HEALTH

The following factors influence water quality in the country:

- The population density of Taiwan is the second highest in the world. Domestic sewage is the major source of water pollution for many Taiwanese urban rivers.
- Wastewater from the swine industry used to be a major water pollution source. Domestic pig farms are gradually becoming smaller after joining the World Trade Organization, but there are still about 7 million pigs being raised in Taiwan.
- Over the last three decades Taiwan has begun to develop itself into a big international trading economy. There are nearly 11,000 factories in the country, whose manufacturing processes usually produce wastewater containing various contaminants.

2. GOVERNANCE ASPECTS

2.1. WATER INSTITUTIONS

On 16 December 1972, President Chiang Ching-kuo, making an important urban development policy statement, gave the following instructions: "In order to develop a public water supply system island-wide, a water corporation must be established immediately at the provincial level. At the same time, we must speed up the implementation of long-term plans for the development of water supply in order to concentrate human and financial resources, increase investment benefits and reduce operational cost."

In accordance with these instructions, on 1 April 1973, the Taiwan provincial government set up a preparatory office for the Taiwan Water Corporation, which now draws up plans for unified management and long-term development.

2.2. WATER MANAGEMENT

With its excessive rainfall and steep terrain, typhoons and storms with intensive rainfall and rapid concentrated flows in the summer cause the most severe flooding disasters in Taiwan.

2.3. WATER POLICY AND LEGAL FRAMEWORK

Taiwanese laws related to water include:

- The Water Act (7 June 2011);
- The Enforcement Rules for Water Act (29 March 2010);
- The Water Supply Act (9 September 2010);
- The Enforcement Rules for Water Supply Act (29 December 2005);
- The Hot Spring Act (9 September 2010);
- The Enforcement Rules for the Hot Spring Act (5 January 2006);
- The Special Act Governing the Management of Keelung River Basin (29 December 2005);
- The Special Act for Flood Management (14 July 2006);
- The Special Act Governing the Management of Shihmen Reservoir and its Catchment Area (14 July 2006).

3. GEOPOLITICAL ASPECTS

The island of Taiwan has a total area of 35,980km² and is located 200km southeast of mainland China, separated by the Taiwan Strait. It is about 614km long from north to south and 145km from east to west at its widest point.

There is a contrast between the mountainous eastern two-thirds of the island, with five ridges arranged from north to south, culminating in the 3,952m Yu Shan peak, and the flat area on the

west coast, which makes up a quarter of the total area, but contains three-quarters of the population.

Since the Tropic of Cancer crosses it, Taiwan's climate is tropical in the coastal areas and subtropical in the mountain areas. In the high mountains it can even snow. The rainy season lasts from June to August, affected by the southwest monsoon. Typhoons and earthquakes are common on the island.

4. SOURCES

Water Resources Agency. 2012. Flood characteristics in Taiwan. eng.wra.gov.tw/lp.asp?ctNode=2299&CtUnit=619&BaseDSD=7