

## Chapter I

# BACKGROUND INFORMATION ABOUT TAIWAN

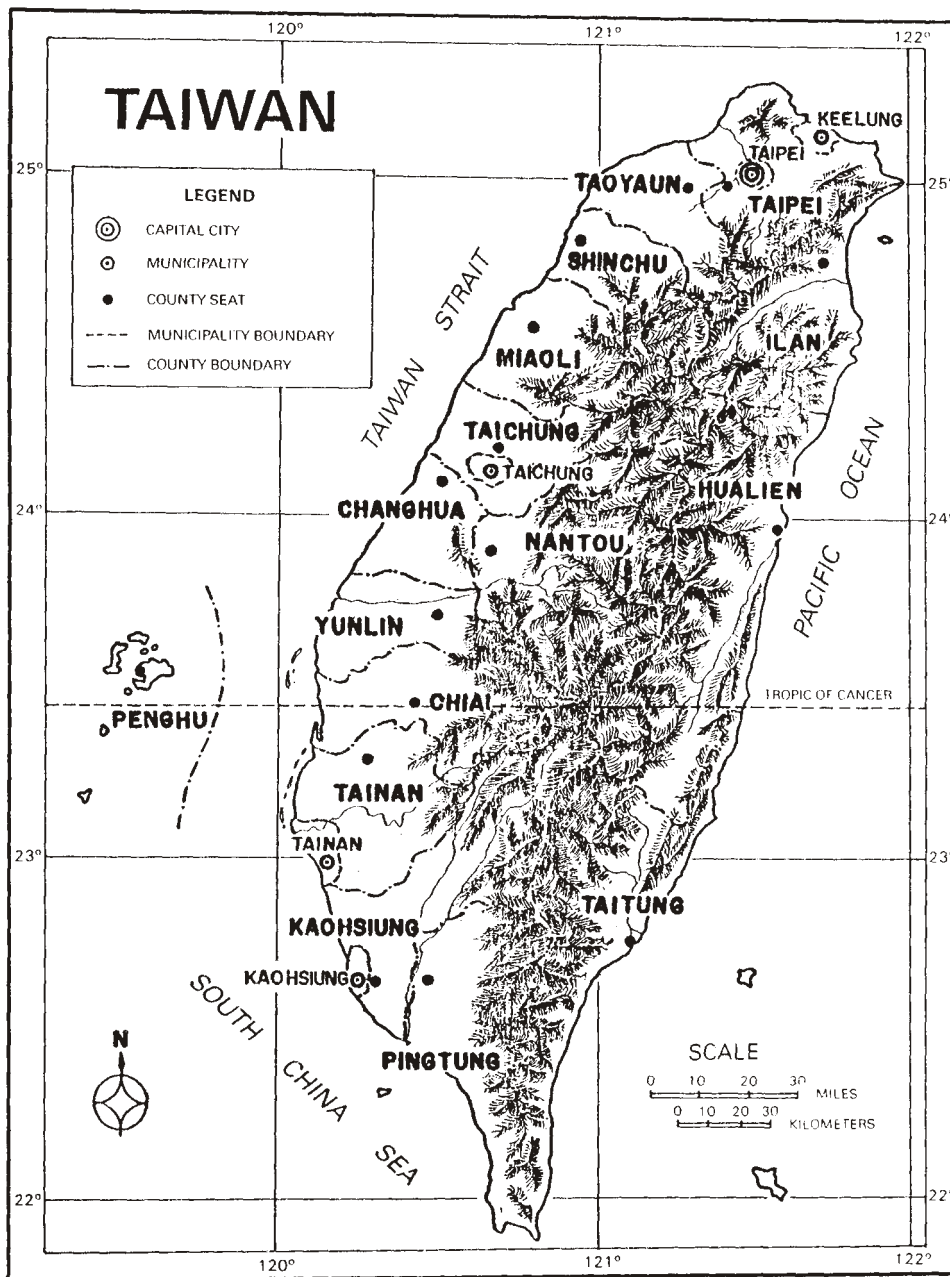
### THE LAND

There are 13 islands in the Taiwan (Formosa) group and 64 in the Penghu (Pescadores) group. The main island, Taiwan, is situated between 22° and 26° of north latitude and approximately 120° and 122° of east longitude (*see* Map 1). The Tropic of Cancer cuts the island into almost equal halves, north and south. The total area of Taiwan is 35,704 km<sup>2</sup> (13,785 square miles), of which three-fifths are hills and mountains over 250 meters (820 feet). The island is bounded on the west by the Formosa Strait, on the northeast by the East China Sea, on the east by the Pacific Ocean, and on the southwest by the South China Sea. The island is 394 km (245 miles) long from north to south and 144 km (90 miles) wide at the broadest part. On the east coast, the eastern coastal range of mountains drops so sharply to the Pacific Ocean that there is little level land for tillage, although strips of terraced field are reclaimed on the hills. The main central mountain range stretches from the northeast corner to the southern tip of the island and has many peaks more than 3,600 meters high. Toward the west, the land descends in a succession of terraces to the coastal plain along the Formosa Strait. The Taitung Rift Valley, lying between the central mountain backbone and the eastern coastal range, forms a trough about 120 km (75 miles) long and 8-16 km (5-10 miles) wide, and provides a floor for a railroad and a highway connecting the two major cities--Hualien and Taitung. Small farming villages and towns are also found on this strip of land.

### THE CLIMATE

Taiwan has a subtropical climate, with an annual average temperature of 23.5°C (74.3°F) in the north and 24.4°C (76°F) in the south. The summer months, which last from May to September, are hot and humid, with southwest winds bringing rain mostly to the south. The winter months, October through April, are

**Map 1**  
*Taiwan, Topography and Administrative Division*



Note:hsien=county

warm to hot, with northeast winds bringing rain to the north, while the south enjoys clear, dry weather. The coldest month is January, with a monthly average temperature of 15.8°C (60.4°F) in the north and 20.3°C (68.5°F) in the south. The annual average rainfall is from 1,250 mm (50 inches) on the western plains to 6,400 mm (250 inches) along the face of the central mountain ranges and around the northern port area (Keelung). Destructive typhoons, accompanied by heavy rainfall, occasionally sweep the island between June and October. Tables 1 and 2 show annual and monthly average temperature and rainfall in various locations in Taiwan.

## THE POPULATION

There were about 3 million people in Taiwan in 1905 when the first census was taken. The population doubled to 6 million in 1941 and increased to 8.2 million in 1952, when the malaria control program was initiated. The attack phase ended in 1957, when the population was 9.7 million. At the end of the consolidation phase in 1964, the population was 12 million; at the end of 1988, it reached 20 million. Birth rate was as high as 38.31 per 1,000 in 1947 and went up to a high of 49.97 per 1,000 in 1951 as a result of the post-war baby boom. It then gradually declined and, encouraged by the government family planning program begun in 1964, dropped to 17.24 per 1,000 in 1988. Death rate was 18.15 per 1,000 in 1947 and declined steadily to only 5.14 per 1,000 in 1988. Natural increase was 12.1 per 1,000 in 1988. (See Fig. 1.) Infant mortality rate was 44.71 per 1,000 live births in 1952, declining to 28.51 in 1963 and further dropping to 5.3 in 1988.

**Table 1**  
*Normal Annual and Monthly Average Temperature*

Localities	Monthly Average Temperature (°C)												Annual Average Temp.(°C)
	1	2	3	4	5	6	7	8	9	10	11	12	
Taipei (North)	15.8	16.2	18.3	22.2	26.3	28.8	30.2	30.0	28.8	25.5	22.0	18.2	23.5
Taichung (West)	16.8	16.9	19.3	22.5	26.2	27.4	28.4	28.2	27.6	24.7	21.8	18.7	23.2
Taitung (East)	18.9	19.5	21.1	23.5	26.0	27.6	28.2	28.0	27.1	25.0	22.7	20.2	24.0
Hengchun (South)	20.3	20.7	22.1	24.5	26.6	27.4	27.5	27.2	26.1	25.4	23.5	21.4	24.4

Source: *Sugar Handbook, 1952* (the year when the malaria eradication program was initiated).

**Table 2**  
*Normal Annual and Monthly Rainfall*

Localities	Monthly Total Rainfall (mm)												Annual Total Rainfall.(mm)
	1	2	3	4	5	6	7	8	9	10	11	12	
Taipei (North)	94	129	209	158	166	329	251	270	164	105	85	75	2035
Taichung (West)	35	73	118	148	225	430	275	280	113	15	13	32	1757
Taitung (East)	31	41	60	72	144	357	220	278	304	171	78	42	1798
Hengchun (South)	20	29	23	40	166	393	589	526	316	142	47	19	2310

Source: *Sugar Handbook, 1952* (the year when the malaria eradication program was initiated).

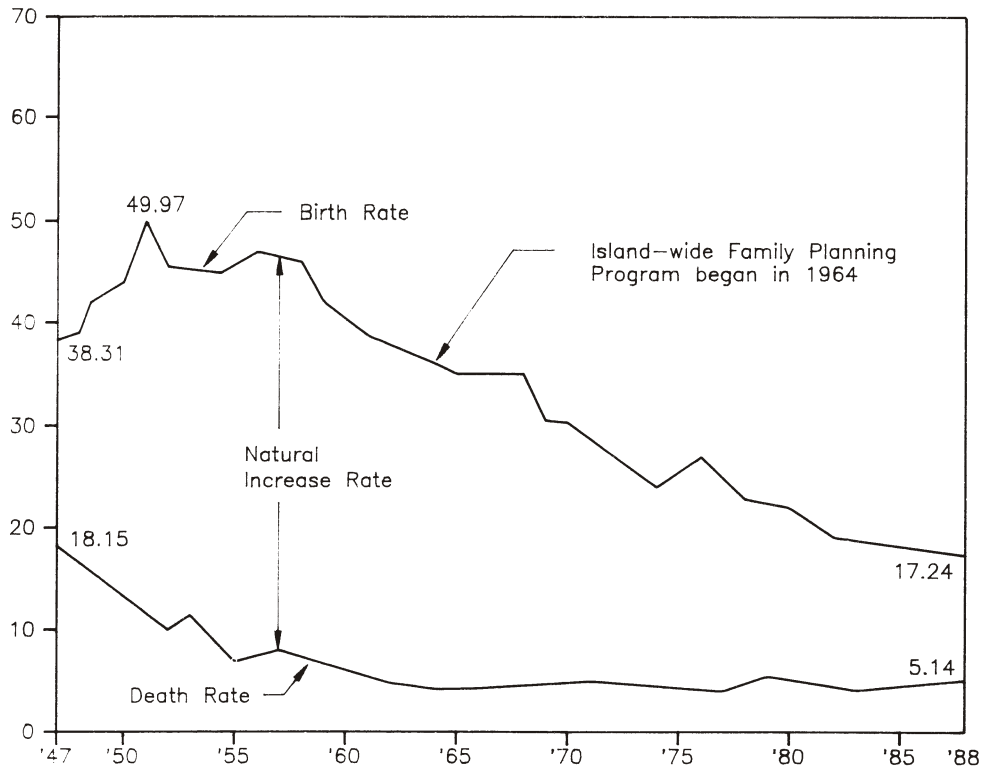


Fig. 1: Birth, death and natural increase rates (per 1,000)  
Taiwan area, 1947 - 1988

## POLITICAL ADMINISTRATION

Administratively Taiwan today includes two national cities -- Taipei city with 16 districts and Kaohsiung city with 11 districts -- and the Province of Taiwan with five provincial cities, 16 counties and 331 townships. The National Government is presently located in Taipei.

The two national cities and the Province of Taiwan are headed by appointed governors. Each county or provincial city has an autonomous governing body consisting of an elected magistrate and a number of elected county assembly members. The magistrate appoints the heads of the various executive bureaus. The county or provincial city is divided into townships varying in population from 7,000 to 70,000. Each township also has its elected mayor and a number of representatives

elected by the people. At the peripheral level, each village, with an average population of 2,500, is headed by an elected chief of village and assisted by an appointed village secretary. Similarly, hamlets, or small settlements constituting the subvillages, have an average population of 250, and each is headed by an elected chief (headman).

## HEALTH ORGANIZATION

Currently the health agencies in Taiwan are organized at four levels: 1) national, 2) national city and province, 3) county and provincial city, and 4) township. At the national level, The Department of Health (DOH) of The Executive Yuan, under a Director General, is the highest health authority of the nation. Taiwan Province, Taipei city and Kaohsiung city have their respective health departments which are responsible for planning, supervising and implementing health and medical care programs under their respective jurisdictions. Each of the 21 counties and provincial cities has a health bureau, and each district of the national city has a health center. At the grass roots level, one health station is set up in each township. Health rooms and primary health care units are maintained in the remote and mountain areas.

The nomenclature for the health agencies has been modified in the course of the development of political administration during the last four decades. During the attack and consolidation phases of the malaria eradication program (1952 - 1964), the DOH, at the national level, was called "National Health Administration (NHA);" that of Taiwan Province bore the name "Provincial Health Administration (PHA)." Both Taipei and Kaohsiung were provincial cities and therefore at the same level as counties. As far as malaria was concerned, the Taiwan Provincial Malaria Research Institute (TAMRI) acted at the PHA level, while counties and cities carried out all field operations through their respective health centers (today's health bureaus) and township health stations.

## ECONOMIC AND SOCIAL DEVELOPMENT

Under the joint efforts of the Government and the people, the economy of Taiwan has improved rapidly in the past decades, and the quality of life has also been greatly improved. The per capita income in 1988 was NT\$165,884 (US\$5,798). General industrial production increased by 67 times between 1952 and 1987; the literacy rate improved from 62.9% to 92.2%; and the number of telephones per 100 households increased from 0.4 to 32.78. The average caloric intake per person per day increased from 2.262 to 2.999 kg calories.

## COMMUNICATIONS/TRANSPORTATION

Taiwan already had a good network of roads and highways at the time the malaria control program was launched. There were about 16,000 km (10,000 miles) of roads and highways, of which only about 10% were paved. The government-operated railway system extended for 960 km (600 miles) on the western plains and 176 km (110 miles) in the eastern Rift Valley between Hualien and Taitung. Cities, towns and even the majority of the villages could be reached by trains, buses and commercial trucks; privately-owned cars were very few in number in the 1950s and early 1960s. The most popular transportation in towns and villages was by bicycle. However, as the GNP and per capita income increased rapidly in the last 25 years, the communications system was greatly improved. A super highway was constructed between Keelung and Kaohsiung (north to south), coastal roads were converted to highways, and roads were widened and paved. Privately-owned cars and motorcycles have become very common everywhere. Construction is going forward to complete the round-the-island railway circuit. Today, the television broadcasting system has reached even the remote villages.