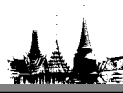


1 Profile of Bangkok City



1.1 Location and Climate



Bangkok, the capital of Thailand is situated on the low flat plain of Chao Phraya River which extends to the Gulf of Thailand. Its latitude is 13 45' North, and the longitude is 100 28' East. The total area of Bangkok is 1,568.737 sq. km.

Bangkok has a monsoon type of climate, which can be classified into three main seasons: rainy (May-October), cool (November- January) and hot (February-April). The average annual temperature

was 28.4 °C in 1999. The highest temperature average during the period of 1990-1999 was 33.3 °C and the lowest temperature average was 24.9 °C. The average wind velocity was 1.3 m/sec. The relative humidity is high throughout the year.

The provision of well-developed infrastructures has enabled development of Bangkok as the focal center for economic, culture and administrative activities. Thus, Bangkok is regarded as the growth flagship of the Central Region and the whole country. Figure 1.1 shows the Map of Bangkok City with 50 districts.



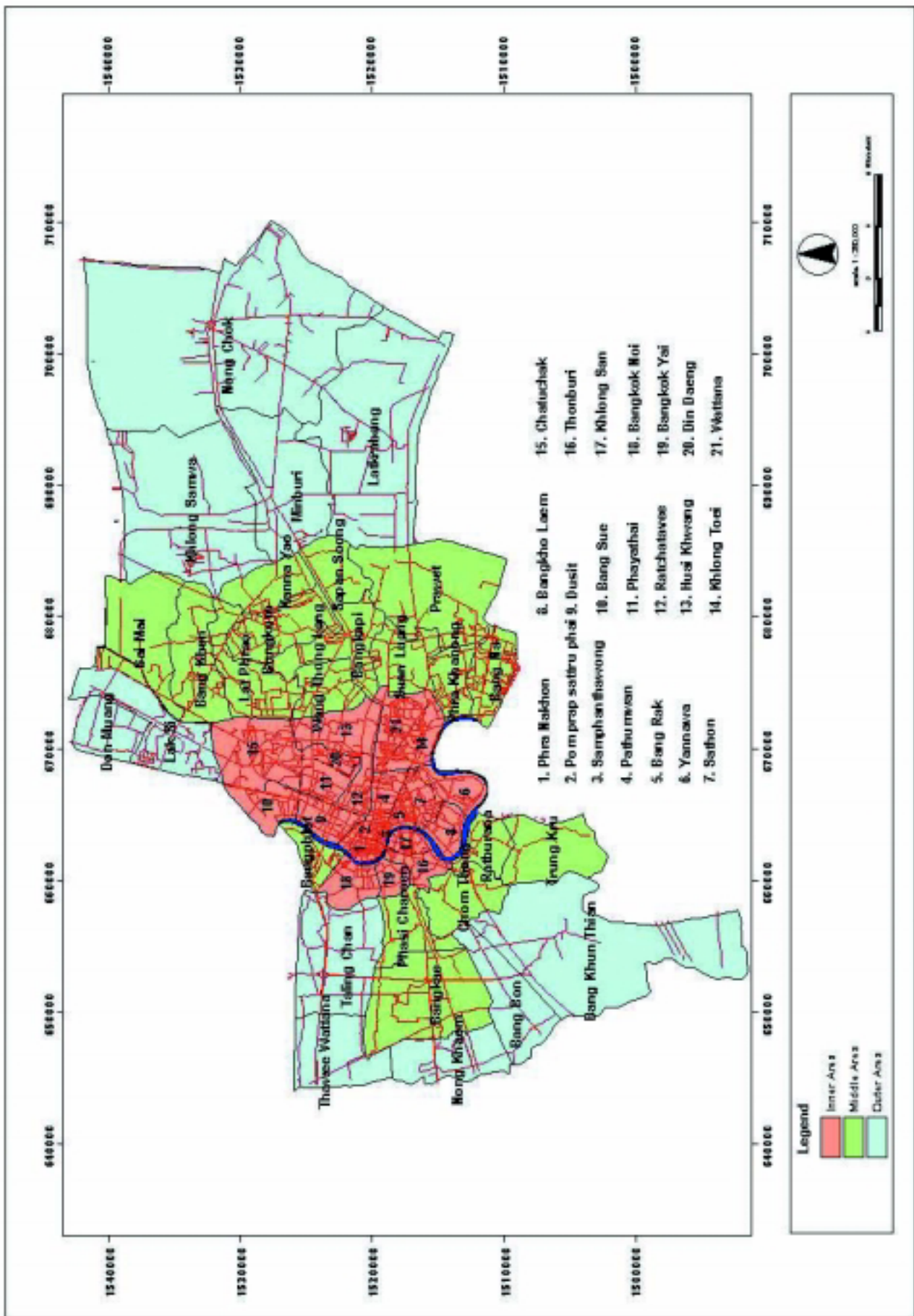
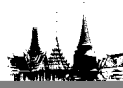


Figure 1.1 Map of Bangkok City with 50 Districts

1.2 Population



The total population of Bangkok in 2000 was 5.68 million, which was 9.18% of the total population of Thailand. Figure 1.2 shows the trend of the population dynamics in the Bangkok city. The trend during 1987-2000 shows the decreasing number of population in the inner area and increasing in the middle area. The population density in the inner area decreased from 15.27 to 11.09 thousand/Sq. Km (that is 3.25 to 2.36 million) during 1987 to 2000 respectively. The outer area shows increase in population density from 0.77 to 1.28 thousand/Sq.Km (which is 0.67 to 1.12 million) in 1987 to 2000 respectively.

Figure 1.3 shows population migration in and out of Bangkok. In later year (1995-2000) Bangkok seems to lose populations. However, the actual population of city may not be known, as there are people who commute to work in Bangkok or live in the city without registration. They are estimated to be around 3.21 million. Therefore, the actual population of Bangkok in later years was likely around 8.89 million (NIDA, 2000)



1.3 Industrial Activities



During 1987-1996, there was rapid rise in number of factories, but in 1997-2000 number of factories was stable. In 2000, the total number of factories in Bangkok was 21,026 and the capital investment was 261,428 million baht with 608,088 employees. As a result of economic crisis and the Bangkok Comprehensive Plan (1999), factory profile in Bangkok are more likely to be small-scale factories. The trend of capital investment, factories and employees in the Bangkok are shown in Figures 1.4 and 1.5.

The Bangkok Comprehensive Plan defines special zones for industrial estates at Lat Krabang and Bangchan. The total number of factories in 2 Industrial Estates was 221 in 2000. The plan promotes development of non-polluting and nuisance - free industries to improve the urban environment. Therefore new industries and factories have been shifted outside the Bangkok to Samut Prakan and Pathum Thani. Figure 1.6 shows the locations of factories in Bangkok.

As ISO 14001 is gaining popularity as direction for Environmental Management Systems (EMS) certification in Thailand, the concept of this standard has enabled the organizations to continually develop and improve their environmental management systems. In 1999, the number of ISO14001 certified companies was 288.



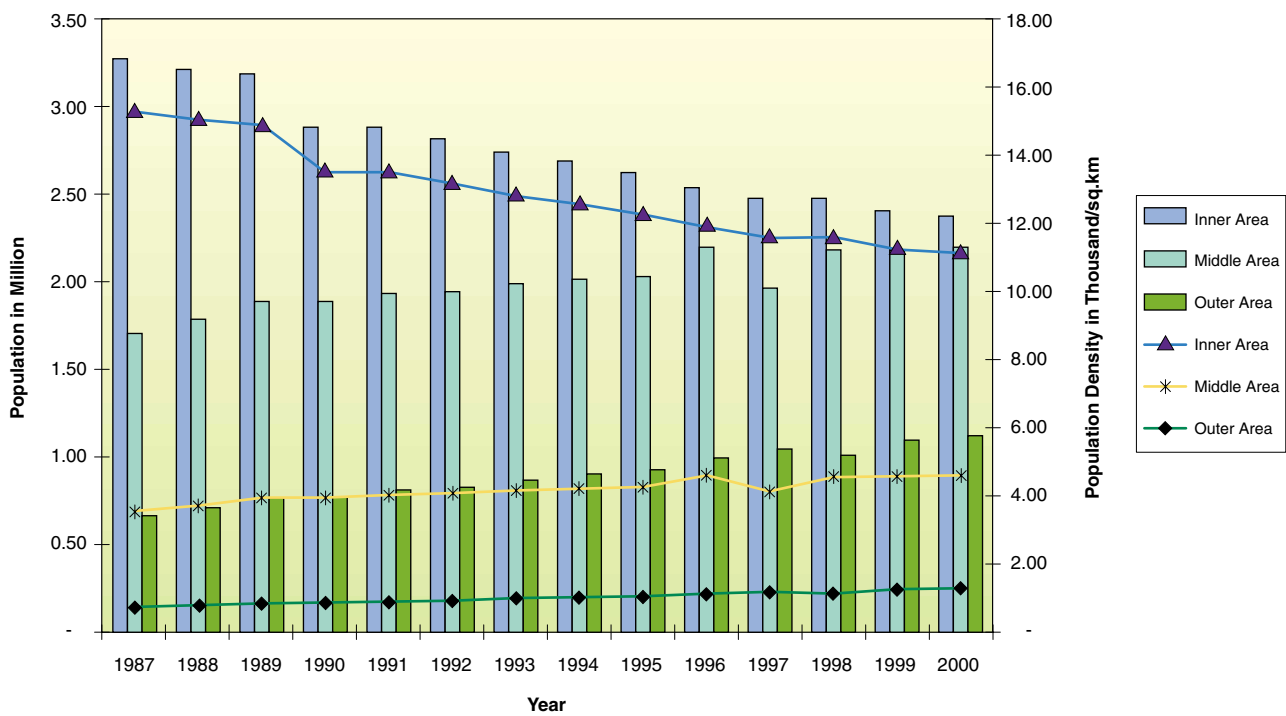


Figure 1.2 Change of population and population density in Bangkok 1987-2000
(Source : BMA. Statistics Report, 2000)

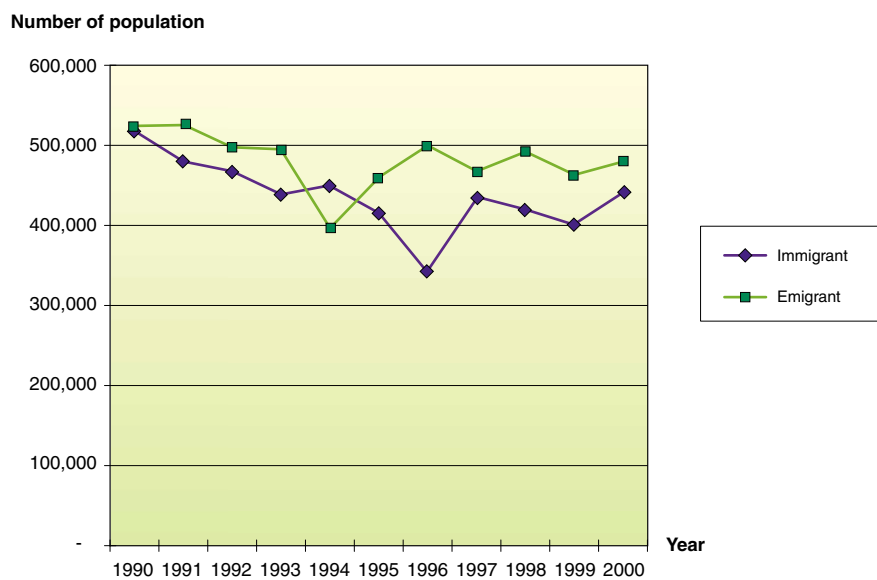


Figure 1.3 Population migration in Bangkok 1990-2000
(Source : BMA. Statistics Report, 2000)

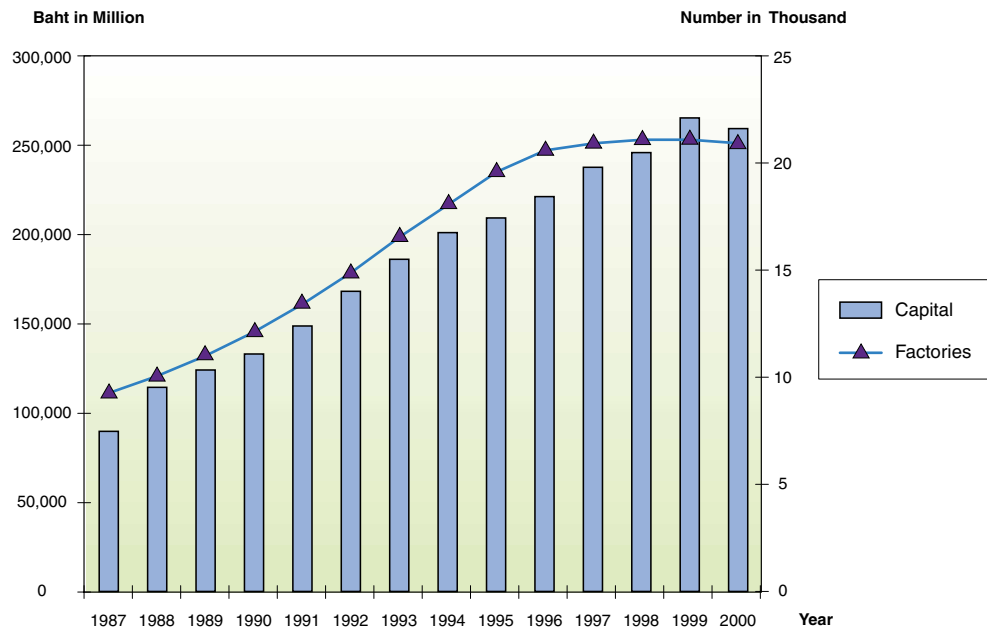


Figure 1.4 Number of total industrial factories and capital investment in Bangkok 1987-2000
 (Source: Information Center, Department of Industrial Works, Ministry of Industry, 2000)

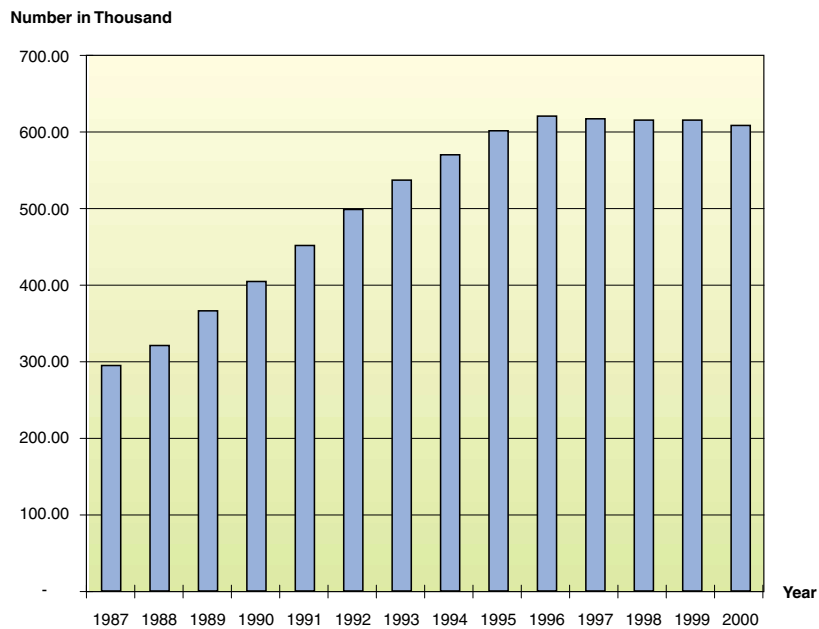


Figure 1.5 Number of total industrial employees in Bangkok 1987-2000
 (Source: Information Center, Department of Industrial Works, Ministry of Industry, 2000)



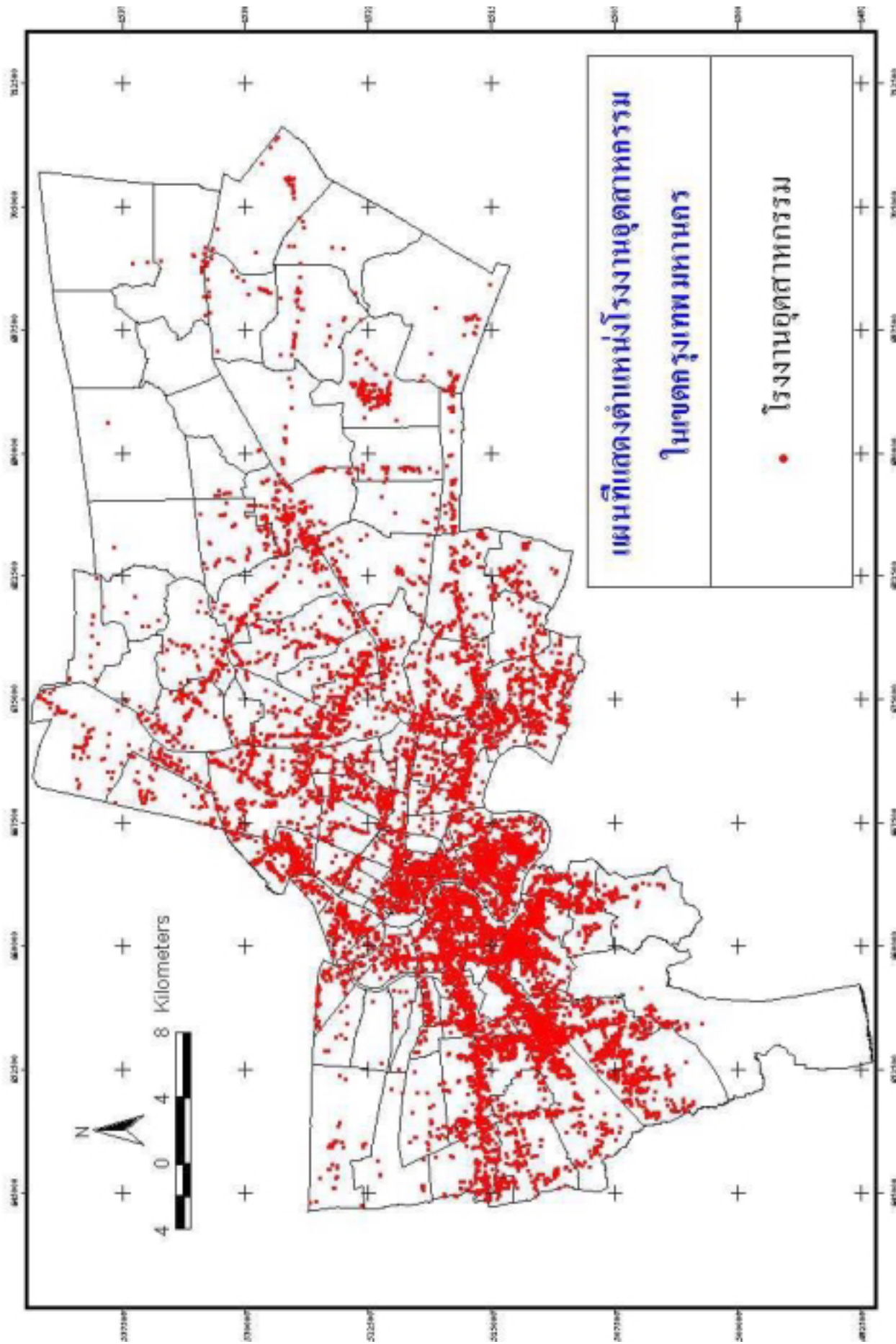


Figure 1.6 Bangkok Factories Location Map

1.4 Infrastructures



Bangkok City has been undergoing rapid urbanization and industrialization since 1960. The increasing population is due to the development of infrastructures such as road networks, real estate developments, land value, public policy as well as advancing economy which resulted in expansion into the surrounding areas.

The rapid rise in population has caused community number to increase. The BMA has defined communities into 5 categories which are slum community, suburb community, real estates community, urban community and housing community. In 2000, there were a total of 1,596 communities in Bangkok. Figure 1.7 shows the trend of communities in Bangkok which was increasing every year, but population in the communities were slightly decreasing

during 1995-1997 and were increasing in 1998. In 2000, population in communities were 1.26 million, and households were 310,490 with 256,489 houses.

Number of canals in Bangkok was 1,357 in 2000. Department of Drainage and Sewerage is responsible for 329 canals and District Offices are responsible for 1,028 canals.

In 2000, the Public Works Department reported that there were 4,076 kilometers of road length in Bangkok, which has total area of 58.45 square kilometers.

The rapid development of Bangkok has led to other environmental problems and created serious environmental degradation such as air pollution, water pollution, solid and hazardous waste problem, land subsidence and noise pollution.

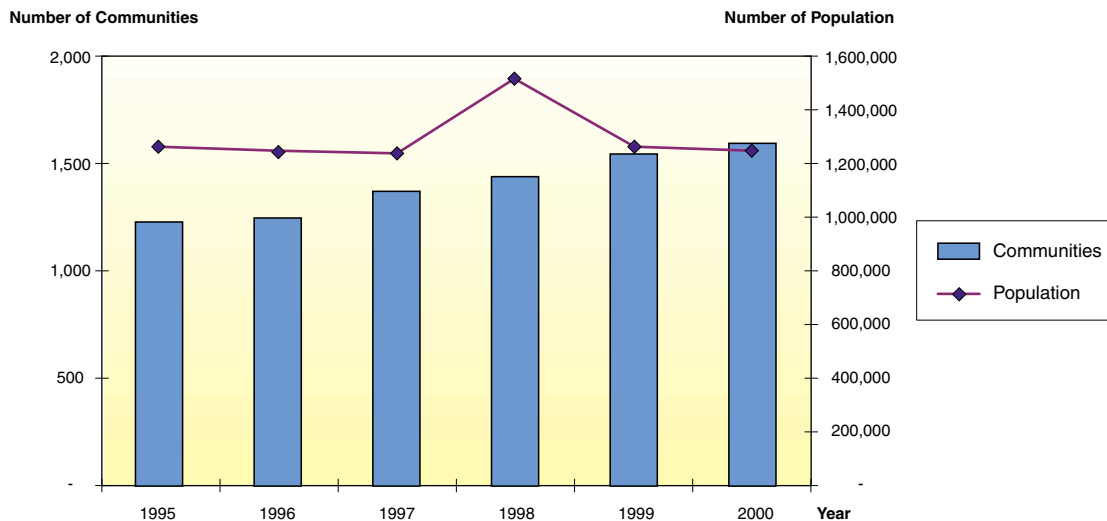


Figure 1.7 Number of communities and population in Bangkok 1995-2000
(Source : BMA. Statistics Report, 2000)