RAPID INDUSTRIALIZATION IN THAILAND 1986-1991

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1. RAPID INDUSTRIALIZATION IN THAILAND 1986-1991

- Since 1987, spurred by foreign investment, economic growth in Thailand has been among the fastest in Asia. Industrialization has been concentrated in Bangkok and its metropolitan region.
- The consequences are pollution and severe traffic congestion that may restrain future growth.
- Thailand differs from other industrializing countries in that most of its population is still employed in agriculture and overall levels of education are low. This pattern raises questions about the ability of the country to achieve full industrialization.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

1. RAPID INDUSTRIALIZATION IN THAILAND 1986-1991 (cont'd)

- The economic-development paradigm established during the 1950s and 1960s was dominated by four broad concerns--capital accumulation, agriculture as a provider of resources for industrial investment, import substitution and protection for nascent industries, and state-directed strategies, especially for capital-intensive industries (Higgins 1959; Lewis 1960).
- However, the dynamism of the export-oriented economies of five Asian countries--Japan, Taiwan, Hong Kong, South Korea, and Singapore--influenced thinking about development and resulted in a shift in that paradigm.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

2. ROOTS OF ECONOMIC EXPANSION

- By the 1980s, the importance of trade liberalization, transfer of technology by direct foreign investment, and the role of exports in spurring economic growth were recognized as important components in development.
- Based on the experiences of Japan, Singapore, and other newly industrialized countries, the role of human capital investment emerged as perhaps the most important component in economic development (World Bank 1991).
- Concomitantly, environmental concerns began to be emphasized internationally. Case studies suggested that rapid industrialization was causing severe and, in some instances, irreversible environmental damage.
- Thus, the notion of social costs, especially as articulated in the concept of sustainable development (World Commission 1987), is emerging as a new paradigm in economic-development theory.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

2. ROOTS OF ECONOMIC EXPANSION (cont'd)

- Recently, Thailand was rarely featured on economic news pages. For decades its economy, like those of many developing countries, was based on the export of primary products and on import-substitution policies at home.
- However, the Thai economy shifted from the lowest growth rates in Asia in the mid-1980s to the highest by 1988, when the world economic press dubbed the country "Asia's fifth tiger."
- In the 1960s and 1970s, Thailand, like most of the developing countries in Asia, had high growth rates, on the order of 6.9 to 7.9 percent, in gross domestic product (GDP). In contrast with the path followed by South Korea, Taiwan, Hong Kong, and Singapore, where growth was based on export-driven industrialization, most of Thailand's manufactures were the products of simple processing industries: wood, prawns, tapioca pellets, tobacco, and sugar.
- In 1976, manufactures accounted for only 26 percent of Thailand's total exports, and only 8 percent of the population was employed in the manufacturing sector.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

2. ROOTS OF ECONOMIC EXPANSION (cont'd)

- During the 1960s and 1970s, economic growth in Thailand was sustained by expansion of the agricultural sector, by export of primary products, and by the involvement of the United States in Vietnam.
- Aid from the United States and the International Bank for Reconstruction and Development (IBRD) enabled Thailand to build an infrastructure from which it could launch its primary products into a buoyant world market. The United States military presence in the country resulted in a military-procurement boom for Thai entrepreneurs.
- The most productive agricultural region in Thailand is the central valley of the Chao Phraya. However, with development aid from IBRD and the United States, Thailand launched ambitious programs to expand agriculture on the margins of the Chao Phraya and into the eastern and northern regions of the country.
- Forestland was cleared, the felled trees were processed and sold profitably on the world market, and the cleared land was given to agriculture. The rapid expansion of the agricultural base resulted in high growth rates for the Thai economy.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

2. ROOTS OF ECONOMIC EXPANSION (cont'd)

- From the mid-1970s into the mid-1980s, a series of external events seriously disturbed the Thai economy. The pullout of the United States from Vietnam in 1975 ended the procurement boom, and shortly thereafter the closure of U.S. military bases resulted in the loss of an important source of foreign exchange and aid.
- Moreover, Thailand was a petroleum importer, and the 1979 oil crisis worsened its trade deficit. The Thai government had promoted import-substitution policies and depended on foreign exchange from primary-product exports. Between 1980 and 1986, the world-market price for Thai products such as rice, coconut oil, tapioca, tin, sugar, and rubber collapsed (Phongpaichit 1988).
- In addition to externally induced problems, the Thai agricultural sector had slowed by 1980. Land-development sites were exhausted, and yields declined as new land that had been brought under cultivation in the 1960s and 1970s proved unsuitable for long-term, sustainable agricultural production. Environmental problems had resulted from forest clearance in watershed areas and from the spread of cultivation onto slopes.

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2. ROOTS OF ECONOMIC EXPANSION (cont'd)

- Growth rates for Thailand slowed to an average of 4.2 percent in the first half of the 1980s and to 3.2 percent by 1985, making the Thai economy one of the slowest growing in Asia.
- With a lackluster economy and a rising trade deficit, the government and local entrepreneurs began to explore the possibility of developing a manufacturing sector.
- By 1985, fiscal, monetary, and trade reforms were under way, and the tariff and tax structures were reoriented to favor foreign and local industrial enterprises that produced for export.
- In the latter half of the 1980s, during that reorientation, petroleum prices were very low, in contrast with previous years. Hence the country was able to emerge as the fifth economic tiger of Asia (Phongpaichit 1988).

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

3. LAGGING INCOME AND EDUCATION

- The Thai program of structural and fiscal reforms and aggressive promotion of industrial exports immediately boosted real GDP growth from 4.5 percent in 1986 to 13 percent by 1988. Double-digit growth continued into 1990, and growth rates are expected to remain at 8 to 9 percent annually throughout the 1990s.
- Foreign investments began to flow into Thailand and have played a key role in the high growth rates there. Foreign investment increased from 10,536 million baht in 1986 to 52,124 million baht in 1989 and to 53,990 million baht in the first three quarters of 1990 (one baht is equivalent to approximately four U.S. dollars).
- Between 1985 and 1990, most of these investments were in projects in which 80 to 100 percent of the production output was exported. The majority of new foreign investment in Thailand was predominantly in industry; such investment rose from 2,867 million baht in 1986 to 24,562 million baht in 1989 (Thailand Development Research Institute 1991).

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

3. LAGGING INCOME AND EDUCATION (cont'd)

- Thailand entered into an export economy based on industrial production at a propitious time.
- Its competitiveness as an industrial country received a boost with the 1989 announcement by the United States to remove South Korea, Taiwan, Hong Kong, and Singapore from the list of favored countries under the General System of Preferences (GSP).
- Because Thailand kept its level of quotas under the GSP, foreign-based industries such as textiles and garments relocated there. Another favorable external circumstance was currency appreciation in Japan, South Korea, and Taiwan.

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3. LAGGING INCOME AND EDUCATION (cont'd)

- In 1985 the appreciation of the Japanese yen forced Japanese industrialists to locate plants outside the country to remain competitive.
- Facing a similar situation, firms in Taiwan, South Korea, and Hong Kong, which had similar products, were forced to follow the Japanese example of relocating production in final-market countries or at low-cost sites.
- In addition to currency appreciation, other factors encouraging the shift of production from those countries to Thailand were labor costs in the home country, easing of governmental policies toward export enterprises, international competition, and shortening of technological lag time.

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3. LAGGING INCOME AND EDUCATION (cont'd)

- Thailand also had numerous attractions as a site for relocating industrial operations.
  - The first was the availability of cheap, unskilled, trainable labor.
  - Second, Thailand had an infrastructure of road, airline, and port facilities, as well as sufficient power and water supplies for industry.
  - Third, favorable policies for foreign investment included tax incentives and infrastructure provision.
  - Fourth, bureaucratic procedures, a major drawback in many countries, were streamlined through the Board of Investment.
- Two other favorable factors, less tangible but frequently cited by foreign investors, were the lack of racial conflict and political stability (Pongpisanupichit and others 1989).

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3. LAGGING INCOME AND EDUCATION (cont'd)

- As an investment area, Thailand was preferred over other countries such as Malaysia, where economic policy until 1990 mandated Malay participation and employment.
- Additionally, unlike attitudes in Malaysia or Indonesia, those of the general Thai population toward Chinese-owned businesses were not negative, an extremely important consideration for firms from Taiwan and Hong Kong.
- To foreign investors, political stability means favorable governmental policies, business as usual regardless of internal events, such as the May 1992 violence in Bangkok, minimal labor organizations or threats of unionization, lack of socialist-oriented political parties, and, finally, manageable corruption costs.
- Plentiful natural resources and liberal policies toward their extraction have been a significant spur for foreign investment.

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3. LAGGING INCOME AND EDUCATION (cont'd)

- Foreign capital has flowed toward primary-product industries such as rubber, tiger prawns, livestock, nonferrous metals, and marble and to resource-based industries such as processed meats, fruits, vegetables, seafood, palm, oil, flour, wood-furniture parts, rubber gloves, and paper products.
- Japan ranks first in terms of the amount of foreign capital invested in Thailand (Board of Investment 1991).
- Japanese capital is present in all economic sectors: light industry, resource extraction, capital-intensive industries, construction, land development, services, and tourism (Economist 1990a).

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

3. LAGGING INCOME AND EDUCATION (cont'd)

- The newly industrializing countries, the next prominent group of investors, invest in activities that mirror their internal structures. Capital-intensive industries are favored by the next-largest group of investors, members of the European Community and the United States.
- However, Thailand's high growth rates are not solely dependent on foreign and joint-venture enterprises.
- Domestic investment also was stimulated by the new economic policies, and local investment in the Thai economy rose from 18,320 million baht in 1986 to 397,891 million baht in 1990.

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3. LAGGING INCOME AND EDUCATION (cont'd)

- The location of Thailand is increasingly perceived as a pull factor.
- Japan and the newly industrializing countries, as well as the Thai government and business community, envision Thailand as the hub of a golden pentagon comprising Thailand, Myanmar, and Indochina.
- Thailand is seen as the ideal place to launch satellite companies into a surrounding hinterland of cheap labor and resource opportunities that has a potential market of more than 120 million consumers (Economist 1991b).
- For example, value of trade with Indochina increased from 601 million baht in 1985 to 6,003 million baht in 1990 (Board of Trade 1991).

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3. LAGGING INCOME AND EDUCATION (cont'd)

- Japan, as an ally of the United States, has observed trade embargoes against Vietnam; however, many of the Thai companies investing in Vietnam are offshoots of joint ventures with Japanese firms. Thai companies and traders are also a very strong presence in Laos, where they dominate resource-extractive industries and are the main suppliers of industrial parts and consumer goods (Hiebert 1992).
- Thailand is unique among industrializing countries, because development is overwhelmingly concentrated in one urban center and because the country has a remarkably low level of urbanization of only 15 percent.
- Bangkok has a population of eight million, although unofficially some estimates place it at ten million; the country has no other city of more than one million. The next-largest cities, Korat and Khon Kaen in the northeast, Chiang Mai in the north, and Hat Yai in the south, have populations of approximately 200,000 each.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

3. LAGGING INCOME AND EDUCATION (cont'd)

- Such regional contrasts will remain for some time. Some observers call Thailand a newly agro-industrializing country rather than a newly industrializing one because of the large agricultural sector and the dominance of resource-based industries, especially food processing, in the economy (Phongpaichit 1988).
- In Thailand, overall educational levels are also low compared with those in other countries in the same phase of industrialization and with its neighbors in ASEAN (Association of Southeast Asian Nations).
- The future of the Thai industrial transformation depends on the ability of the labor force to upgrade skills and to acquire new ones (Economist 1991c).

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3. LAGGING INCOME AND EDUCATION (cont'd)

- Low levels of secondary-school enrollments are concomitant with a shortage of skilled labor.
- In higher education the situation is even more problematical. For example, by 1989, the country was in need of approximately 10,000 engineers, but the universities graduated only 3,000 (Los Angeles Times 1989).
- If Thailand lacks the necessary labor force for economic advancement, it will remain a repository of low-technology, labor-intensive industries, which could lead to competition from its Indochina neighbors.
- Vietnam, for example, has a relatively well-educated and hardworking labor force and a nascent entrepreneurial group.
- As it continues with reforms and actively courts foreign companies, Vietnam could overshadow Thailand as a favored country for investment.

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3. LAGGING INCOME AND EDUCATION (cont'd)

- Based solely on economic performance, Thailand appears to be the fifth economic tiger of Asia, the newest of the newly industrializing countries.
- However, on close examination, Thailand is a tiger with different stripes. Perhaps the crucial difference is that Thailand still has a large agricultural sector: 66.7 percent of the population is still employed in agriculture, a figure that contrasts sharply with levels in other industrializing countries in Asia.
- Although agriculture is the largest employer in Thailand, it contributes only 16 percent of the GDP.
- Slightly more than one-half of the GDP is produced in Bangkok, which has only 16 percent of the Thai population. Such figures suggest that Thailand still has a large, poor, agriculturally based population, with marked regional differences in income.
- Bangkok and the central region-- have only 32.7 percent of the population, yet GDP per capita there is the equivalent of U.S.$3,000 to $4,000. But in the northern and northeastern regions, with 54.2 percent of the population, incomes approximate U.S.$300 to $700 (Thailand Development Research Institute 1991).

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

4. SOCIAL ASPECTS OF GROWTH

- The historical and current primacy of Bangkok is due, in part, to its excellent location.
- The site has been the capital of Thailand since its founding on the east bank of the Chao Phraya in 1792, by the first king of the Chakri dynasty, Rama I.
- The city lies in the agriculturally rich central valley and, until recently, the Chao Phraya was the traffic conduit linking agricultural lands in the north and the south to Bangkok.
- Water has always been plentiful in Bangkok. The port, Klong Toey, is in the southern part of the city, with access to the Gulf of Thailand.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

4. SOCIAL ASPECTS OF GROWTH (cont'd)

- In addition to locational advantages, the primacy of Bangkok can be explained politically and culturally.
- The Thai government is highly centralized, and nearly all governmental decision making occurs in Bangkok.
- The city is also the spiritual center for Thais, because it is the residence of the royal family and the site of the most important Buddhist temples in the country.
- Economic growth has increased the primacy of Bangkok.
- Its rural hinterland is still largely agricultural and offers only limited employment opportunities, with low wages and low per capita incomes.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

4. SOCIAL ASPECTS OF GROWTH (cont'd)

- Skilled- and un-skilled-employment opportunities are available through Bangkok's economies of agglomeration, which are bolstered by a strong informal sector.
- In many regards, Thailand is not really a newly industrializing country: instead, Bangkok is a newly industrializing city. The growth of the Thai economy has been concomitant with increasing urbanization in the Bangkok metropolitan area (BMA).
- Moreover, urbanization has spread outward from the BMA into the surrounding Bangkok metropolitan region (BMR), which comprises five provinces that form a ring around Bangkok: Pathum Thani, Nonthaburi, Samut Prakan, Samut Sakhon, and Nakhon Pathon.
- The powerful economies of scale that exist in a large urban area serve as locational advantages that attract industry.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

4. SOCIAL ASPECTS OF GROWTH (cont'd)

- Transportation costs to external markets, always an important locational consideration, are lower in Bangkok and the surrounding provinces than elsewhere in Thailand.
- Utilities, water, and power not only are cheaper there than in other regions but also are more reliable.
- Labor productivity is higher in the capital, because the labor force has more industrial experience and is better educated there than in the provinces.
- Transaction costs, such as banking services and governmental licenses and permits, are lower in Bangkok than elsewhere.
- Industry in the BMA and the BMR, though diversified, has produced concentrations of specific types of activity. Bangkok attracts labor-intensive export industries.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

4. SOCIAL ASPECTS OF GROWTH (cont'd)

- Firm size tends to be small; approximately 50 percent of the Thai firms in Bangkok employ fewer than twenty workers. In the five provinces of the BMR, land is cheaper and more available than in the city; thus the ring surrounding Bangkok is the location of larger firms that employ sixty-five or more workers.
- Heavy and capital-intensive textile industries are also concentrated in the ring (Biggs and others 1990).
- Before recent economic growth, the BMR consisted of the city of Bangkok and a greenbelt of surrounding agricultural land.
- By 1990, the greenbelt had all but disappeared, having been converted to residential, industrial, and shop-house uses.
- Ribbon development characterizes the expansion of Bangkok into the BMR.
- Expansion has followed the principal roads in all directions, and areas between the main arteries and connecting roads have also been developed.
- Mixed land use now characterizes the entire area.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

4. SOCIAL ASPECTS OF GROWTH (cont'd)

- Samut Prakan, once one of Thailand's most important rice-producing and fish-farming provinces, was the first in the ring to become urbanized, owing principally to its access to the Gulf of Thailand and plentiful water supplies from the Chao Phraya.
- Land in Samut Prakan is now used primarily for industry, especially large, capital-intensive enterprises such as chemical production.
- The second and third landuse categories in the province are Japanese golf courses and shop houses and residences. A toxic-waste-producing plant next to a string of condominiums with a luxuriant golf course down the road is not an unusual sight.
- Nonthaburi, which was the orchard area of Thailand, is now a new residential zone for Bangkok. The former rice-producing land in Pathum Thani has been converted to residential and industrial uses.

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5. PRICE OF INDUSTRIALIZATION

- Samut Sakhon, which has access to water from the Chao Phraya and Tha Chin rivers, former tracts of orchards and saltwater fish farms now are used industrially.
- In Nakhon Pathom, land once devoted to orchard, poultry, and meat production has become the site of residential developments.
- The benefits of rapid industrialization in Thailand have included high GDP growth rates, increased incomes and employment opportunities in the BMR, diversification of export products, and easing of foreign-exchange problems. However, benefits are rarely without costs.
- Rapid and concentrated industrialization in the BMR has encouraged environmental degradation and extreme infrastructural problems, which have lowered the quality of life for residents.
- Moreover; these problems raise serious questions regarding the sustainability of further industrialization in the BMR.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

5. PRICE OF INDUSTRIALIZATION (cont'd)

- The old symbols on the Bangkok cultural landscape, temples and spirit houses, have been replaced by a new symbol: the construction crane. Since 1986 the skyline of Bangkok has changed yearly, and building has continued, undeterred by considerations such as availability of sewerage, waste disposal, water, power, road access, and parking. Small buildings, old structures, and vacant land have all but disappeared.
- During the initial phase of industrialization, demand for office space, factories, and housing was high, and developers responded immediately. However, the market was quickly saturated, and demand leveled off by 1991. Yet construction and land development continue, as profits are made in the developmental process rather than from the final product.
- In Thailand the construction industry is dominated by Japanese contracting firms, seventy-one of which were operating in Bangkok by 1989. Thai contractors have not fared poorly, because most are happy to accept joint-venture partnerships with Japanese firms. The Japanese do not confine activities to building factories and transportation facilities; they also dominate in construction of offices and housing (Economist 1990a).

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

5. PRICE OF INDUSTRIALIZATION (cont'd)

- Traffic congestion is one of the most serious problems in Bangkok, and one that will likely constrain development. The last great urban planner in Thailand, King Chulalongkorn (Rama V), died in 1910; since then, urban infrastructural development has been haphazard.
- Although it occurred throughout the 1960s, it was aimed primarily at improving the road systems that connected the capital to the provinces.
- In Bangkok, roads were created by paving over canals or by extending existent roads outward as need arose. Thus connecting streets between the main roads are few, and most are narrow; many are dead-end residential lanes.
- A study by the Japan International Cooperation Agency (1990) concluded that peak-hour traffic in Bangkok moved at a speed of eight kilometers an hour; a 1991 study found that traffic had slowed to only three kilometers an hour (Economist 1991a).

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

5. PRICE OF INDUSTRIALIZATION (cont'd)

- The continuing traffic congestion also contributes to air pollution. The air in Bangkok exceeds World Health Organization guidelines for atmospheric carbon monoxide, suspended particulate matter, and lead.
- According to a 1990 study, the city will also soon exceed guidelines for hydrocarbons and nitrogen oxide.
- The air-quality problem will likely only worsen as more Thais opt to purchase automobiles.
- Additionally, the government, seeking to lessen reliance on imported petroleum for primary energy generation, plans to increase the share of lignite, one of the dirtier fossil fuels, from 10 percent to 32 percent by 2006 (Phantumvanit and Panayotou 1990).
- A plan, for a mass-transit system has been awaiting implementation for decades, but it has never been realized because of poor planning and indecisiveness among the five governmental agencies responsible for urban infrastructure.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

5. PRICE OF INDUSTRIALIZATION (cont'd)

- Conservative monetary policies aimed at reducing external borrowing in the early 1980s also delayed improvements to the transportation system (Rigg 1991, 133-161).
- In 1991, however, various agencies of the government approved construction of three separate mass-transit systems.
- The first, a fourteen-kilometer dual-route system, will be built by a Thai-owned company on two very congested streets, Sukhumvit and Silom.
- The second, to be constructed by a Canadian firm, is a thirty-six-kilometer skytrain network that will connect the city to the northern and eastern suburbs.
- The third system is a sixty-kilometer multideck road and railroad route that will be constructed by a Hong Kong concern.
- However, numerous planning conflicts among the three systems have not been resolved, and the traffic situation is not expected to improve in the immediate future (Handley 1992).

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5. PRICE OF INDUSTRIALIZATION (cont'd)

- Like many countries, Thailand has used its rivers for waste disposal, and although the river systems have been polluted for decades, recent industrialization has seriously exacerbated the problem.
- Water pollution is most obvious in the Chao Phraya and Tha Chin, both of which flow through the BMR. The Chao Phraya south of Bangkok, according to reports, is almost dead, and the Tha Chin is also becoming anaerobic.
- Bangkok was once dubbed the Venice of the East, because of its extensive network of waterways; now, the once-famous canals are filled with black, reeking sludge.
- Until recently, untreated household waste and effluent from resource-based industries accounted for most pollutants directed into the Chao Phraya.
- Lack of adequate sewerage north of Bangkok and in the poor areas of the city along the water have resulted in higher-than-acceptable limits of coliform bacteria from human waste in portions of the river.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

5. PRICE OF INDUSTRIALIZATION (cont'd)

- Traditional industries, most of which are located in the BMR, have sparked recent growth, but they also account for many of the pollutants in the rivers.
- The majority of registered factories and industrial estates in the country are in the BMR. By 1990, 351 factories used the Chao Phraya for waste disposal, and 376 plants similarly relied on the Tha Chin in Samut Sakhon.
- Human and industrial wastes together have reduced dissolved oxygen in the streams below ambient standards.
- Since 1988, with the growth of new industries such as basic metals, fabricated products, transportation equipment, machinery, electrical machinery, and chemical products, the amounts of hazardous wastes in the streams have risen.
- In part because of lax environmental regulations, Thailand is attracting hazardous-waste-producing industries, which rose from 25 percent of all promoted projects approved by the Board of Investment in 1987 to 55 percent in 1989 (Phantumvanit and Panayotou 1990).
- Waste disposal is free; thus the country offers advantages relative to countries whose governments require waste-producing industries to treat effluents or to pay for disposal of toxic wastes.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

6. KEY POINTS

- After 1986; Thailand began to experience high rates of economic growth due to changes in the orientation of its economic structure from primary production to industrial exporting.
- Foreign investment has played a key role in this transformation, as the country has been favored for investment by the export economies in Asia.
- However, the dominance of foreign capital, specifically Japanese, in the overall Thai economic structure may someday prove problematic.
- Like other countries in the early stages of industrialization, Thailand is experiencing spatial, social, and economic effects of economic growth.
- Rising land prices and changing land values are expected. In and around Bangkok, previously undervalued vacant land has been converted to industrial and residential uses.
- Industrialization has increased the primacy of Bangkok.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

6. KEY POINTS (cont'd)

- In other newly industrializing countries, the drive toward industry has resulted in urban environmental problems.
- Bangkok is no exception; however, industrialization there has been very rapid, so that the problems have emerged immediately and accelerated quickly.
- In only four years, concentrated, export-driven industrialization has severely strained the urban environment. Waste-disposal infrastructure is inadequate; the water system is becoming anaerobic; severe traffic congestion brings unacceptably high levels of air pollution.
- These problems may affect the future growth and expansion of the city and its metropolitan region.
- The question of whether Thailand is a newly industrializing country or whether Bangkok is a newly industrializing city is important.
- Although economic evidence such as rising GDP, diversified exports, and industrial growth all suggests that Thailand as a whole has benefited, other data give a different impression.

Source: Directly quoted from Antonia,H. (1993). Rapid industrialization in Thailand 1986-199, *Geographical Review*, Vol. 83, Issue 1

6. KEY POINTS (cont'd)

- A large and poor segment of the population is agricultural and rural; that, coupled with low levels of education, suggests that an overall industrial transformation is unlikely to occur for many years, if at all, and that the disparity between the well-to-do in Bangkok and the poor in other regions of the country is likely to remain.
- This disparity could result in the reemergence of political instability in rural areas.
- The effects of rapid industrialization on socioeconomic structure, infrastructure, and environment are well documented throughout Asia. What is surprising in Thailand is the apparent lack of concern for this evidence.
- Thailand has an opportunity to set itself apart from other industrializing countries through careful planning, so that the social costs would be lessened.
- Unfortunately, once the negative aspects of rapid industrialization are apparent, they are difficult to ameliorate.

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