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Business and the Environment in Thailand

Dhira Phantumvanit*

In recent decades, the speed and intensity of industrialization and urbanization in some ASEAN and East Asian cities has been remarkable. The rapid pace of development is exacting a fair price on the quality of life in urban centers of the Asia-Pacific region. In Bangkok, Hong Kong, Jakarta, Manila and Seoul, for example, the pressure of urban congestion and urban environmental degradation is readily visible. The situation has already approached gridlock, as witnessed by residents and visitors alike.

The process of urbanization has significant implications for business in the region: It creates operating difficulties; it presents challenges which necessitate solutions; it brings societal responsibilities to the fore; and, most interestingly, it presents a range of potentially lucrative business opportunities.

Before I elaborate on the role of business in the burgeoning environmental market, I would like to discuss the region's experience, particularly Thailand's experience, in addressing the urban challenge. Next, I will touch on certain issues, such as the "Polluter Pays Principle" and green consumerism, which affect environmental markets in developing countries differently than in industrialized nations. Finally, I will discuss the nature of urban environmental markets in the region, how business can be more active in these markets, and how business can contribute solutions to the urban challenge.

THAILAND AND THE REGION'S EXPERIENCE IN URBAN ENVIRONMENTAL MARKETS

Thailand is well-known for its "laissez-faire" approach; this holds true for more than just the freedom to chew gum. We believe in progress and natural growth. Yet, we are also aware that Bangkok is growing out of proportion. It is increasingly difficult to delineate the city's boundaries. These days, when we speak of Bangkok, we are actually referring to the Bangkok Metropolitan Region (BMR), which includes Bangkok and five surrounding provinces.

The metropolitan region houses 75 percent of the nation's manufacturing industries; and, it accounts for 58 percent of the national energy consumption. The population of the BMR is expected to increase from 8.97 million people in 1990 to 10.8 million by the end of the decade, and 12.6 million by the year 2010. These figures are, of course, under-estimates, because they do not factor the influx of seasonal migrants in the industrial and service sectors.

A TDRI study estimates that by the year 2010, another 15 million people will settle in Thailand's urban centers. Meanwhile, rural areas should expect an increase of only 0.3 million, or 300,000 people. This will serve as an important watershed period in the country's development; it will mark the transition of Thailand from a rural, agricultural-based economy to an industrialized, urbanized nation.

The consequences of rapid urban growth demand different solutions to the urban challenge in the Asia-Pacific region. In other words, strategies should not emulate Western models, but rather they should respond to the particular circumstances and needs of the region.

It is difficult to control urban growth in Asian cities. The majority of our cities are primate cities, reflecting the centralized nature of our governments. It is well-known that, in most of the region, to accomplish anything, it is necessary to travel to the capital. In addition, income disparity between the urban and rural areas is highly pronounced. These characteristics are not limited to Thailand, but are evident in both Indonesia and the Philippines, among others.

Perhaps the most pressing problems in the urban arena are air and water pollution and toxic and hazardous waste management. I will, however, refrain from discussing the extent of urban environmental problems because they are already being explored in other fora. Instead, I would like to illustrate how the region's governments and business have answered the call to action, thus far.

The associated problems of massive increases in waste water and water pollution are proving of deep concern in many regional countries. For example, Taiwan is a country with more than 90,000 factories, generating 2.8 million cubic meters of waste water per day (Feng and Kreiger 1991). The country's Environmental Protection Agency has initiated a Clean River Project, which aims to meet minimum water quality standards in 44 of the country's polluted rivers by 1998.

The government initiative in Taiwan was complemented by private-sector involvement. In 1991, the Taiwanese branch of the chemical company ICI introduced environmental audits at its Chung-Li site. The audit was part of a corporate drive to go further than legal requirements and reduce overall waste by 50 percent by 1995. The audit concluded that ICI needed to boost in-house expertise and stated that it was essential for the country's chemical industry to participate with government in the rule-making process or face being "regulated out of business."

The Singaporean government's 1977 initiative to clean up the Singapore River demonstrates the methodical framework needed to address urban environmental problems. In addition to implementing corrective measures, the project also involved the resettlement of over 26,000 families and 2,800 industries, the majority of which constituted backyard and cottage industries. Both the cleaning up and the resettlement phases of the project indicate the tremendous planning and time allowance required of such initiatives.

Resettlement in itself is a delicate subject, and urban resettlement schemes, in particular, can be rather confrontational. In Bangkok, there is much controversy surrounding the building of an expressway which will require the resettlement of a few hundred families. Compared to the several thousand families that were relocated in Singapore, the loud protest of a few hundred in Bangkok illustrates the volatility of urban resettlement schemes today.

In Hong Kong, transport-related emissions, particularly those generated by a large fleet of light, diesel vehicles, are identified as the "most immediate and potentially health affecting" form of environmental degradation the colony faces. Almost two million people are affected by industrial emissions and exhaust fumes. Therefore, the production of cleaner-burning fuels is the foremost environmental objective of the Hong Kong government. In July 1990, industrial fuels containing more than 0.5 percent sulfur were banned. April 1991 marked the introduction of unleaded gasoline (ULG) with a price difference of HK$1.00, or about US$0.13.

In Thailand, the government introduced ULG last May; however, the price of ULG differs from premium gasoline by only 10 percent of the incentive offered in Hong Kong. Consequently, the conversion to ULG in Thailand has not been as drastic as in Hong Kong. All new cars in Thailand must be equipped with catalytic converters by September 1993.

With regard to toxic waste, it is recorded that there are 80,000 to 100,000 chemicals consumed in the world market today. Five to 10 percent of these chemicals are considered hazardous. It is estimated that the industrial sector in Thailand generates 2 million tons of hazardous waste each year. By the year 2001, this figure is projected to increase to 6 million tons (Phantumvanit 1990).

In this region, we are readily reminded of the 1984 Union Carbide accident in Bhopal, India. The release of methyl isocyanate, which killed 2,500 people and injured thousands more, is testimony to the growing number of incidents associated with hazardous waste management.

Although the governments of the Asia-Pacific region are currently concentrating on controlling air and water pollution, proper hazardous waste management will be one of the most pressing environmental concerns in the coming decade.

In Thailand, the government has undertaken initiatives to tackle the chronic pollution problems in the country's cities, particularly Bangkok. These initiatives create public and private investment opportunities. At the conference on "Merging Business and the Environment," co-sponsored by TDRI and the *International Herald Tribune* in January 1992, Prime Minister Anand Panyarachun stated in his keynote address that his government is installing sewerage and waste water treatment facilities in major cities across the country. This will necessitate substantial investment, since a waste water system for Bangkok alone will cost approximately 20 billion to 30 billion baht, or around US$800 million to US$1,200 million.

ISSUES FOR CONSIDERATION

Four issues will affect the manner in which the emerging environmental market in the region develops. I would like to address these issues briefly before moving on to business and environmental markets.

Polluters Must Pay

There will be no solution to environmental degradation unless business is made to pay the full cost of its polluting activities. The failure of the market to assign true environmental and social costs to polluters and those who generate waste is well understood. Society as a whole has borne the vast majority of the costs of pollution generated by pockets of businesses and consumers.

In the developing parts of the world, the need for corporate responsibility is far more pressing. Most environmental initiatives are being realized through public funds. When monies are assigned for environmental cleanup, it implies the siphoning of funds that could otherwise be used for rural development or poverty alleviation. Hence, it is critical that the "Polluter Pays Principle" be employed here.

Thailand has experienced a rapid increase in the import and use of ozone-depleting substances (ODS), related to the rapid growth in the number of foreign companies that are manufacturing products for export, which contain chlorofluorocarbons (CFCs). The use of ODS in Thailand among foreign companies jumped dramatically after the signing of the Montreal Protocol in October 1989.

Thailand's present status under this protocol means that the country can implement the ODS reduction over a 10-year period. Since the protocol went into effect, however, there has been a tremendous increase in ODS consumption, especially among Japanese and U.S. multinational firms operating in Thailand. Recently, these multinational subsidiaries have agreed to voluntarily phase out ODS consumption in Thailand. This is an example of the leading role that industry can play in solving environmental problems.

Large, multinational industries have access to appropriate technology and can afford to pay the price of pollution control. However, local medium- and small-scale industries cannot pay without affecting their competitiveness. Alleviating this disparity requires some type of government assistance, either in the form of constructing central waste treatment plants or in the provision of soft loans through a government-sponsored fund, such as the recently established Environment Fund in Thailand. Level playing fields in environmental markets cannot be applied literally in developing countries.

When industries employ the "Polluter Pays Principle," the cost of pollution control will eventually be passed on to consumers. Thus, the next obvious question is whether consumers are willing to pay the extra cost. In other words, how "green" is the Asian consumer?

Green Consumerism

I believe the phenomenon of "green consumerism" has not yet arrived in the region, although it is forthcoming. The limited size of the middle class in many developing countries and the large number of urban poor means that production is still geared primarily to less discerning groups of consumers.

Programs to educate consumers and increase environmental awareness are, however, expanding. Non-government organizations (NGOs) have been active and vocal, demanding improvement in environmental quality and the quality of life in urban areas. More stringent anti-pollution legislation, coupled with NGO

activities, will certainly act as another market driver.

Environmental awareness and education campaigns in Bangkok, which aim largely to fight air pollution and save the Chao Phraya River, have caught the imagination of many people, particularly the young. Today's children are the consumers of tomorrow.

Signs that "green consumerism" is taking hold are increasingly evident. An excellent example is the Loy Kratong festival in Thailand. Every year in November, thousands of people crowd the banks of the Chao Phraya River in Bangkok to celebrate the Loy Kratong light festival. As part of this celebration, people float candle-lit offerings on the river. Because of heightened environmental awareness, a growing number of people now shun plastic floats, instead using harmless, biodegradable floats made of banana leaves.

People open to such ideas are only a few steps away from the launching pad for green consumerism.

Action Now or Later?

Countries in the region with a strong industrial base and an expanding urban population are spending only a fraction of their Gross Domestic Product (GDP) on pollution control, well below the level of OECD countries.

However, because of sustained economic growth within the region, the government and the private sector can afford to invest in pollution control, abatement, and cleanup. Meanwhile, rising GDP figures and more stringent regulatory conditions imply that increased expenditure in real terms on pollution control and waste management is imminent.

Yet, business remains reluctant to adopt preventive strategies, fearing that increased expenditure will harm competitiveness. This notion, however, does not take into account all relevant factors and is, in fact, shortsighted.

Business based on a strong environmental footing will be less vulnerable to fines, clean-up costs, and litigation, which will grow as new regulatory frameworks begin to bite. Again, business in the Asia-Pacific region can learn from the experiences of industrialized countries: "Sandoz, Switzerland's second largest chemicals company, spent SFr 150 million on measures to prevent a repetition of the disastrous Schweizerhalle fire in 1986, including installing two catchment basins to stop water used in fire-fighting from draining into the Rhine" (Cairncross 1991).

Good overall management is another aspect of sound environment management. Following the Bhopal tragedy in 1984, Union Carbide restructured its management system, placing a high priority on environmental policy. In addition, responsibility for day-to-day environmental management is now in the hands of individual plant managers, who may spend more than half of their time on health, safety, and environmental issues (Cairncross 1991).

The "precautionary principle" also applies in environmental business. The principle that it may be better to take action now in anticipation of future problems, even though the precise size and nature of the problem is not known, remains the best practice in business as well as in environmental protection.

The Role of Multinationals

Multinational companies have a responsibility to extend technological assistance for environmental management to their overseas operations. The process should be encouraged by governments and international institutions.

Good examples of multinational initiatives include the Safe Use Project, established by the International Group of National Associations of Manufacturers of Agrochemical Products (GIFAP), to promote a better and more environmentally-sound use of agrochemicals.

The objectives of the GIFAP project could be adapted to suit a number of different sectors. Their literature

states: "The production benefits from chemical inputs in agriculture have been well demonstrated. But to continue their use, ways must be found to encourage and develop improved safety and environmental responsibility in handling and applying them."

A similar initiative in the international chemicals industry, Responsible Care, was launched in the mid-1980s by national chemical industry associations acting together. The basis of Responsible Care is for companies in the chemical industry to work together to promote better health, safety and environmental practices under a program first developed in Canada in 1985, and now operating in the United States, the United Kingdom, France and Germany.

BUSINESS AND THE ASIA-PACIFIC URBAN ENVIRONMENTAL MARKET

Environmental conditions in the region are fast deteriorating to unacceptable conditions. Governments are beginning to enforce stricter environmental legislation and investing in pollution abatement strategies. Yet, there is much to be done, and the potential for private enterprise is obvious.

The merging of business and environment in the region in a way that best ensures solutions to the urban challenge will depend on a mix of regulations, economic instruments, and self-regulation. These three approaches result in different responses from business and industry.

At present, economic instruments are not widely used in Asia, although there is considerable scope for their use in the future. Self-regulation is also less visible, although certain companies are employing this method in response to consumer demand. Regulation is perhaps the most commonly adopted approach. As industries are reluctant, government regulation, at least initially, is required.

The result of regulatory action by the government is evident in the emergence of environmental markets. Government regulation and public demand for environmentally-friendly products are forcing business to alter its production methods and install pollution clean-up capabilities. Translated into market terms, these changes create a sizable demand for environmental management services and provide new venues for business investment.

During the 1980s, the real potential for these markets in Thailand, the Republic of Korea, Taiwan, and Malaysia slowly translated into hard and fast demand because regulatory and environmental frameworks were limited, and enforcement was not a priority. The 1990s, however, promises to be much different, with more intensive expansion of environmental markets open to foreign investments.

Independent estimates suggest that the world market for pollution control equipment is at least US$200 billion. The demand for pollution control technology is expected to increase at a rate of 6 percent per year for the next five years in the United States and by over 7 percent in the European Community. As government regulation and green consumerism gain momentum, this trend will certainly spill over into developing countries.

Currently, Thailand offers business opportunities in three markets: equipment for pollution control and waste treatment; new, specialized utilities for pollution control and waste treatment; and professional environmental services, such as environmental consultancy, management, and information services.

At present, no more than 15 percent of the pollution control and waste treatment equipment used in Thailand is manufactured locally. Clearly, there is an opportunity for local and regional companies to capture a larger share of this market through investment in assembly and manufacturing facilities for more efficient, innovative technology. Private-sector opportunities are also evident in the construction and operation of environmental infrastructure, in particular, domestic and industrial treatment systems and solid waste disposal.

Environmental business is not limited to the manufacturing or industrial sector alone; the financial sector can participate, as well. The Industrial Finance Corporation of Thailand (IFCT) has provided loans amounting to about 200 million baht (US$8 million) per year to its industrial customers. This figure is expected to increase

as environmental business becomes more lucrative. The Environment Fund, established by the government, has a capital of 5 billion baht to support industries and municipalities in pollution control.

As the drive to privatize public work projects grows, service firms will be able to develop the market for training programs for technicians and managers. Similarly, the air-pollution control market within the energy and manufacturing sectors will also rise sharply, as power generation plants, auto-related industries, petroleum refineries, and the chemical and the petrochemical sectors, in particular, are forced to comply with more stringent industrial emission and abatement standards.

Few companies are now involved in operating waste treatment plants in Thailand. The prospects for this market are good. In 1991, planned public-sector investments in pollution control exceeded US$690 million; private-sector investment is estimated at US$210 million. Demand for treatment plants is expected to grow at 20-25 percent a year in the next decade (International Finance Corporation 1991).

Environmental services, the provision of pollution monitoring, and inspection services, are predominantly public enterprises in Thailand. The main growth area for private investment in this sector is environmental consultancy services, particularly for environmental impact assessment and hazardous waste management. The environmental consultancy market in Thailand alone is estimated to be worth US$20 million per year (International Finance Corporation 1991).

CONCLUSIONS

The status of the urban environment in the Asia-Pacific region is approaching critical conditions in some areas, leading to a rising demand for environmentally-sound technology and services. This demand is being met by the emergence of environmental markets.

Environmental markets are testimony to the fact that sustainable development is not simply a vision, but a reality. Moreover, they illustrate that economic gains can be part of protecting the environment.

At the same time, we must acknowledge that economic development affords the financial and technological flexibility and opportunities required to implement environmental management programs. In the Asia-Pacific region, economic growth, more stringent government regulations, and increased public awareness, encourage the development of healthy environmental markets. Action can be taken now which will both alleviate environmental pollution and generate new opportunities for business.

MAJOR REFERENCES

Business Council for Sustainable Development. 1991. "Changing Course." Draft, October.

Cairncross, F. 1991. "Costing the Earth," *The Economist,* The Economist Books, Ltd; *Far Eastern Economic Review*, "Focus: Environment in Asia," September 19, 1991.

Feng, Henry, and L. Kreiger. 1991. "Environmental Auditing: An Asian Experience" in *Polmet 1991: Pollution in the Metropolitan and Urban Environment*, Vol. 1. Hong Kong Institute of Engineers.

GIFAP. 1991. "Safe Use Project: Improving Standards in Agrochemical Use." Leaflet produced by the International Group of National Associations of Manufacturers of Agrochemical Products (GIFAP).

International Finance Corporation (IFC).1991. *Identifying Market Opportunities in Environmental Goods and Services, Thailand.* March.

Phantumvanit, Dhira and Theodore Panayotou. 1990. "Industrialization and Environmental Quality: Paying the Price." Synthesis Paper No. 3. Presented at the Thailand Development Research Institute Year-End Conference, December 1990.

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