

PROTECTING THE ENVIRONMENT

THE GROWING CONCERN

Thailand in general and Bangkok in particular are environmental disasters, almost exclusively man-made. Rapid economic development has so seriously damaged the environment that the resulting widespread problems can no longer be absorbed or ignored. Concern for the environment has increased in Thailand in the last few years, and significantly more attention is now being given to environmental issues affecting the country.

The environment will continue to receive prominent attention as Thailand becomes more industrialized, many of its natural resources become depleted, and the general populace becomes aware of the impact of the ruination of the environment and failure of conservation on their daily lives and the health of their families.

ENVIRONMENTAL LAWS

Thailand has had environmental laws or laws with environmental aspects for many years. As is evident, however, strict enforcement has hardly been the norm. Administration of Thailand's 70-plus environment-related laws is a bureaucratic nightmare. At a certain point in time, at least 14 different agencies were responsible for traffic and air pollution standards and controls, more than 10 government agencies for water management and treatment, and 4 government agencies for control of pollution in the Chao Phraya River alone. Hazardous material is the subject of nine laws administered by ten different agencies, councils, and boards. In addition to problems resulting from redundant laws and overlapping bureaucratic responsibilities, budgetary constraints greatly reduce the monitoring of compliance with regulations and the detection and prosecution of violators.

The Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (A.D. 1992) is the most significant environmental legislation. It repealed and replaced the Enhancement and Conservation of National Environmental Quality Acts of 1975, 1978, and 1979. The 1992 Act continues and expands the responsibilities of the National Environment Board (NEB), created by the 1978 amendment to develop environmental policy and coordinate issues relating to environment and quality standards.

The enactment in 1992 of the Enhancement and Conservation of National Environmental Quality Act was described by then Prime Minister Anand Punyarachun as the dawning of a new era of the environment of the country. This comprehensive legislation elevates the NEB to ministerial level, creates incentives for environmental promotion and preservation, prescribes penalties for polluters, provides for the establishment of a fund for promotion and preservation of environmental quality, and gives the public a greater participatory role in addressing environmental problems.

Environmental laws in Thailand are in their infancy with regard to effectiveness, even though they may have existed for many years. The nation has only recently begun to awaken to the need for community consciousness and concern and action against the degradation of the quality of life.

THAILAND'S FUTURE ENVIRONMENT

A ban on timber cutting was imposed only in 1990 after most of Thailand's forests had already been decimated. Illegal logging continues unabated. Illegal loggers are now stripping the rainforests

of Myanmar (Burma), Laos, and Cambodia, and are trying to do so in Vietnam as well. Excessive shrimp farming, plus the failure to use modern conservation techniques, has destroyed coastal mangroves and fish and fowl breeding areas. Overfishing has depleted the Gulf of Siam of pelagic fish.

A nineteenth-century Native American Cree Indian said, "Only when the last tree has died and the last river been poisoned and the last fish been caught will we realize that we cannot eat money." At major international conferences, several of which Thailand has recently hosted, the nations of the world are still debating how to protect and conserve the planet's ecosystems to prevent that calamity from occurring.

In general, while various laws pertaining to environmental pollution exist, the reality is that because of lack of funding to engage more government inspectors and a lack of good faith efforts to comply with existing laws, industries consuming large quantities of water are discharging toxic levels of pollutants into this country's streams, rivers, and coastal waters. With the promulgation of a new Factories Act in 1992, which increases penalties on polluters and places greater emphasis on the relocation of industry to Thailand's industrial estates, there may be some hope of improving the situation. The Industrial Estate Authority of Thailand is seeking to achieve sustainable environmental standards and attempting to provide adequate infrastructure to meet world-acceptable industrial environmental effluent standards.

Trade in endangered wildlife has focused world attention on Thailand and resulted in a ban in 1991 by the Convention on International Trade in Endangered Species on Thailand's trade in wildlife products, fish, and rare plants. The Thai government responded by amending laws to protect wildlife and flora, and increasing penalties and enforcement against illicit wildlife traders. The retaliatory trade ban against Thailand was lifted in early 1992. Also, Thailand signed the 1992 Rio Earth Summit treaties on biodiversity and climate.

While environmental and conservation awareness continues to gain momentum, the regulations and standards set by the government will have to be upgraded, coordinated, strictly abided by, and stringently enforced if there is to be any hope of enjoying a healthy environment in the future. Severe penalties and fines must be imposed on those who violate these laws. Such violators should also be required to bear the costs of cleaning up the damage they cause. The important factors are the extent and intensity of political will and financial commitment of the government, and how long the existing natural resources will last.

AIR QUALITY

The Office of the National Environment Board has set emission standards for oil refineries, cement, iron smelting, and steel rolling plants. In addition, the Ministry of Industry has set requirements for the mandatory use of electronic devices in locally produced automobiles to help reduce air pollution.

While there are established emission standards for motor vehicles that limit carbon monoxide (CO) emission when the vehicle is idle and restrict smoke concentration to meet air pollution control standards, the enforcement of these target levels has been inadequate and irregular. As a result, existing air pollution levels and CO emissions in Bangkok are regularly higher than the prescribed safety levels. Studies of Bangkok traffic police personnel show a remarkably high incidence of respiratory ailments.

In 1991 the government also introduced the use of unleaded gasoline. This was one of the first steps taken by the government to reduce the high level of pollution. Leaded gasoline was banned in 1996.

It is questionable whether the situation will rapidly improve, even with new engine designs and increased technology. Future reductions in vehicle lead emissions could improve, as catalytic converters become compulsory in Thailand. However, current air quality conditions will continue to deteriorate until there is strict enforcement of, and total commitment to, environmental laws.

LAWS CONTROLLING AIR POLLUTION

Thailand is one of the 194 signatories of the Montreal Protocol, enforced in Thailand in 1989. Although the government's policy of freezing imports of ozone-depleting substances, such as CFCs, at 1991 levels is working to a certain extent when compared to similar countries, imports and local consumption of these substances are still very high, more than triple 1989 consumption levels. Thailand's domestic users of ozone-depleting substances are the electronics and printed circuit board industries, refrigerator and air conditioner manufacturers, and a host of other affiliated sectors, as well as end consumers needing to refill mobile air cooling units.

The Thai government has acknowledged the importance of rapidly reducing the use of CFCs and has commissioned a country-wide study setting out strategies for a plan of action. However, getting industry's compliance is expected to be difficult and will require the government to take a firm stand through regulation. By virtue of the Notification of the Ministry of Industry Re: Prescribing the Quantity for Importation of CFC dated 31 December B.E. 2546 (A.D. 2003), the Industrial Works Department prescribes the quantity for importation of CFC from 2003 to 2010.

Announcement of the National Executive Council No. 16 B.E. 2514 (A.D. 1971) regulates air pollution caused by motorboats which discharge dangerous smoke. Those convicted of violating the law are subject to a fine of THB 200. At the discretion of the police, the offending motorboat may be taken into custody.

The Land Traffic Act B.E. 2522 (A.D. 1979), as amended by the Land Traffic Act No. 8 B.E. 2551 (A.D. 2008), prohibits using automobiles and motorcycles which discharge smoke, dust, or noise exceeding the prescribed basis. Those convicted of violating the law are subject to a fine of not more than THB 1,000.

The Land Transport Act B.E. 2522 (A.D. 1979), as amended by the Land Transport Act No. 11 B.E. 2550 (A.D. 2007), determines that vehicles used in transport must be adequately powered and correctly fitted with equipment and components as prescribed in Ministerial Regulations. Those convicted of violating the law are subject to a fine of not more than THB 50,000.

The Notice of the Kingdom's Traffic Officer, issued in 1990 under the authority of the Announcement of the National Executive Council No. 16 B.E. 2514 (A.D. 1971), prescribes standards with regard to dangerous smoke and carbon monoxide discharged from automobiles and motorcycles, while the Notification of the Harbor Department No. 177 B.E. 2527 (A.D. 1984), issued under the authority of the Announcement of the National Executive Council No. 16 B.E. 2514 (A.D. 1971), prescribes standards with regard to dangerous smoke discharged from motorboats.

New standards and methods for measuring the smoke from automobiles are prescribed under the Notification of the Ministry of Science, Technology, and Environment dated June 17, 1997, issued under Section 55 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (A.D. 1992).

Notification of the National Environment Board No. 10 dated April 17, 1995, in addition to regulating air pollution discharged from motor vehicles, defines standards of air quality. It specifies maximum standards for various pollutants, such as carbon monoxide, nitrogen dioxide, and sulfur dioxide. The methods for measuring air quality in the atmosphere are prescribed by the Notification of the National Environment Board No. 10, the Notification of the Pollution Control Department dated June 26, 2007, and the Notification of the National Environment Board No. 30 dated September 14, 2007.

The Factories Act B.E. 2535 (A.D. 1992), including certain regulations and notifications issued under the 1969 Factories Act, is the principal law controlling air pollution by factories. In addition to providing penalties for a company operating a factory in violation of stipulated requirements, the company's directors, managers, and operators of the factory may also be individually liable for damages and criminal violations, unless they can prove they did not have knowledge of the acts related to air pollution.

Although the Enhancement and Conservation of National Environmental Quality Acts of 1975, 1978, and 1979 and the Factories Act of 1969 were technically repealed and replaced by the 1992 Acts, the various ministerial regulations and notifications issued under those earlier Acts (which are a primary source of environmental controls) were not repealed by the new Acts. The regulations and notifications continue in full force until specifically repealed by new regulations.

Other laws related to air pollution caused by sources other than motor vehicles and factories are the Public Health Act B.E. 2535 (A.D. 1992), as amended by the Public Health Act (No. 2) B.E. 2550 (A.D. 2007), which contains general provisions with regard to preserving the environment, together with the notifications issued thereunder.

Sections 420, 421, and 1337 of the Civil and Commercial Code and Section 396 of the Penal Code also apply here.

Additionally, in October 1991, under the policy of the Ministry of Industry, a notification was issued by the Ministry of Industry to reduce air pollution caused by automobiles manufactured in Thailand as follows:

- From January 1, 1993, gasoline engine automobiles over 1599 cc assembled in Thailand must have a catalytic converter exhaust emission control system.
- From September 1, 1993, in order for engines to be compatible with the required unleaded gasoline, every locally assembled automobile, including those under 1600 cc, must possess a catalytic converter exhaust emission control system.

In relation to industrial emissions, the Department of Industrial Works (DIW), operating under the Ministry of Industry, is mandated to monitor and enforce standards on industrial operations. DIW has the authority to revoke a factory's operating license if the standards set are not being followed.

Emission guidelines for polluting substances and their effects can be provided by DIW for all industries.

LAWS CONTROLLING WATER MANAGEMENT

The Public Health Act B.E. 2535 (A.D. 1992) permits local authorities to issue by-laws that cover subjects ranging from the disposal of rubbish and dirt to the control of operations by a commercial entity that may have an effect on an individual's health. Violation of this Act can result in fines.

The Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (A.D. 1992) empowers the Ministry of Science, Technology, and Environment to issue emission or effluent standards for the control of wastewater discharge and the discharge of wastes into public waters. The Cabinet has assigned certain areas, currently some districts in Ayuthaya and Pathum Thani provinces, to be reserved as sources of water by the Metropolitan Waterworks Authority. Factories cannot be set up or expanded in these areas if they discharge wastewater containing heavy metals or poisonous substances used in agriculture, or other chemicals such as PCBs, cyanide, arsenic, and phenol. It is forbidden to set up and expand factories in areas reserved for water supply. The only exceptions are factories which release wastewater with a biochemical oxygen demand of less than one kilogram per day or those which are set up in Navanakorn Industrial Estates I and II.

The Act for the Cleanliness and Orderliness of the Country B.E. 2535 (A.D. 1992) regulates and controls offenses to the environment deemed dangerous or unsightly. The Act specifically prohibits the dumping of waste and waste byproducts into bodies of water.

Under the Building Control Act B.E. 2522 (A.D. 1979), as amended by Building Control Act (No. 2) B.E. 2535 (A.D. 1992), (No. 3) B.E. 2543 (A.D. 2000), and (No. 4) B.E. 2550 (A.D. 2007), local authorities are permitted to establish rules and guidelines as to the number and type of toilets a building should have as well as to request that certain infrastructure be provided for storm and wastewater drainage.

Ministerial notifications and regulations issued under the Factories Act B.E. 2512 (A.D. 1969) control the level of effluent discharged by factories and restrict concentration levels of chemical and/or metal pollutants to defined parameters.

The Navigation in Thai Waters Act B.E. 2456 (A.D. 1913) bans the discharge of pollutants and substances harmful to any water source. Permission to dump anything from stones to chemical products into canals, rivers, lakes, or ocean bodies must be obtained from the Harbor Department.

OTHER ENVIRONMENTAL LAWS

Laws Controlling Noise Pollution

Noise pollution caused by motor vehicles is regulated by the Announcement of the National Executive Council No. 16 B.E. 2514 (A.D. 1971), which prohibits the use of automobiles, motorcycles, or motorboats that produce noise levels deemed dangerous.

Standards for acceptable noise levels of automobiles and motorcycles and methods for inspection are specified under the Notification of the Ministry of Natural Resources and Environment Re Noise Levels of Motor Cars dated 7 July B.E. 2546 (A.D. 2003), issued under Section 55 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (A.D. 1992).

The Notification of the Harbor Department No. 177 B.E. 2527 (A.D. 1984), issued under the authority of the Announcement of the National Executive Council No. 16 B.E. 2514 (A.D. 1971), sets standards for acceptable noise levels of motorboats.

Regulations and notifications issued under the Factories Act B.E. 2535 (A.D. 1992) are the major laws controlling noise pollution from factories. In addition, the Ministerial Regulation on Prescribing Standards for Administration and Management of Occupational Safety, Health, and Environment in Relation to Heat, Light, and Noise B.E. 2549 (A.D. 2006), issued under Sections 6 and 103 of the Labour Protection Act B.E. 2541 (A.D. 1998), also addresses the issue of noise pollution.

Lastly, other laws controlling noise pollution are Sections 25 to 28 of the Public Health Act B.E. 2535 (A.D. 1992); the Act Controlling Advertising by Using Loud Speakers B.E. 2493 (A.D. 1950); the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (A.D. 1992); Sections 420, 421, and 1337 of the Civil and Commercial Code; and Sections 370, 372, and 376 of the Penal Code.

Laws Controlling Solid Waste Disposal

Solid waste management comes under the Public Health Act B.E. 2535 (A.D. 1992), which designates local administrators as being fully responsible for developing, operating, and enforcing regulations regarding solid waste disposal. The Public Health Act requires that local communities must provide receptacles as needed, provide collection and disposal of solid waste, and collect fees. Violation of this Act is subject to a fine of up to THB 5,000 per offense. There are also rubbish disposal provisions under the Act for the Cleanliness and Orderliness of the Country B.E. 2535 (A.D. 1992) and ministerial regulations under the Building Control Act B.E. 2522 (A.D. 1979).

Laws Controlling Toxic and Hazardous Waste

Quite a few laws and administrative agencies are responsible for toxic substances, pollution control, and hazardous waste disposal. Two of the most important statutes are detailed below.

Following a series of headline-grabbing disasters in Thailand resulting from the improper or inadequate handling of hazardous materials—including two incidents involving toxic chemicals at the Klong Toey Port of Bangkok that caught fire; a truck loaded with explosives that exploded and wiped out a roadside village; and an LPG tanker that overturned, leaked gas, and exploded on a Bangkok thoroughfare, resulting in a fire that killed close to 100 people—the Hazardous Substances Act was passed in B.E. 2535 (A.D. 1992).

The Hazardous Substances Act B.E. 2535 (A.D. 1992), as amended by the Hazardous Substances Act (No. 2) B.E. 2544 (A.D. 2001) and (No. 3) B.E. 2551 (A.D. 2008)—replacing the old Poisonous Substances Acts of 1967 and 1973—controls the import, export, production, storage, transport, possession, sale, and use of dangerous substances defined as explosive, inflammable, oxidized and peroxidized, poisonous, infectious, radioactive, mutant, corrosive, irritable, and others, such as chemicals which pose a threat to human and animal life or property. Penalties have been increased to fines of up to THB 1 million and imprisonment of up to ten years. The Ministries of Agriculture, Industry, Finance, Public Health, Interior, Education, Science, Technology, and Environment and the Office of the Prime Minister jointly control substances used in agriculture, industry, and public health. The various ministries are responsible for setting regulations and considering applications for the right to import, export, or manufacture chemicals deemed dangerous.

The Land Transport Department announced on November 30, 1992, that it will require truck drivers who transport hazardous cargo, such as petrol and gas, to obtain a license before they are allowed to work. Drivers will be trained in handling dangerous cargo, and the educational background of those who apply for a new license will be considered. The Public Works Department has set regulations for petrol and gas companies to improve road safety, which are the Notification of the Ministry of Industry re: Land Transport of Hazardous Substances B.E. 2546 (A.D. 2003) and the Notification of the Resolution of the Hazardous Substances Committee re: Land Transport of Hazardous Substances B.E. 2545 (A.D. 2002).

The Interior Ministry is being urged to introduce legislation requiring private firms that produce or store poisonous chemicals, petrol, gas, and acid to have insurance coverage. The government's Insurance Department claims insurance is needed to reduce operators' burden when accidents

occur. At present, there are no laws requiring insurance coverage on the production and storage of these hazardous substances, although insurance coverage is required for the transportation of hazardous products. This regulation is often flouted by operators who carry hazardous substances in a slipshod way.

Market indicators suggest that services and products related to the collection, transport, specialized treatment, and disposal of hazardous wastes, and the handling of hazardous substances, will be in increasingly strong demand in Thailand. The whole hazardous waste sector promises to be Thailand's next big environmental market after industrial wastewater.

The Factories Act B.E. 2535 (A.D. 1992) provides the Ministry of Industry (MOI) with the power to establish and oversee factory operations. While the Act allows the MOI to issue regulations setting limits on discharges of air pollutants, effluents, or wastes from factories, and allows for occupational health and safety standards for the workplace, a loophole exists exempting government-owned factories from compliance.

Pursuant to the Hazardous Substances Act B.E. 2535 (A.D. 1992), the MOI established the Hazardous Substances Control Bureau to manage hazardous substance matters.

Where there are no specific laws already in existence, the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (A.D. 1992) authorizes the Ministry of Science, Technology, and Environment to issue regulations to control hazardous wastes.

Laws Protecting Plants and Wildlife

Thailand has been a party to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) since 1973. Three departments are assigned by the Thai Ministry of Agriculture and Cooperatives to cooperate with the CITES Secretariat. The Royal Forestry Department is in charge of wild animals, the Department of Fisheries oversees marine life, and the Department of Agriculture is responsible for wild flora, as the treaty does not prohibit trade in plants that are artificially propagated.

In early 1992, the Wild Animal Preservation and Protection Act B.E. 2503 (A.D. 1960) and NEC Decree No. 228 B.E. 2515 (A.D. 1972) were repealed by the Wild Animal Preservation and Protection Act B.E. 2535 (A.D. 1992). The latter Act restricts and regulates the hunting, breeding, and trading of wild animals, and establishes a National Committee on Wild Animal Preservation and Protection. Permits issued by the Forestry Department are now required for the hunting, breeding, and trading of protected animals. There are severe penalties for violations of this Act.

Also in early 1992, the Plant Species Act (No. 2) B.E. 2535 (A.D. 1992), amending the Plant Act B.E. 2518 (A.D. 1975), was passed, providing for protection of certain species of wild flora. In mid-2007, the Plant Species Act was amended again by the Plant Species Act (No. 3) B.E. 2550 (A.D. 2007), which lays out the qualifications of an applicant for a license to sell, import, or export controlled seeds for trade. In July 1993, the Department of Agriculture (DA) issued a regulation listing 157 wild plant species to be protected by trade prohibitions or regulations. Importers, exporters, and re-exporters of the conserved plants have to get permits from the DA and pay a THB 100 fee for each shipment. Those wishing to artificially propagate conserved plants for sale will have to register their nurseries with the DA.

ENVIRONMENTAL LAW VIOLATIONS

There have been very few environmental criminal prosecutions pursued or penalties imposed. Current penal laws have had minimal deterrent effect. With the increasing awareness of environmental problems and increasing attention to environmental laws, it is reasonable to expect more attention to enforcement and heavier punishment for violators in the future.