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Laws for Industrial Pollution Protection.

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Abstract

Legal measure is one of the protection of industrial pollution measures in Eastern Seaboard Development Program which focused on Environmental Law, Civil Law, and Administrative Law.The Basic Law for Environmental Pollution Control, 1967, the Air Pollution Control Law, 1969, the Water Pollution Control Law, 1970, and the Waste Management Law, 1970, of Japan are the pattern of the study. The Factory Act .2535 (A.D.1992), the Enhancement and Conservation of National Environmental Quality Act B.E.2535 (A.D.1992), the Industrial Estate Authority of Thailand Act B.E.2522 (A.D.1979), the City Planning Act B.E.2518 (A.D.1975), and the Public Health Act B.E.2535 (A.D.1992) are the effective laws of Thailand for the protection of industrial pollution.

The ineffectiveness of the existing laws enforcement in Thailand are:

1. Each law has its own purpose, therefore when a law interpreted to cover the desired issues in the matter, the enforcement may cause problems.
2. There is no remedial provision for the industrial pollution injured parties except under Civil Law.
3. The administrative system sees incoherence between agencies therein while industrial pollution protection calls for stronger and more effective cooperation among those concerned.
4. The laws do not provide for indirect impacts. This causes the injured parties that are not protected by laws.

Recommendation

The recommendations are for an appropriate structural elements of Thailand environmental law which should be in the same form as Basic Law for Environmental Pollution Control of Japan. The structure of Law should be as follows:

1. The essence of the law which provides rules for environmental protection.
2. The part that provides power in promulgating specific laws such as the Air Pollution Control Law, the Water Pollution Control Law, etc.
3. The part that provides for rehabilitation in the form of Environmental Fund should covers two aspects ; (1) Clean-up aspect, and (2) Remedial aspect. The remedial aspect covers the compensation to the injured parties who have received indirect pollution impact.
4. The part that provides sanctions which shall make the application of the law more effective. There are two alternatives:Penal sanction by imposing penalties on offenders, and Administrative sanctions by means of non-permission of factory operation, non-renewal of licenses, etc.
5. Agency. This part should provide the decentralization of the central government to local governments in order to regulate, set environmental quality standard without conflicting with central standard, etc., within their territories. Such local government activities should inform National Environment Board as being a central government agency which deals directly with the environmental control.

Key words ; Environmental Laws, Civil Law, Administrative Law, Constitution, Basic Law for Environmental Pollution Control Law, Air Pollution Control, Water Pollution Control Law, Waste Management Law, Factory Act, Enhancement and Conservation of the National Environmental Quality Act, Industrial Estate Authority of Thailand Act, City Planning Act, Public Health Act.

1. LAWS FOR INDUSTRIAL POLLUTION PROTECTION

One of the effective measures to protect pollution from industrial activities is law. This Chapter intends to study the following:

(1) Environmental Laws.
(2) Civil Law.
(3) Administrative Law.

2. ENVIRONMENTAL LAW

Since the occurrence of environmental catastrophes in Japan, the Japanese people have argued for their environmental right, that a clean environment is essential for human life, and that each person is entitled to the preservation and the maintenance of the quality of the environment for their individual enjoyment. Where the quality of environment is threatened by pollution, an injunction can be sought on environmental right irrespective of the existence of health injury.

Article 13 of the Japanese Constitution provides that "All people shall be respected as individuals. Their rights to life, liberty and the pursuit of happiness shall, to the extent that it does not interfere with public welfare, be the supreme consideration in legislation and in other governmental affairs".

Article 25 provides that "All people shall have the right to maintain the minimum standards of wholesome and cultured living. In all spheres of life, the state shall use its endeavours for the promotion and extension of social welfare and security, and of public health".

Although there is no environmental right mentioned directly, these two articles of the Constitution confirm that the people have the right to life, liberty, and the pursuit of happiness, with security provided by the state to protect such rights.

However, it should considered that, if we interpret the right written in these articles of the Japanese Constitution as an environmental right, then there should be laws enacted to define environmental right as a legal right.

As regards environmental right, juristically, the environment is not defined as a free right. The right in the environment is deemed to be a part of the right of property owner. The destruction of natural property as a consequence of use is possible for the convenience of using such property which is derived from the principle that the owner is entitled to freely use his property from the surface up to the air. In other words, there is no condition prohibiting the destruction of the environment as if the environmental right was industrial matter (Sunee, et.al.1988). In other words, the environmental right serves as a property right.

This thinking should change. Natural environment is essential to human life and should be separated from ownership of property. The right to enjoy natural property should belong to everyone without there being a specific owner. The environment should belong to all and not one (Salmond J. 1924).

The environmental right mentioned above refers to the principle of property ownership giving the owner full power in using his property. The principle should be changed as the environment belongs to everyone, be it water, air, sunlight, or beautiful landscapes. When the environment is destroyed, the party destroying it shall be held responsible.

The Fundamental Law to Prevent Public Nuisance, 1867 (amended in 1970, 1971, 1973, 1974 and 1983) reflects the fundamental thought of Japanese people that a pollution-free environment is necessary for mankind and therefore everyone has the right to the preservation and control of the quality of the environment. In case of interference where environment standards are compromised, the state should formulate protective and remedial measures. Article 1 of the law provides that "...in view of the extreme importance of the prevention of public nuisance for assuring wholesome and cultured living of the policies, and to preserve the living environment together to protect the health of the nationals, by means of making clear the responsibility of the enterprises, the state and the local public entities concerning prevention of public nuisance, as well as of prescribing the basic matters of policies and measures concerning prevention of public nuisance" (Keidaren, 1976).

Besides, Public Trust Doctrines, as in the United States, recognize the equal rights of the people to live and enjoy good quality resources and nature and to be entitled to the benefit of their direct or indirect use or their recreation capacities, and hold that the state shall have the responsibility to preserve the environment in good condition for the benefit of its citizen for all generations. In other words, Public Trust Doctrines entitle American people to environmental rights. The National Environmental Protection Act (NEPA) also entitles American citizens to live in a good environment. It is the duty of the state to protect and maintain the environment and eliminate the destruction of the environment. In some states in U.S.A. such as Pennsylvania, California and Wisconsin, state constitutions have been amended to confirm that the state is the caretaker of the people's natural resources and to recognize the state as responsible for the protection and maintenance of natural conditions, the beauty of the landscape, and the history of the environment (William H.Rodgers, 1977).

With regard to international society, the African Charter on Human and Peoples' Rights provides that "All peoples shall have the right to a general satisfactory environment favourable to their development".

In reference to Japanese environmental right, the study group of the Osaka Bar Association, 1971 on "the establishing of the environmental right", came out with the result that "...the environment belongs to co-ownership of all persons. The exclusive use of the environment without consent of the co-owners is per se illegal. When such illegal activities pollute or threaten to pollute the environment, the residents of the area should have the right to enjoin such a violative invasion as an expression of the co-ownership, whether or not concrete injuries have happened".

In other words, human beings have the born right to enjoy good surroundings and to govern them. This right is a fundamental right stemming from Article 13 and 25 of the Japanese Constitution.

The Osaka Bar Association study did not address environmental right as being a legal right.

It seems to be the duty of the government to preserve good environment for citizens according to the Constitution. From this point of views, some affirmative activities for administrative agencies should be imposed as well as defining legal obligations to protect the environment. Consequently, a citizen would then be able to file a suit against the agency because of neglect of its duty. Moreover, this environmental right will provide a fundamental rationale to any plaintiff who intends to protect environmental interests by bringing an injunction suit against a polluter. Also a citizen who has suffered damage from deterioration of the environment can sue under the Tort law of the Civil Law Article 709 which provides that "A person who violates intentionally or negligently the rights of another is bound to make compensation for damage arising therefrom". And Article 717 provides that "If any damage has been caused to another person by reason of any defect in the construction or maintenance of a structure or land, the person in possession of a structure shall be liable in compensation for damage to the injured party". This means that when damage is clearly present, the damaged party then has the right standing to sue against the violator.

Article 206 of the Civil Law ; Mimpo, Law No.89, 1896 (Meiji 29.4.27) provides that "... the owner of property can freely consume and make profit of it and can deal with its right within the regulation of the statue.." Upon this Article, the owner of the property has a right to sue against the violator. This right is a legal right. In other words the property right has been stated in the statue, though the environmental right has not been clearly stated. Though almost every citizen seems to recognize the importance of the environment, still no statue mentioning environmental right has been enacted.

The environmental right has been criticized from the aspect of Civil Law by Prof.N. Harada (N.Harada, 1971) that "...the environmental right should not be legal right in civil procedure, especially in an injunction suit, which is directly realized at court, but it should be realized at the level of legislation or administration. Protection of environment and industrial development have both important social values. No one can easily decide which one should be preferential as the environmentalist say".

One can draw a line between two values only from an individual and concrete judgment based on regional and synthetic analyses. To draw a line is not a matter between a resident and an industry, but a broad regional matter which belongs to a highly political level. Judgment on the injunctive suit, therefore, is outside of the recognition by court, unless invasion of the environment injuries individual and concrete right (we may say invasion beyond the limitation of endurance).

Despite the traditional legal right doctrine at court that requires some concrete statutory right, the court, in most decisions, has taken the environmental right to be under judgment. This might be because of the severe pollution diseases that affect life, health and property of the people, the difficulty in proving the relationship of the cause and effect

of the problem, and the lack of the extant environmental right statutes.

It may be concluded here that, however, environmental right has not yet been stated definitely in a statute or in cases in Japan. Apparently, the fundamental rights of the Japanese people are secured by the state to include environmental right.

From a legal aspect, legal measures extant against environmental pollution vary depending on the nature of the pollution, such as air pollution and water pollution (Ken Otani and Ui Jun, 1972). But due to the critical danger of the pollution, it is necessary to integrate and systematize laws and regulations relating to pollution control, and to set certain criteria in order for the national government, local governments, and enterprises concerned to clarify their responsibilities. The Basic Law for Environmental Pollution Control was enacted to meet such requirements.

As for Thailand, Article 65 of the Constitution of the Kingdom of Thailand, B.E.2521 (A.D.1978), provides that "The state shall preserve, and maintain an environmental balance and shall eliminate pollution which endangers the health and hygiene of the people". Considering this provision together with state policy regarding development towards industrialization, the government should be reminded of the importance of environmental rights in maintaining the people's quality of life.

In conclusion, based upon the said environmental right mentioned above, it is doubtless that the environmental rights are not a matter to ignore. Good environment is essential to the life and the living of human beings. The state has a duty to protect the environment from being destroyed, the state should be ready to penalize the party destroying the environment.

2.1 JAPANESE ENVIRONMENTAL LAWS (Environment Agency, 1976)

The Japanese environmental law that has been chosen for analysis is the Basic Law for Environmental Pollution Control, 1967, as it is a major law that provides the following specific environmental laws, i.e., the Air Pollution Control Law, 1968, the Water Pollution Control Law, 1970, and the Waste Management Law, 1970, as follows:

2.1.1 THE BASIC LAW FOR ENVIRONMENTAL POLLUTION CONTROL, 1967.

ESSENCE OF THE LAW

The law provides general rules concerning pollution control. This law was designed to (i) protect the people's health and (ii) preserve their living environment. Therefore, the purposes of the law are:

(1) to identify the responsibilities of the national government, local governments and enterprises for the control of environmental pollution.

(2) to decide basic requirements for environmental pollution control measures.

There was a clause calling for ensuring harmony with the sound development of the nation's economy in this law. It thus seemed the government gave more importance to economic development than to the health of the people. This was later has deleted in order to make clear that priority is now given to the protection of health and preservation of the living environment by the amendment of the Basic Law in 1970.

The word "kogai" (the legal aspects of which will be analyzed later) in Japanese means

"environmental pollution" as prescribed in Article 2, with seven typical forms of environmental disruption, viz., air pollution, water pollution (including the effects on the colour or temperature or water) and the deterioration of sediment (including the accumulation of slime), soil pollution, noise, vibration, land subsidence and offensive odour, all for which the government, based on consideration of these types of pollution, sets the policy for environmental control.

Moreover, the law allows the government to establish systems for the settlement of dispute relating environmental pollution and relief for damages caused thereby.

Regarding financial cost, the government will support local governments by means of a fiscal year budget. As for enterprises, the national government and the local governments will endeavour to take necessary measures such as taxation for the encouragement activities toward environmental pollution control.

Under the provision of the Basic Law, the Conference on Environmental Pollution Control and the Councils on Environmental Pollution Control, as well as the Prefectural Councils on Environmental Pollution Control, have been established to strengthen the combating of pollution control.

AGENCIES RESPONSIBLE.

According to the law, four agencies have been provided to take responsibility for environmental control, namely :

(1) Central government.

Dealing with environmental control, the law provides the central government with the duty and responsibility to:

(a) establish fundamental and comprehensive policies for environmental control and to implement them,

(b) establish environmental quality standards and make efforts to ensure the maintenance of those standards,

(c) take measures for emission control, land use, installation of facilities which cause environmental pollution,to promote projects for the prevention of environmental pollution,

(d) establish systems for surveillance, monitoring, measurement, examination and inspection, and to combat environmental pollution,

(e) carry out surveys and investigate the planning of measures for environmental pollution control,

(f) disseminate knowledge and information concerning environmental pollution,

(g) consider environmental pollution control in the planning or regional development policies,

(h) promote other activities which endeavour to protect the natural environment and to conserve green areas,

(i) present annual reports and documents on the state of environmental pollution and control measures to the Diet.

To deal with the above mentioned duties and responsibilities, an Environment Agency was instituted in 1970.

(2) Local governments.

It is the duty and responsibility of local governments to protect the health of local

people and to conserve the living environment, hence the following shall be carried out:

(a) take measures in line with the policy of the central government,

(b) work out and implement appropriate measures for environmental pollution control which take into account the specific natural and social conditions of the area concerned,

(c) the implementation of wide ranging measures, and the coordination of municipal government measures, both largely the responsibility of the prefectural governments.

In addition, the Basic Law provides in several Articles for local governments to play an important role in protecting environment which closely related the citizen life. Article 5 provides responsibility of local governments, Article 18 provides policies for local governments in order for the local governments to adapt the most appropriate legal measures unless they violate national statues. Article 19 provides the order adapted by fundamental policy provided by Prime Minister which should be carried out by concrete policy planned by concerned governors. Article 20 provides local governments are required to adapt the most appropriate policy for achieving the preventive plan operation. Article 23 requires central government to subsidize local governments to provide necessary measures for preventing environmental degradation and other appropriate policy. Article29 requires local governments to establish local council for conducting research and discuss basic problems concerning pollution countermeasures and local governments are required to provide necessary provisions for organizing and operating the council by their ordinances. Finally, Article 30 provides that city, town, village, can also establish the local council for conducting research and discuss basic problems concerning pollution countermeasure in city, town and village levels as well.

It is believed that such local government and council play quite an important role for promoting local environmental policy.

(3) Enterprises.

The law provides the duties and responsibilities of enterprises for the pollution caused by manufacturing and processing activities to be as follows:

(a) industries must take measures for the prevention of environmental pollution,

(b) industries must endeavour to take precautionary measures to prevent environmental pollution which might otherwise be caused by the use of the products which it manufactures or processes.

(4) Citizens.

The Japanese citizen has a duty, provided by law, to contribute to the prevention of environmental pollution in all appropriate ways.

Under the essence of the law, it is guaranteed by the government that other specific pollution control laws will be immediately enacted when deemed necessary.

(5) New drafted "Basic Law for Environment".

In January 1992, the Environment Agency plans to submit a newly drafted bill "Basic Law for the Environment" (a tentative title, according to the newspaper) to the Diet through the recommendation of National Council for Environmental Preservation and the Central Council for Pollution countermeasure. The basic concept of this bill is broader and clearer on environmental pollution protection as a whole than was the Basic Law for

Environmental Pollution Control. The bill has stricter enforcement provisions in order to preserve and control the environment. To fill-in loopholes in the Basic Law for Environmental Pollution Control, and to introduce new measures for environmental protection, the drafted bill will cover areas of major concern, i.e., Environmental Impact Assessment (EIA), environmental tax, and international cooperation for global environmental problems, in addition the alteration of Japanese lifestyle.

The most important part of the bill, and the part which will lead to the opposition of the Ministry of International Trade and Industry (MITI) as well as the Ministry of Construction (MoC), is the Environmental Impact Assessment (EIA). The prodevelopment ministries (MITI and MoC) fear that EIA will result in legal battles, add costs and delay development. Low economic activity of Japanese this year in comparison with last year provides another stumbling block to the passage of this bill. If this bill passes the Diet, according to the mass media, then it may seriously affect Japan's economy.

Actually the Environmental Agency has tried many times toimplement the EIA. The first EIA bill was presented to the Diet by the Environment Agency in 1976 and failed to be passed. It is generally realized that one of the most effective forms of protection against industrial pollution is the EIA study carried out in the planning stages of the factory or public work. Even the developing countries in Asia have EIA in their environmental law. In Japan there is no law dealing with EIA, not even the Basic Law for Environmental Pollution Control.

Environment Agency has modified the EIA bill several times to be passed by the Diet yet still has not been able to get it passed by Diet. However, several local governments such as Tokyo Metropolis, Kanagawa, Hyogo, and the Hokkaido prefectures, considered EIA to be a priority, and local spending on EIA measures has been increasing dramatically. Even lacking national guidance, each local authority citing the EIA bill and other local ordinances relating to EIA which has been developing its own unique set of EIA procedures without trying to unify or standardize them. This lack of uniformity has caused problems, especially for projects which spanned more than one local authority. An Environment Agency survey of mid 1979 showed that many local authorities were requesting national leadership (Brendan F.D.Barrett and Riki Therivel, 1991).

As for local government requests to the national government, 24 local governments called for the establishment of a uniform local procedure for EIA, followed by 10 local governments which requested information on how to use various techniques, and 10 others which called for information regarding the progress of the study by the national government (Environment Agency, 1979). At present, twenty-seven out of the fifty-seven prefectures and designated cities have established EIA procedures (Brendan F.D. Barrett and Riki Therivel, 1991).

With its responsibilty to preserve, control, and protect against environmental problems, as well as under pressure from local governments asking for national EIA standards, the Environment Agency at last will submit the bill of "Basic Law for the Environment" including EIA this coming January 1993 . It has taken more than 15 years to develop and modify the EIA standards to ensure that EIA is adequate to serve in the protection of the environment. As stated earlier, however, it is doubted that the EIA part of the bill will be

accepted in an original proposal at the Diet.

Regarding environmental tax, the drafted bill will cover carbonmonoxide (NOx) tax due to the present regulation not being sufficient to overcome the NOx problem ; therefore, the NOx tax will be a countermeasure against NOx particularly from fossil fuel sources such as petroleum. New types of public burdens such as tax for water resources, national part fees, are also proposed in the bill.

The impact of the Earth Summit Conference has led to the concept of promoting a legal framework for international cooperation. Therefore the drafted bill proposed addressing the protection of global environmental problems such as global warming, tropical rain forest, degradation ozone depletion etc., to be protected by the international cooperation.

Altering the over-consuming lifestyle of the Japanese is one of the proposals of this bill, which becomes a question of how can Environment Agency propose a concrete and effective policy for altering the lifestyle.

It now remains for the Japanese to await the fate of the bill, determining whether the Diet will accept every proposal that Environment Agency will introduce. It is suspected that the part of EIA may be omitted due to the strong opposition of the pro-development Ministries. The bill will be an interesting environmental and political issue in 1992-1993.

2.1.2 AIR POLLUTION CONTROL LAW, 1968 (Environment Agency, 1972).

ESSENCE OF THE LAW

The principal purpose of the law is to preserve air quality for the protection of public health and the living environment according to Article 2 of the Basic Law, based upon the assumption that the total volume of pollution in specific areas should be strategically controlled in order to reduce such pollution. Formerly air pollution control measures were carried out under the Smoke and Soot Regulation Law. Instead of reviewing this law which would have consumed time and have been complicated, the Air Pollution Control Law was enacted in 1968.

The law stipulates various restriction on the emission of soot and smoke, particulates, and specific substances discharged by the activities of moving and static sources. Paragraph 2 of Article 9 of the Basic Law defines environmental quality standards as goals "... the maintenance of which is desirable for the protection of human health and the conservation of the living environment". Emission standards are established and implemented as a mean of achieving ambient standards, therefore, such standards should be set sufficiently strict to ensure the achievement of the ambient standards. Practically, it has often happened that even though polluters conform with the emission standards, ambient standards sometimes may not be satisfied.

Under the essence of the law, direct and indirect regulatory controls are mixed in implementation. The law provides national ambient and emission standards. Ambient standards are conceived to be general administrative guidelines which apply nationwide, while emission standards are actual limits on discharges from polluting sources. However, special national emission standards can be established by the Director General of Environment Agency for heavily polluted areas.

To be more effective, the Air Pollution Control Law covers the following additional

comprehensive provisions ; (i) expansion of the areas to be designated from the viewpoint of the preventing air pollution ; (ii) rationalization of the method of setting up emission standards ; (iii) establishment of "special emission standards" to be applied to new facilities ; (iv) reinforcement of emergency measures ; (v) limitation of the permissible levels of automobile exhaust gas.

The ambient air quality standards were established in 1973.

AGENCIES RESPONSIBLE.

There are two agencies concerning air pollution control (Environment Agency,1976), viz., central government i.e., the Environment Agency, and local governments. The Central Government establishes ambient standards such as the Primary Regulatory Measure, the standards usually have been prepared by the Central Council on Pollution Control in consultation with its advisory bodies. Local governments issue ordinances providing detailed and varied control over equipment and materials used in the factories.

To embark first on air pollution control, sometimes in some areas, if it is necessary, the local governments may adopt more stringent standards for stationary sources than those set at the central level. The prefectural governor can by ordinance impose various additional requirements over and above those set at the central level in order to reduce the total amount of emission in target areas down to a minimum permissible amount to maintain ambient standards set by the central government.

Article 4 provides that local governments at the prefecture level can provide their own standard for the emission of air when they find that the emission of air standard is insufficient to protect citizen's health and the living environment, by the ordinance based on the central government order. The governors are required to submit a report to the Director-General of Environment Agency, concerned governors, when they provide different standards for air pollutant standards. Article 5 provides that Director-General of Environment Agency can recommend local governments to adapt or to alter standard of air pollution as stated by national statue when necessary. Article 5-2 provides concerned governors should make a plan for setting standards of absolute amount of emission based on the General Office of the Prime Minister Order, in areas with a concentration of factories and working places are when necessary.

Article 5-2 (5) provides that the prefectural governors may propose a plan to the Prime Minister concerning a certain area in which he finds absolute amount of air pollutants is regulated as stated in (1) of the Article.

(6) when the Prime Minister intends to make a plan for enacting an ordinance or inviting ordinance as stated in (2) of this Article, he should ask the opinion of the concerned governors.

Article 6 provides that person discharging air pollutants from his factory should submit a report to concerned governors according to the Order of the General Office of the Prime Minister. The report should include the following items:

(1) name, address and name of the representative if necessary,
(2) name, address of factories or working places,
(3) kind of facilities discharging air pollutants,
(4) construction plan of such facilities,

(5) production method used in such facilities,

(6) disposal method of air pollutants.

Article 9 provides that when the governor concerned accepts the report as stated in Article 6 and recognizes that the emission of air pollutants of the factories or working places does not satisfy the set standards, he can make an order to alter or to abolish such facilities as reported.

Article 14 provides that when a concerned governor recognizes that the person discharging air pollutants from his factory in a manner not satisfying the set standard, and recognizes such continuing discharge to make harm health and environment, the concerned governor can make an order relating to production or disposal methods, and bring a temporary injunction against such facilities.

The Articles stated above empower local governments to take an appropriate role and admit a certain responsibilities in order to prevent and to improve the air pollution problems within their regulated areas.

In regard to penalties, those who violated the provisions are liable to punishment of up to 6 months imprisonment or fine of not more than 200,000 yen, depending on the types of violation.

2.1.3 WATER POLLUTION CONTROL LAW, 1970

ESSENCE OF THE LAW

The principal purpose of the law provided in Article 1 is to protect human health and conserve living environment. Therefore, all national effluent standards are set for facilities discharging effluents into public waters, in order to prevent the deterioration of water quality. With regard to this said purpose, the national uniform standards applicable to all public waters are given. The nine categories of substances harmful to human health are cadmium, cyanides, organic phosphorus, lead, chromium (VI), arsenic, total mercury, alkyl mercury and polychlorinated byphenyl (PCBs). To control the accumulation of mercury and PCBs in fish or shellfish, limits on these substances are also set. For organic substances and other items affecting the living environment limits are set for BOD, COD, DO, the number of coliform groups, SS in rivers and lakes, total nitrogen, and total phosphorus.

AGENCIES RESPONSIBLE

Similar to the Air Pollution Control Law, the Water Pollution Control Law provides the minimum standards, applicable to all parts of the country as determined by ordinance from the Prime Minister's Office with regard to the discharge of waste water. In case of waters where it is judged that the uniform national standards are insufficient to attain the environmental

quality standards, prefectural governments are empowered to set standards that may be more stringent than national ones.

Article 3 provides th at

(1) effluent water standards should be provided by Order of the Prime Minister's Office, and

(2) .....

(3) prefectural governor can set stricter effluent water standards when the effluent water standard provided in (1) will not protect the health of human beings and to preserve

the nvironment

(4) .....

(5) when the prefectural governor intends to provide standards for water according to (3) of this Article, the concerned governor should prior to advise the Director-General of the Environment Agency.

Article 4. The Director-General of the Environment Agency may recommend the adopting of certain effluent water level standards to the concerned prefectural, governor, or revision of the standard according to (3) of this Article in order to protect water pollution in the public water area.

Article 4-2 provides the basic principle of decreasing the absolute amount of water pollutants. The Prime Minister may set the policy of decreased absolute amount of water pollutants where the gross amount of polluted water will be from certain public water areas where people involved, the factory, and other activities, and the force of Article 3 of the Water Pollution Control Law and Article 9 of the Basic Law for Environmental Pollution Control are insufficient to protect the human health and the environment.

Article 4-2 (4) In the above case, the Prime Minister should listen to the opinion of concerned governors and ask the decision of the Central Council for Pollution Countermeasures.

(5) when the Prime Minister makes policy for decreasing the absolute amount of water pollutants, he should consult concerned prefectural governors.

Article 14-3 (1) provides that concerned cities, towns, and villages have a responsibility to construct the necessary facilities to improve discharged water originally coming from a non-polluted source, and other necessary facilities, and to provide leadership in improving the discharged water originating from non-polluted source.

(2) the prefectural governor, in addition, can have responsibility to make general policy concerning discharged water originating from non-polluted source, and enforce this policy, and has responsibility to make a general adjustments concerning such measures as adapted by city, town, or village, as provided in (1) of this Article.

Moreover, Article 18 provides that prefectural governors are authorized to order (i) a temporary suspension of waste water discharge in case the discharge fails to meet the standards and (ii) reduction of the amount of waste water in an emergency such as an intensification of water pollution in certain areas.

Regarding penalties, those who violating the provisions are liable to prompt punishment of up to one year imprisonment or a fine of not more than 200,000 yen, depending on the types of violation.

2.1.4 WASTE MANAGEMENT LAW, 1970

ESSENCE OF THE LAW

The principal purpose of the law is to preserve living environment and improve public health through appropriate management of waste and the maintenance of the cleanliness of the living environment. There are two sources of waste prescribed in the law, one domestic waste and the other, industrial wastes (Environment Agency, 1989). Industrial wastes comprise, among those resulting from enterprise activities, cinders, sludge, waste oil, waste acid and alkali, waste plastics and other substances defined by the Cabinet Order.

In the case of industrial waste, the law states responsibilities of the factories to manage and appropriately dispose, recycle or reuse waste. The law clearly states that entrepreneurs involved are responsible for such disposal and must strive for recovery of the disposal. It is also the duty of entrepreneurs to be careful that their products should be in an easily disposal form, as well as to see to the reduction of the waste by recycling and intermediate treatment (Environment Agency).

AGENCIES RESPONSIBLE

It is provided by law that (i) enterprises shall be required to manage industrial waste by themselves. However, the management shall be in accordance with standards stipulated by Cabinet Order ; (ii) the municipalities, individually or cooperatively, shall manage industrial wastes together with domestic wastes which municipalities admit as being necessary products of the municipalities' work ; (iii) the prefectural governments may deal with industrial wastes the necessity of extensive management. Administrative responsibility concerning waste disposal rests primarily with prefectural governors in the case of industrial wastes.

Regarding penalties, a person who violates the law shall be punished to imprisonment of not more than one year or imposed a fine of not more than 100,000 yen, depending on the types of violation.

In conclusion, it is well realized that Japanese industrial sector has seriously considered the causes of pollution as well as the Japanese government also having put every effort into developing anti-pollution technology. As a result, anti-pollution measures have been introduced. Legal measures are one of the said measures which have contributed significantly toward achieving a pollution-free environment.

The effectiveness of law enforcement lies not only the essence of the law but also on the implementation by the agencies concerned. The Constitution of Japan Article 94 gives local public entities the right "to enact their own regulations within the law". The only requirement for local ordinance is that it is not contrary to law. The Basic Law for Environmental Pollution Control provides for decentralization of power to local governments to establish specific environmental standards served for the specific areas. Those standards however, must not be less strict than the national standards.

In reference to the essence of the law, it should be noticed that owing to the experiences of health damage caused by industrial pollution, the environmental laws, the Air Pollution Control Law and the Water Pollution Control Law, have provided compensation for damage, representing the responsibility of the government toward the Japanese people.

2.2 LAWS PROTECTING INDUSTRIAL POLLUTION OF THAILAND

Without environmental law, Thailand employs legal interpretation to protect and conserve environment. This creates enforcement inefficiency as each law has its own specific objectives and none has environmental purpose excepts the Improvement and Conservation of the National Environmental Quality Act B.E.2518 (A.D.1975). However, there are many loopholes and the actual objective of the Act is the setting up of the Office of the National Environmental Board as an advisor of the Council of Ministers regarding

protection and conservation of environment without supervisory power.

However, after the 1991 coup d'etat, many legislations obstructing the country's development were amended. Those under this study are the Factory Act B.E.2512 (A.D. 1969) as repealed by the Factory Act B.E.2535 (A.D.1992) ; the Improvement and Conservation of the National Environmental Quality Act B.E.2518 (A.D.1975) as repealed by the Enhancement and Conservation of the National Environmental Quality Act B.E.2535 (A.D. 1992) ; the Public Health Act B.E.2484 (A.D.1941) as repealed by the Public Health Act B. E.2535 (A.D.1992). For the City Planning Act B.E.2518 (A.D.1975), an amendment called the City Planning Act (No.3) B.E.2535 (A.D.1992) was enacted. No amendment has been made to the Industrial Estate Authority of Thailand Act B.E.2522 (A.D.1979).

The study of the Laws Protecting Industrial Pollution in the Eastern Seaboard Development Program will focus on the analysis of the newly re-enacted or amended laws. The principal legal measures are:

2.2.1 The Factory Act B.E.2535 (A.D.1992)
2.2.2 The Enhancement and Conservation of the National Environmental Quality Act B. E.2535 (A.D.1992)
2.2.3 The Industrial Estate Authority of Thailand Act B.E.2522 (A.D.1979)
2.2.4 The City Planning Act B.E.2518 (A.D.1975)
2.2.5 The Public Health Act B.E.2535 (A.D.1992)

2.2.1 THE FACTORY ACT B.E.2535 (A.D.1992)

ESSENCE OF THE LAW

The Act abrogated the Factory Act B.E.2512 (A.D.1969), and the Factory Act B.E.2522 (A.D.1979). The Act has more clear objectives pertaining to the prevention and elimination of problems with polluted environment and hazards endangering the health and well -being of the people, including the destruction of natural resources by industrial activities.

For the purpose of overseeing, prevention of nuisance, prevention of damage, and prevention of hazard according to the degree of impact on the public or environment, Article 7 divided factories into three classes as follows:

(1) Class 1 for a certain category, type and capacity of factory which factory operator is able to start operation at any time.

(2) Class 2 for a certain category, type and capacity of factory for which factory operator is required to notify the permission grantor.

(3) Class 3 for a certain category, type and capacity of factory for which factory operator is required to obtain license prior to operation.

Setting up of factories.

Prior to the construction of factory buildings or installation of machinery, factories class three are required to file an application for a "Factory Setting Up License" as provided in Article 12 of the Factory Act. If the construction is to take place within an industrial estate area, compliance with Article 42 of the Industrial Estate Authority of Thailand Act B.E.2522 (A.D.1979) is required. This is to enable the government to peruse the project of the applicant prior to its start-up, as there are certain restrictions on certain industrial activities ensuring environmental conservation.

Applying for Factory Operating Permission.

The factory operator is required to inform to the officials for a Factory Operation Operating under Article 13 of the Factory Act, in order that the official of concerned agencies will be able to examine the proposed machinery and equipment in reference to conservation of the environment. For factories within an industrial estate, the same principle as provided in Article 43 of the Industrial Estate Authority of Thailand Act must be complied with.

Renewal of License.

Under Article 14 of the Factory Act, the Factory Operating License has a validity period of 5 years, therefore the factory operator is required to file an application for the renewal of the license prior to its expiration in accordance with the forms and methods prescribed in Ministerial Regulation No.5 B.E.2514 (A.D.1971) and Ministerial Regulation No.8 B.E.2529 (A.D.1986). Both Ministerial Regulations were issued by virtue of the provision of the Factory Act, to enable officials to carry out inspection of the conditions of factories and of machinery, in accordance with Factory Act. For factories class three which are large scale factories, the Ministry of Industry has prescribed conditions requiring the factory operator to prepare and attach to the application reports on preventive and corrective measures and their impact on the quality of the environment, under the Announcement of the Ministry of Industry No.15 B.E.2522 (A.D.1979).

Factory Expansion.

Any addition to or modification of the factory or machinery which is deemed an expansion of factory, requires official permission under Article 18 of the Factory Act.

Other General Controls on Factory Operation.

(a) Inspection and Follow-up. Inspection and following up officials will monitor the operation of factories as well as provide suggestions regarding anti-pollution operation periodically. Especially in the Dry Season, the Department of Industrial Works will dispatch its officials to watch over various river basins around the clock, concentrating on the spots where clusters of factories may create water pollution by discharging their waste water into natural water resources. In order to set criteria for inspection of the quality of waste water draining into natural water resources, the Ministry of Industry has issued the Announcement of the Ministry of Industry No.12 B.E.2525 (A.D.1982), prescribing allowable limits on contaminants contained in discharged waste water. The Ministry is at present discussing and coordinating with the Department of Pollution Control, Ministry of Science, Technology and Environment to determine the appropriate standards for quality of air emitted from the source. Any activities that do not conflict to this new Act can be further continue in implementation.

(b) Inspection and Action according to Complaints. In the course of factory operation, if the factory operator neglects or fails to follow the regulation provided by the Act or to maintain the factory's operation that caused nuisance to the public or to the property of other factories nearby, the Department of Industrial Works is empowered to send its officials to investigate and to revoke such operation as stated in Article 37. In such case if expenses used in correcting the pollution problems or for the impact of the operation come from loans from the Environmental Fund of the Enhancement and Conservation of

the National Environmental Quality Act B.E.2535 (A.D.1992), that factory is liable to take responsibility for such expense as stated in Article 42.

(c) Requirements for Supervisor and Operator. Factories of a type described in the Ministry oe Industry Announcements No.13B.E.2525 (A.D.1982) and No. 22 B.E.2528 (A.D. 1985) are required to provide a supervisor and an operator for the waste material treatment machinery registered with the Department of Industrial Works. The personnel shall be responsible for the effectiveness of the factories pollution prevention and control system and for the preparation of reports certifying the analysis of the quantity of pollutants. The reports shall be submitted to the Department of Industrial Works every 3 months.

(d) To solve the problem of insufficient officials who take in charge of the factory investigation, Article 9 of the Factory Act provides for private sectors to act on behalf of the government officials in order to operate and prepare the report of the factory operation. Such private sectors must register according to the Ministerial Regulation, announced in the Government Gazette.

It is clear that industrial factories are actually operated under strict control systems. Certain types of factories are not only subject to the provisions of the Factory Act, they are also subject to those formulated by other relevant enactments such as the Enhancement and Conservation of the National Environmental Quality Act B.E.2535 (A.D.1992), an act based on the study of impact on the environment (EIA), or under certain circumstances factories may be subject to the provisions regarding the prevention of damage to the environment under the Investment Promotion Act B.E.2520 (A.D.1977).

The control over the factory operator does not end there. Various strict measures have been formulated by agencies concerned to carry out follow-up, inspection and assessment of operation. In the case it is discovered by the officials that a factory violates or fails to comply with the requirements or conditions prescribed by the authority in order to prevent public damage to the quality of environment or to prevent nuisance and health hazards suffered either by the workers in that factory or the dwellers in the vicinity of that factory, the officials may impose on the operator of that factory measures as provided in Article 38 of the Factory Act. The authority may reject the renewal of the license or, in more severe cases, suspend the factory operation or suspend the license, or revoke the license under Article 40. For factories with investment promotional privileges, certain privileges may be revoked under the Investment Promotion Act which will certainly affect the investment and the operation of that factory. In addition, the violating factory operator may face a sentence of imprisonment as provided in relevant laws such as in the Factory Act.

In other words, the factory Act is sufficient to control industrial pollution. However, Although the Departmentt of Industrial Works is empowerwd to impose on the factory operator the above mentioned measures or the administrative order, i.e., the order suspending the factory operation, the order suspending the license, and the order for the revocation of the license, there is no provision prohibiting the re-filing of an applicationfor the factory operation within reasonable time. In the event factory operation is still carried on despite the harsh measures being imposed upon by the Department of Industrial , previously, Works, as previously, there is no provision empowering the Department to force the

closure of such a factory, but the amended Factory Act, Article 39 paragraph 3 provides that the Permanennt Secretary of Industry or his Substitute is empowered to close the factory. thus a great number of factory operators tend to ignore such measures. In conclusion, it can be pointed out that the factory control law at various stages is adequately cffective only if the anthority, in this context the officials of the Department of Industrial Works, Strictly carry out their duties.

AGENCIES RESPONSIBLE

The Department of Industrial Works, Ministry of Industry, is the agency enforcing the Factory Act. Having its central office situated in Bangkok, the Department of Industrial Works delegates its power to officials of the Provincial Industry Office nationwide.

In the past, the enforcement by officials of the Department of Industrial Works has been lenient even in cases of serious violation. If the officials consider that the activity has not created severe damage to the public, only a letter of warning would be issued allowing the factory operator to comply with the law within reasonable time. For example, a metal product factory, categorized under the Ministerial Regulation No.1 B.E. 2512 (A.D.1969), made an expansion without an expansion license or an operating license for the expansion part as required by Article 18. Such violation can be considered by the Permanent Secretary of Industry or his substitute as valid grounds to issue orders or take any action as provided in Article 37, if so wished. However, in practice, the concerned agency treated the factory operator leniently, reasoning that some factory operators may not have correct understanding as to compliance with the Factory Act, thus they should be given another opportunity to comply with the law. Besides, the Department of Industrial Works may sometimes act leniently to avoid affecting the investment atmosphere.

In other words, although the main objectives of the Factory Act after its amendment in 1974 concentrated only upon the environment and public safety, the enforcement of law in this direction gives higher priority to economic development than the environment policy and thus there is a high risk for the environment to become polluted as environmental contamination by certain industrial pollutants gives rise to extremely difficult decontamination problems. Financially, decontamination of such pollutants is unattractive.

However, by utilizing the legal measures described above there are ways for the Department of Industrial Works to put a stop to the operation of the factory operator such as using its power over the factory operator as provided in Article 39 paragraph 3 that the Permanent Secretary of Industry or his substitute is empowered directly to do so. In the previous Factory Act the Department of Industrial Works might employ judicial procedures to support its enforcement for better efficiency by emphasizing coordination with the police or with the Court of Justice.

Since provisions regarding the environment are scattered throughout various Acts, and the enforcement by the Department of Industrial Works is the agency directly dealing with pollution problems, it is therefore difficult to control and prevent pollution of the environment as well as to take remedial action. For example, when it becomes known to the Department of Industrial Works that a pollution problem has arisen, whether through its own inspection or by complaints from the public seeking its official action, the Department power extended only to pollution problems created by industrial factories within its

jurisdiction. To illustrate, the Department of Industrial Works may discover that water pollution or air pollution is being created by other sources such as water pollution by communities or fishery activities or coastal farming, or air pollution from automobiles. It does not have any authority to take action against such problems as there are other relevant laws and agencies concerned dealing with such problems. This division of power is so marked that if the factory causing pollution is in the jurisdiction of the Industrial Estate Authority of Thailand, the Department of Industrial Works is not legally authorized to take any direct action against it except through other administrative measures, for example, coordination between concerned agencies. Although a factory under the jurisdiction of the Industrial Estate Authority of Thailand in governed by the Industrial Estate Authority of Thailand Act, a special law, every stage of factory's operation is under the Factory Act.

2.2.2 ENHANCEMENT AND CONSERVATION OF THE NATIONAL ENVIRONMENTAL QUALITY ACT B.E.2535 (A.D.1992)

ESSENCE OF THE LAW

The Act can be called a comprehensive environmental law as it attempted to cover environmental protection in every aspect and is seemed to be made a model of environmental law. What is important is that the Environmental Board will have more of a role than had been provided by the previous enactment. The new law provides that the Environmental Board shall formulate policy and a master plan to promote and conserve the quality of the environment of the country, and at the same time it is required to consider for approval the environmental management plans of agencies from central administration and regional administration including those from government enterprises and private sectors. In addition, it is required to carry out management and administration of financial and monetary matters, taxation, investment promotion and operating funds for the carrying out of policy and plan for primary environmental management including close following up, inspection and assessment. It is also required to expedite supplement measures in the form of secondary legislation for the effective and true implementation of the policy and master plans of environmental management (Article 13).

Under the Act, important industrial pollution legislation which will help improve and conserve quality of the environment is:

(1) Minister of the Ministry of Science , Technology and Environment with the consent of NEB empowers to announce in the Government Gazette, the types and size of project or activity of government sectors or state enterprise sectors or private sectors, to prepare the Environmental Impact Assessment (EIA) (Article 46).

(2) Requirements for the preparation and submission of reports assessing the impact on the environment in accordance with Article 49, to prevent adverse effects on the quality of the environment or hazards to the life or health of the public. It is provided by law that the NEB has to complete the perusal of the report with 45 days. Otherwise, it will be deemed that the NEB has approved it. In the event the NEB has disapproved it and the new report is submitted, the NEB is required to complete the second perusal within 30 days from the date of submission. Otherwise, it will be deemed that the NEB has approved it. The time period prescribed by this Act for the officials to review the report is considered

as being fair to all concerned. In most cases, the time period prescribed by the law is made as a condition for an individual type of factory to complete what is required to be done within such time limit.

One disadvantage of Article 49-50 is that it does not provide further steps to be taken by the officials scrutinizing a report after the same report has been disapproved twice. In case of clear dispute between the state and the entrepreneur, and a prescribed resolution procedure is necessary to render a decision to settle the conflict.

(3) The prescription of the ambient standard value is, in principle, useful to the environment as it indicates whether the condition of the environment is becoming critical. It will also be a reference to determine whether or not the emission of industrial factories are within prescribed control standards. One point worth considering is that such standards are only technical guidelines, other authorities and agencies not being obliged to follow them as they are authorized to set their own control standards. The exception occurs when the authority of the NEB as provided in Article 13 (10) allows the NEB to present its opinion to the Prime Minister in the hope of his considering issuing instructions to other agencies. It is suggested that the Act should be amended to include clear procedure prescribing the control standards of quality of the environment as well as the degree of the enforceability of such standards and to clearly determine whether they should be set for other government agencies.

Besides, the control standards of environmental quality in Thailand at present do not specify the validity period for which each type of standard value shall be in force. This is necessary because the quality of environment is always changing. However, (the same principle or) each standard value is in effect since the first day of its stipulation and will be so until amended ; such revision may take 3 to 5 years. The question arises as to whether and to what extent will the control, prevention and decontamination of specific environmental pollutions be achieved according to the target of the environmental management policy.

(4) Regarding public participation, Article 6 provides rights and duties to individual person. The major ones are:

(a) To be informed and obtain information and data from the government service in matters concerning the enhancement and conservation of environmental quality, except the information or data that are officially classified as secret intelligence pertaining to national security, or secrets pertaining to the right to privacy, property rights, or the rights in trade or business of any person which are duly protected by law (Article 6(1)).

(b) To petition or lodge complaint against the offender in case of being a witness to any act committed in violation or infringement of the laws relating to pollution control or conservation of natural resources (Article 6(3)).

(c) To strictly observe the provisions of this Act or other laws concerning the enhancement and conservation of environmental quality (Article 6(5)).

AGENCY RESPONSIBLE

Article 13 provides the authority and duty of the National Environmental Board for the improvement and conservation of the national environment. Its responsibilities include the submission of the followings for the consent of the Cabinet ; the plan and policy,

the financial measures, the law amendment, and the annual report of the national environmental condition. The NEB has determining power to give consent to the operation plan for environmental conservation, the operation plan for pollution protection, and the setting up of environmental quality standards. It also sets measures for the coordination and relations of public sectors, state enterprise sectors, and private sectors, for environmental activities. Its duty also covers the management and administration of the Environmental Fund.

Previously, the Office of the National Environmental Board (ONEB) took responsibility for the improvement and conservation of the national environment. But according to the amended law of 1992, the ONEB was extended to be three Departments namely ; (i) Office of the Environmental Policy and Planning ; (ii) Department of Pollution Control ; (iii) Department of Environmental Quality Improvement. These three Departments are affiliated with the Ministry of Science, Technology and Environment, as stipulated in the Overhaul of the Ministry, the Bureau, and the Department Act (No.6) B.E.2535 (A.D.1992), Part 10, Article 24.

By virtue of Article 32 of the Enhancement and Conservation of the National Environmental Quality Act, the NEB has endeavoured to prescribe standards for the environmental quality of water, air, noise, vibration, and others. It has prescribed standards for the quality of surface fresh water sources, ground water, the water quality standards of the seacoast and the mouth of the rivers, as well as the ambient air quality standard.

The NEB is the agency responsible for the prescription regulating such standard values with which the factory operators shall comply. Up until now, there has been only one standard prescribed for enforcement, i.e., the control standard of effluent contained in the Announcement of the Ministry of Industry, No.12 B.E.2525 (A.D.1982), although water and air pollution problems from industries are now entering critical stages with a deleterious impact on human beings and ecological systems.

It should be mentioned here that this Act significantly increases the power to NEB in scrutinizing the environmental impact assessment of the factory. The issuing of a factory setting up license or the renewal of factory operation must be under the conditions stipulated by NEB (Article 50 paragraph 2).

2.2.3 INDUSTRIAL ESTATE AUTHORITY OF THAILAND ACT B.E.2522 (A.D.1979)

ESSENCE OF THE LAW

The Industrial Estate Authority of Thailand Act plays an important role in controlling industrial factories situated inside industrial estates. The Act empowers the Industrial Estate Authority of Thailand (IEAT) to carry out surveys, planning, and construction design, subject to the Factory Act and the Building and Construction Control Act. The IEAT has the duty to take care of and to maintain facilities as well as rendering services to industrialists. It is also empowered to prescribe categories and sizes of industries permitted to be established in the industrial estate. It will also control and direct the factories to comply with the laws and regulations especially those concerning public health, and the arrangement of the central water treatment system as provided in Article 6.

The Act provides for organization and arrangement of the location of industrial factories in specific areas to be consistent with city planning laws and for liaison with the

operation of the Department of Industrial Works in giving approval to setting-up applications and operating applications as well as controlling pollution from factories.

A problem is that there is as yet no categorization of factories based upon similar nature of waste or pollution which could be more conveniently and easily treated if the factories were located close to one another. The only treatment available is central water treatment which looks to be insufficient for the variety of factories expected in the future.

AGENCY RESPONSIBLE

The IEAT is another agency playing major roles in industry and the environment. Supported by the Industrial Estate Authority of Thailand Act, its main objective is to act as a operating unit responding to domestic industrial development policy and to support the expansion and the distribution of industrial development to other regions. It solves problems regarding the location of the factories in large towns where their location is not consistent with city planning by setting up industrial areas in the form of "Industrial Estate". This is for the convenience in controlling those factories, for their activities create hazards on public health and environmental system. The Act therefore stipulates the duty and responsibility regarding the environment to the effect that the IEAT shall control and ensure that the operators and the land-users of the industrial estate shall comply with the laws and regulation including activities concerning public health and environmental impact.

There are problems and obstacles to the IEAT's operation. The government started to pay attention to industrial activities in 1962. Investment promotion law was introduced in the form of "Industrial Estates" to find locations for factories. No clear policy was formulated as to whether the project was to have been run by private sector or the government. Together with the lack of city planning, the industrial development at that time was made on a case by case basis. In 1963, the Board of Investment Promotion for Industrial Activities initiated a plan to expand industrial promotion wherein they proposed expropriation of private land for the construction of industrial zones and providing infrastructure, leasing out sites to private industrialists. At that time, the Juridical Council (General Meeting) was of the opinion that such project was against the principle of law on expropriation claiming "ejusdem generis" to interpret the term "other public interests" provided in Article 5 of the Immovable Property Expropriation Act B.E.2497 (A.D.1953) then in force, to mean that by expropriation the title on the land shall belong to the public and the public shall be the party directly exploiting that land. The endeavour proposed by the Board of Investment Promotion was not deemed "other public interests" legally (closed file 62/2506). However, industrial estates have long been in existence in foreign countries and it not only made the inspection by officials convenient but also the pooling of waste treatment saved the factories a considerable amount of expenses. The interpretation of the Juridical Council soon saw factories scattered all over the place, often in residential areas, as there was no control over their locations. This caused environmental problems. Time passed and legal concepts changed with it. The industrial estate concept that was latent in the investment promotion for industrial activities thus broke off to become "Industrial Estate Authority" in 1972 by the National Executive Council Decree No.339. The Industrial Estate Authority was responsible for the setting up and management of

industrial estates. Until 1979, the Industrial Estate Authority of Thailand Act B.E.2522 (A. D.1979) was in force to support the IEAT's authority in controlling factories causing environmental problems. However, since the IEAT is empowered only to control the "new born" factories, it has no authority to control existing factories or those outside its jurisdiction. This complicates the IEAT's operations regarding the conservation of environment on a broader scale.

With regard to enforcement, in addition, as IEAT has no factories categorized according to the nature of their waste materials in the first place, factories with various types of waste materials from different production procedures are now located in the same area. This may cause great difficulties to the official in determining the culprit in case of water pollution as every factory discharges its waste water to the same drainage facilities.

2.2.4 CITY PLANNING ACT B.E.2518 (A.D.1975)

ESSENCE OF THE LAW

The law directly related to city expansion is the City Planning Act B.E.2518 (A.D.1975), another law related to this problem being the Building Control Act B.E.2522 (A.D.1979).

The City Planning Act has clearly mentioned its objectives of city planning in defining the term "City Planning" in Article 4 of the Act to mean the preparation, making and implementation of a general plan and specific plans in the area of a city and related areas or in the rural area in order to build or develop a new town, or a part thereof, or to replace a damaged town, or a part thereof, for the purpose of improving sanitation, amenity and convenience, orderliness, beauty, use of property, public safety, social security, of improving economic and social affairs, and environment ; of preserving or restoring of places and objects of interest in the field of art, architecture, history or archaeology or of preserving natural resources, science landscapes or landscapes containing natural value.

It can be seen from the above definition that the Act authorizes the city planning agency rather extensively as it gives the authorized body power to prescribe almost any terms and conditions for the control of land use in accordance with city planning principles. However, such terms and conditions shall come into force after they have been issued as a Ministerial Regulation with the approval of the Board of City Planning and after their publication in the Thai Government Gazette.

Thus the preparation and implementation of a general plan will help create appropriate land use which will result in systematic expansion of a town. Activities like land use, construction of buildings and public utilities have been well planned with one supporting the other within the framework of town development policy. A good example is the implementation of "Muang Pattaya" general plan as announced in the Ministerial Regulation No.6 B.E.2516 (A.D.1973), issued under the City Planning Act. This plan has 7 major points such as the prescription of land use and activities within the area of the general plan, including major communication routes and all public utilities, special handling of the environment problem, impact from the community waste, and the expansion of the town. If the agencies concerned sought close coordination with the NEB responsible for the promotion and formulation of the environment quality policy as provided in Article 5 of the Improvement and Conservation of the National Environmental Quality Act B.E.2518 (A.D. 1975), the control of the environment quality would be much easier. This is because after

an area has been prescribed by a Ministerial Regulation to be under a general plan, an individual is not allowed to use his land for any purpose other that what has been prescribed by the general plan or to do anything conflicting with the stipulations thereof. In the event the City Planning Board is of the opinion that any person substantially violates the stipulations of the general plan regarding the public sanitation, public safety, or social welfare, the City Planning Board is authorized to take any action against such violator as provided by law. The measures truly facilitates the management of the town environment.

After a general plan has been implemented, enforcement of a specific plan for that area should be followed. Central and local agencies can prepare a specific plan by prescribing the boundary of such specific plan, the survey area, the preparation of plans with details, land details, and conditions in addition to a general plan pursuant to Article 28.

As the preparation and making of a specific plan for a specific area is necessary detailed, and clearly and has more rigid requirements than the preparation and making of a general plan, it is therefore an important measure to press for the efficient implementation of the land use management policy of a general plan. The preparation and making of a specific plan should be in agreement with the general plan. Due to the restrictive nature of the specific plan which may easily affect the individual's right to land use, it is necessary that the enforcement of specific plan must be in the form of an Act approved by the Parliament under Article 41. This means that no person within an area in which a specific plan has been enforced shall use his land or alter the immovable property therein thus differing from what is prescribed in the Act enforcing the specific plan or from the Ministerial Regulation issued by virtue of Article 42 or 45.

In practice, especially for the specific plan which is considered a town planning measure highly effective in responding to government policy and in achieving targets of general plan, no real effort has been exerted on the enforcement of a specific plan, as such enforcement requires an enactment with parliamentary approval. Such a requirement has been very often claimed by officials concerned to be very complicated in implementation. In addition, the restrictive effect on the right of land use in the enactment impinges on the attitude of the public who enjoy the free use of their own land claiming that they too are helping the country to develop. This is the reason why the specific plan is undesirable and thus little or no enforcement has resulted. The consequence is the government has never been successful in the optimum zoning which considerably affects the planning of the environment management in each area.

AGENCY RESPONSIBLE

The City Planning Board (Department of City Planning, Ministry of Interior), is responsible for the enforcement of the City Planning Act. In some cases the essence of this Act does not cover the control of city planning zones, whereupon the Building Control Act B.E.2522 (A.D.1979) controlling the conservation of various types of buildings by prescribing the zoning of building control and the mandatory free space use corresponding to town planning objectives, is enforced, taking into account safety, fire prevention, public health, environment quality, architecture and traffic congestion.

The Act empowers "the local official" to enforce the city planning by providing various forms of penalty in Article 40 through 49.

One point worth considering is Article 9 by which the local official is empowered by the approval of the Building Control Board to issue a bylaw for the locality prescribing details as provided in the law when necessary as long as such bylaw is not in conflict with the Ministerial Regulation issued under Article 8. This means that the local agency can only issue any bylaw to control the nature and scope of construction of building after its central administration has already issued a Ministerial Regulation Article 8 dealing with the subject. This is the interpretation of the provision made by the Juridical Council in 1983. This bars the local agency, knowledgeable of the area concerned, from bringing the spirit of the Act into force as its power is almost entirely restricted by its central administration. As a result, no appropriate system has been created to issue any efficient bylaw to effectively control the construction of the building as provided in Article 8 and other Articles. It is not clear whether the central administration has ever issued any Ministerial Regulation under Article 8. One can say that the interpretation made by the Juridical Council is colliding head-on with the power decentralization principle thereby creating gaps in the procedures for bylaw issuance and therefore prevention of the local official from using discretion in considering the construction application even if the building is not suitable for the area and he is entitled to reject it as provided in Article 26. All this is due to the restriction of power as discussed above and thus the officials have never cited environmental problems or inappropriate land use as reasons for not permitting the construction of buildings.

In addition, as a result of the interpretation made by the Juridical Council, the construction in certain areas such as along beaches and sand dunes shall be under the control of Harbour Department in accordance with the Navigation in Thai Water Act B. E.2456 (A.D.1913). This is obviously another obstruction for the construction control under the Building Control Act due to repetition of enforcing agencies under different enactments.

2.2.5 PUBLIC HEALTH ACT B.E.2535 (A.D.1992)

ESSENCE OF THE LAW

The Public Health Act has always been criticized as being out of date because it was enacted 50 years ago (the original Act was the Public Health Act B.E.2484 (A.D.1941)). Penalty was very light, i.e., not exceeding 50 baht (US$ 2) fine. The Act did not provide clear indication regarding environment. As a result of 1991 coup d' etat, the government, backed by the National Peace Keeping Council, has re-enacted the Act and called it the Public Health Act B.E.2535 (A.D.1992) coming into force in April 1992. The new Act is more specific on environment especially in section concerning nuisance caused by industrial activities. For example, Article 25 provides the

"Any occurrence likely to cause nuisance to dwellers in the vicinity or any person against whom the following occurrences happened shall be deemed disturbed by nuisance

(1) .....

(2) .....

(3) Living places of human beings or animals, factories or business establishments

without air ventilation, water drainage,sewage disposal,or control of poisonous substances or if equipped with such things but failing to sufficiently eliminate odour or dust particles of poisonous substances thus causing health deterioration or becoming health hazards (constitute nuisance).

(4) Any act causing odour, light, radiation, noise, heat, poisonous matters, vibration, dust particles, soot, ash or any thing causing health deterioration or becoming a health hazard (constitute nuisance).

(5) Any other act specified by the Minister in the Government Gazette".

In addition, Article 65 imposes heavier penalties in the case of non-compliance with an official's order to extinguish or prevent nuisance, i.e., not exceeding one month imprisonment or not exceeding two thousand baht fine, or both. The Act also provides administrative penalty measures in Article 26 through 28, i.e., issuance of regulations for the extinguishing or prevention of nuisance which includes the act necessary to be carried out by the local authority to prevent the nuisance at the expense of the person who causes it.

AGENCY RESPONSIBLE

Theoretically, the Environment Hygiene Division, (Ministry of Public Health), is the agency responsible for the enforcement of the Public Health Act. However, in reality the Division has not much power to put the Act into force as, conceptually, the control of industrial activities should come under the responsibility of the Department of Industrial Works and the Factory Act. There exists also budget constraints as well as insufficient personnel and nonavailability of equipment.

In summary, the legal measures provided in various Acts mentioned above contain advantages and disadvantages to an extent affecting the enforcement by responsible agencies. Such agencies should cooperate among themselves to attempt to find short -term measures to solve immediate problems which can be done in various ways such as proposing secondary enactments suitable for the ongoing problems and which will also serve as fill-in for loopholes in the present laws awaiting amendments.

2.3 LAWS PROTECTING POLLUTION FROM EASTERN SEABOARD DEVELOPMENT PROGRAM

There are 3 main types of pollution from Eastern Seaboard Industrial development :

2.3.1 Air Pollution

2.3.2 Water Pollution

2.3.3 Hazardous Waste

2.3.1 AIR POLLUTION

STANDARD OF AIR QUALITY

Any area congested with factories will definitely suffer from air pollution. Air pollution control requires economical viability, appropriate techniques, as well as other aspects such as the control of or requirements for the improvement of, raw material quality used by the factories, or the requirement of the use of pollutant free fuel, as well as requiring the factories to improve their production processed by applying more efficient technologies. It is important to expedite the enforcement of prescribed ambient standards and standards emission into the air.

At present, Thailand is enforcing the following ambient standards of the air for industrial activities creating air pollution from stationary sources.

(1) The ambient standards of the air limits are on airborne pollutants to prevent impact against the health and hygiene of humans and of other living creatures, and to prevent damage to property as well as the ecological systems. If the concentration of the pollutants is higher than the standards, there is a tendency towards marked pollution effects. For Thailand, in addition to the ambient standards for air prescribed by the NEB, there are other air ambient standards for the interior of industrial establishments as prescribed by the Department of Labour, (Ministry of Interior), requiring better quality of air than outside the factory. The violator of the standard is subject to a penalty as such pollution can easily affect the workers. It is therefore necessary to prescribe the value of the concentration of the pollutants to be lower than that outside the factory.

The air ambient standards under the Notification of the Office of the National Environment Board No.2 B.E.2524 (A.D.1981) (see Table 1) has been prescribed as a measure for agencies dealing with the monitoring and controlling of air quality to carry out their responsibilities. In the event the general quality of the air is changing negatively, such air quality controlling and monitoring agencies are required to amend the value of emission limits to suit the condition of the air based upon the ambient standards of the air in the atmosphere.

(2) Emission standards are prescribed to control and limit the pollutants from factories to the atmosphere. The standards have two aspects ; Subjective Standards such as the use of Ringlemann Smoke Chart to compare the relative density of smoke, and Objective Standards such as the weight or volume of pollutants per one volume unit of the air, or the weight of the pollutants per production quantity unit. It is normally the responsibility of the Ministry of Industry, empowered by Article 8 (5) of the Factory Act, to lay down the

Table 1 National Ambient Air Quality Standards

Pollutants	1 hr average value mg/m^3	8 hr average value mg/m^3	24 hr average value mg/m^3	1 yr average value mg/m^3	Methods of measurement
Caubon monoxide (CO)	50	20	—	—	non-dispersive Infared Detection
Nitrogen Dioxide (NO_2)	0.32	—	—	—	Gas Phase Chemiluminescene
Sulfur ioxide (SO_2)	—	—	0.30	0.10*	Pararosaniline
Suspended Particulate Matter (SPM)	—	—	0.33	0.10*	Gravimetric
Photochemical Oxidant (O_3)	0.02	—	—	—	Chemikuminescene
Lead (Pb)	—	—	0.01	—	Wet Ashing

Note* = Geometric mean value
Source : Office of the National Environmental Board.

criteria for compliance by factories. However, such standards have not been enforced in Thailand except for the standards of black smoke at the opening of smoke stacks, as per the Announcement of the Ministry of Industry No.4 B.E.2514 (A.D.1971), which is prescribed in Article 77 of Chapter 14 to the effect that "Factories using burners or other machinery emitting soot and smoke to the air are required to emit them through a stack having the necessary and proper height. The blackness of the soot and smoke at the stack opening shall not exceed 40 percent of Ringelmann's blackness standard except for the short duration while starting up the burner or engine, ash clearing, soot blowing, or failure in the soot and smoke eliminating system". In practice, the Department of Industrial Works will prescribe condition or conditions with which the applicant for factory setting-up or the applicant for factory operator is required to comply. The entire matter relies upon the knowledge and ability of the agency or its officials. What if their recommendations are is based upon incomplete or incorrect information, or upon insufficient knowledge and understanding of environmental technique? The conditions so prescribed will never be effective enough to prevent air pollution. The present status of industrial activities which sess rapid technological growth together with a future trend for further expansion will make air pollution control even more difficult. For example, the Eastern Seaboard Development Program, involving a great variety of industry, most of which uses hazardous chemicals as raw materials (such as the petrochemical industry), is associated with air pollution with rather great impact on human and environmental systems. The pollutants may come in the form of dust, soot and smoke, poisonous gases like sulphur dioxide, nitrogen dioxide or metals such as lead. The agency concerned should better realize to what a limited extent the black smoke standard presently in force covers the prevalent problems.

LAWS AND AGENCIES RESPONSIBLE

Laws enforcing the control and prevention of air pollution are of a secondary level of importance, coming in the form of Ministerial Regulations or Announcements, brought into force by virtue of the laws of primary level, such as the Factory Act, the Enhancement and Conservation of the National Environmental Quality Act, and the Public Health Act.

Three agencies responsible for the enforcement and the prescription of air quality are:

(1) The National Environment Board empowered by Article 32 of the Enhancement and Conservation of the National Environmental Quality Act to prescribe for quality standards for the environment.

(2) The Department of Industrial Works empowered by Article 8 (5) of the Factory Act shall prescribe conditions and method for compliance from all types of operators of factories emitting pollution to the air in order to prevent the atmosphere from being contaminated by pollutants creating hazards to humans. Although air emission standards are important, no standard has been prescribed for enforcement. Air emission control is presently still constituted by only the black smoke standard values pursuant to the Ministerial Announcement of the Ministry of Industry No.4 B.E.2514 (A.D.1971), with the Department of Industrial Works being the agency prescribing detailed conditions for compliance therewith.

(3) The IEAT is empowered by the Industrial Estate Authority of Thailand Act to

control and oversee the factories, its jurisdiction being to compliance with all regulations and rules to prevent pollution as mentioned in Article 10 (4) of the Act, in the same manner as the Department of Industrial Works and other agencies.

The authority to penalize the violator of laws or regulations, whether held by the Department of Industrial Works or by the IEAT or by the National Environment Board, is enforceable by imprisonment, or fine, or both. In the event a factory within the jurisdiction of the IEAT creates air pollution, the Department of Industrial Works has no authority to take any action against such factory except to coordinate with the IEAT to solve the problem because air pollution can effect damage over a vast area. Such restrictions obstruct both agencies in the examination and follow up of the effect of air pollution affecting human and the environment, rendering it impossible to control, prevent, and remedy air pollution, and to achieve targets set forth in the National Economic and Social Development Plan.

2.3.2 WATER POLLUTION

CONTROL OF WATER QUALITY

The annual reports for the study of the major rivers prepared by the National Environment Board reveal grievous deterioration in water quality of domestic water sources and waterways. This indicates that the control of water quality by stipulating environmental quality standards is becoming necessary. In general, two aspects are considered :

(a) The stipulation of the ambient standard of the quality of water sources can be effected by restricting the concentration of hazardous pollutants contaminating a water source at any time. The criteria for the prescription of the standard of the quality for waste water discharge is compatibility with the capacity of the receiving water resources in a certain area.

At present, there are two laws governing the environmental quality standard of water resources :

(i) The Announcement of the Ministry of Science, Technology and Environment, re ; Prescription of Standards and Testing Method for Sea Water in Laem Mai Ngang, Ao Karon, and Ko Pu in Phuket province, was made for the purpose of swimming and conservation of coral sources in those areas, as the coral reefs have very high tourism potential. Article 4 of this Announcement authorized the NEB as the agency responsible for the prescription of criteria and testing methods, and selection of testing points for sea water testing in three areas. In order to comply with the Announcement of the Ministry of Science, Technology and Environment, the Secretariat of the NEB made its Announcement re ; Prescription of Standard and Testing Method for Sea Water in Laem Mai Ngang, Ao Karon and Ko Pu in Phuket province, in 1985.

(ii) The Announcement of the Ministry of Science, Technology and Environment, re ; Prescription of Standards and Testing Method for Non-Sea Water Resources at Ground Surface, was made to conserve the quality of water of non-sea water resources at ground surface. Article 32 of this Announcement authorizes the NEB to be the agency responsible for the defining of types of water resources, and the prescription of land use and water in

the ground surface water resource areas.

The stipulations of standards in such Announcement are made for different purposes, taking into account the appropriate use of water resources for activities in the area such as industry, the tourism industry, fisheries and coastal farming. Therefore the prescription of standards for quality of water in water resources is a necessity and should be brought into force for the benefit of all. It should conform with the prescription of the

Table 2 Effluent Waste Water Standard

Ph value	between 5 to 9
Permanganate value	not exceed 60 mg/l
Dissolve Solids	
Dissolve Solids	not exceed 2,000-5,000 mg/l
Salinity	exceed 2,000 mg/l or
Dissolve Solids	not exceed 5,000 mg/l
Sulphine equals to H_2S	not exceed 0.2 mg/l
Cyanide equals to HCN	not exceed 0.2 mg/l
Heavy Metal values	
Zinc	not exceed 5 mg/l
Chromium	not exceed 0.5 mg/l
Arsenic	not exceed 0.25 mg/l
Copper	not exceed 1 mg/l
Mercury	not exceed 0.005 mg/l
Cadmium	not exceed 0.003 mg/l
Barium	not exceed 1 mg/l
Selenium	not exceed 0.02 mg/l
Lead	not exceed 0.2 mg/l
Nickel	not exceed 0.2 mg/l
Manganese	not exceed 5 mg/l
Tar	complete no
Oil and Grease	not exceed 5 mg/l except Petroleum Refinery Factory or ther factories dealing with Oil and Grease
	not exceed 15 mg/l
Formaldehyde	not exceed 1 mg/l
Rhenols and Cresoles	not exceed 1 mg/l
Free chlorine	not exceed 1 mg/l
Insecticide	not radio active
If proportion of Waste Water and Public Water between 1 : 8 to 1 : 150	
Solid Suspended not exceed 30 of 1,000,000, if between 1 : 151 to 1 : 300	
Solid Suspended not exceed 60 of 1,000,000, if between 1 : 301 to 1 : 500	
Solid Suspended not exceed 150 of 1,000,000	
B.O.D.	not exceed 20-60 mg/l
(the B.O.D. value will appropriate to type of factories)	
Temperature	not over 40°C
Colour and Odor	not fix

Source : Ministerial Announcement No.12 A.D. 1982, Ministryof Industry.

effluent standards taking into account the long-term total loading capacity of the water resources receiving the pollution.

(b) The prescription of effluent standards prescribing the concentration of pollutants or waste allowed by law to be discharged into the natural water resources. (see Table 2 and 3)

The Ministry of Industry has made an Announcement of the Effluent Standard for Industrial Activities No.12 B.E.2525 (A.D.1982) to control the discharge of waste water from industrial installations. The Announcement prescribed criteria and methods for all types of the factory operators requiring waste water treatment to bring waste water quality within the prescribed values before discharge into the natural water resources.

LAWS AND AGENCIES RESPONSIBLE

The agencies empowered by the law to enforce water pollution prevention are similar to those provided for air pollution prevention, i.e.,

(1) The National Environment Board, pertaining to Article 32 of the Enhancement and Conservation of the National Environmental Quality Act, is the agency empowered to stipulate the standard values for the quality of the environment not under the jurisdiction

Table 3 The Required Pollution Control Factories

Factories	
With Waste Water of over 125 m3 per hour (except cooling water) or with B.O.D. Lead of Influent) over 200kg. per day	
Heavy Metal in process with waste water over 50 m3 per day with	
Zinc	exceed 250,000 mg per day
Chromium	exceed 25,000 mg per day
Arsenic	exceed 12,000 mg per day
Copper	exceed 50,000 mg per day
Mercury	exceed 250 mg
Cadmium	exceed 1,500 mg per day
Barium	exceed 50,000 mg per day
Selenium	exceed 1,000 mg per day
Lead	exceed 10,000 mg per day
Nickel	exceed 10,000 mg per day
Manganese	exceed 250,000 mg per day
Steel Factories	
Furnace, acid, toxic substances with total capacity over 100 tons per day	
Total Capacity over 5 tons per Batch	
Petrochemical Factories with raw material of over 100 tons per day	
Factories deal with Natural Gas	
Factories deal with NaCl to produce Na_2CO_3, NaOH, HCL, CL_2 and NaOCL with total capacity over 100 tons per day	
Cement Factories	
Metal Smelting with total capacity over 50 tons per day	
Paper and Paper products	
over 50 tons per day	
Crude Oil Refinery	

Source : Ministerial Announcement No.13 A.D. 1982, Ministry of Industry.

of other agencies. For example, the prescription of the ambient standards for water has the NEB as the controlling and enforcing body for the compliance of the standards requiring testing and monitoring of water quality.

(2) The Ministerial Regulation issued by the Ministry of Industry under Article 8 (5) for the Factory Act prescribing criteria and methods for compliance with effluent standards by factory operators, is enforced by the Department of Industrial Works. Factory operators in violation of these regulations and orders shall be penalized with fines not exceeding 200, 000 baht, pursuant to paragraph 2 of Article 45. The penalty imposed on the violator of effluent standards is heavier as it is directly detectable and enforceable on such a violator.

The Factory Act provides for control and for enforcement of its provisions to prevent water pollution in two instances:

(a) The provision of Article 8 (5) of the Factory Act requires the factory operator to provide a water drainage system pursuant to the criteria and methods in the secondary level regulations, i.e., the Ministry of Industrial's Ministerial Announcement No.12 B.E.2525 (A.D.1982) re ; Requirements on Factory Operators, Article 22 thereof, prescribing effluent as specified in the regulation have effectively complied with the regulations, the Ministerial Announcement No.13 B.E.2525 (A.D.1982) was issued requiring such factories to provide operator responsible for the operation of the pollution prevention system. This is one of the strict criteria and methods prescribed in the Factory Act for the control of the operation of waste water treatment from industrial installations prior to discharge natural water resources. The measure opens up another channel of responsibility to prevent water pollution by bringing it to the hands of private sector or industrialists. A violator of the Announcement will be penalized by a fine not exceeding 200,000 baht pursuant to Article 45.

(b) Article 25 of the Public Health Act defines the meaning of the term "nuisance" to include water sources, ditches, drainage, contaminated stream, waterways, excessive number of domestic animals, water discharge, garbage collection, industrial factories with odour, (without good ventilation systems), bringing for human beings or animal without drainage or garbage disposal, pollution of water sources or canals or ditches for human use and other things that cause annoyance to people in the vicinity of any activity causing bad odour, light, harmful rays, noise, heat, toxic substances, vibration, dust, etc., that affect or harm to the health of the people. In other words, the nuisance under the Public Health Act is a place or an action which might deteriorate or endanger public health or public safety. The local official concerned shall have the authority to prevent such nuisance whether by suspension of the activities or by the elimination of the operation, thus bringing to an end the nuisance in the public or private place.

A factory that drains waste water not in conformance with standards into natural water resources, thus contaminating them, also causes deterioration of the health and hygiene of the people using them, and damage the other living creatures in the ecological system. Such a factory not only shall be penalized under the Factory Act but shall also be penalized in accordance with Article 25 of the Public Health Act concerning nuisance. Therefore, in addition to the NEB, two other major agencies responsible for such incidents are the Department of Industrial Works under the Factory Act, and local officials under

the Public Health Act. The enforcement of each law depends on the coordination between the agencies regarding the division of responsibility as the laws have different penalties. The penalty for the violation of the official instructions given under Article 45 of the Factory Act is 1 year imprisonment or a fine not exceeding 200,000 baht, or both, while the violation of the official instructions given by the local official under the Public Health Act brings imprisonment of not exceeding 1 month or a fine not exceeding 2,000 baht, or both.

Another agency dealing with wastewater treatment is the Industrial Estate Authority of Thailand (IEAT) under the authorization of the Industrial Estate Authority of Thailand Act. Article 10 (4) thereof authorizes the IEAT to control and oversee the operation of industrial installations situated in its jurisdiction to ensure compliance with laws and regulations in the same manner as the "Department of Industrial Works". Whenever the Department of Industrial Works finds any pollution problem caused by the wastewater discharging from a factory within the area of an IEAT, or a pollution complaint if made to the Department of Industrial Works or to the NEB against such a factory, both the Department of Industrial Works and NEB can only notify the IEAT of the incident for further enforcement. They do not have any authority to take any action against the factory within the jurisdiction of the IEAT because it is under an agency governor under special laws.

2.3.3 HAZARDOUS WASTE

SITUATION OF HAZARDOUS WASTE PROBLEM

Hazardous waste from industries is a major problem for Thailand especially with the implementation of the Eastern Seaboard Industrial Development Plan. Disposal process of hazardous waste is complicated and there are inadequate personnel who have technical experience to deal with such waste for safety. As the disposal of hazardous waste is expensive and gives no financial gain, factories pay no attention to proper disposal and try to avoid compliance with the conditions of the Department of Industrial Works, especially regarding acquisition of land for sanitary landfill. The land for that type of disposal of hazardous waste must not cause impact on the quality of the water table and shall not be in a flood area where the waste may be washed off and spread into the environment.

LAWS AND AGENCY RESPONSIBLE

After coordinating with the NEB in 1982, the storage and disposal of hazardous wastes was put under the control of the Department of Industrial Works and measures thereof with which the factory operators are required to comply were prescribed as follows:

(1) Hazardous waste is required to be treated by methods approved by the Department of Industrial Works.

(2) Measures are required to prevent water run-off through areas designated for the storage or disposal of hazardous waste to public water sources or to areas under other uses.

(3) The place for the storage or disposal of hazardous waste shall not retain water or be a flood area. Appropriate measures are required to prevent water sewage flow or diffusion of gas or hazardous waste or dissemination of dust containing hazardous matter.

(4) The place for the storage or disposal of hazardous waste shall be reasonably far from the local community. Measures are required to prevent unauthorized persons from entering an area for storage or disposal of hazardous waste. A permanent sign indicating

that the place is for the storage or disposal of hazardous is also required to be shown.

(5) The factory operator is required to notify the local agency and the agency concerned of the use of any place to store or dispose of hazardous waste in order to prevent or prohibit the use of that place being used for any purpose which may be harmful to the health and hygiene of the public, such as excavation for water resources or for agricultural purposes, except with approval of the local agency and the agency concerned.

(6) The storage or disposal of hazardous waste with other types of refuse or waste is strictly forbidden.

(7) Hazardous waste shall not be used for landfill or roadfill or used for mixture with any kind of construction material.

(8) In the event the factory space cannot facilitate the storage or disposal of hazardous waste, the factory is required to transfer the hazardous waste for storage or disposal to some other place in conformity with the requirements of the Department of Industrial Works, by complying with the following:

(a) store the hazardous waste in a container or a vehicle which can prevent leakage or diffusion of gas or hazardous waste or dust containing hazardous waste.

(b) Hazardous waste shall not be mixed with other material during transfer.

(c) The container and the vehicle used for the transfer of hazardous waste must be clearly marked to that effect, together with instructions in case of accident.

(d) In case of accident causing leakage of hazardous waste, the factory operator is required to take remedial action and notify the Department of Industrial Works immediately.

(9) The place and procedure for the storage and disposal of hazardous waste including the burning method shall require the approval of the Department of Industrial Works.

(10) The standard of quality of the environment of the vicinity of the place for the storage and disposal of hazardous waste shall be tested, and reports thereof must be submitted to the Department of Industrial Works.

If it is proven later that the place for the storage and disposal of hazardous waste has caused impact on the environment or health or hygiene of the public, the place for the storage and disposal of hazardous waste shall be subject to modification or alteration to ensure that such problem have been eliminated even in the event that the Department of Industrial Works had originally given approval for such a place to be used for the storage and disposal of hazardous waste.

In 1987, the Ministry of Industry issued a Ministerial Announcement No.25 B.E.2530 (A. D.1987) re ; The Duties of the Factory Operator, pursuant to Article 39 (13) of the Factory Act, aiming to protect the workers handling poisonous substances. The Announcement also covered destruction or treatment of containers of poisonous substances, inflammable chemical materials or other materials which may be harmful and require appropriate methods of destruction. Such substances and materials shall not be destroyed in an area likely to harm people, animals, plants or the property of others as stipulated in Article 63 of the Announcement.

In 1988, the Ministry of Industry prescribed criteria and methods clarifying the requirements for the factory operators to destroy and eliminate hazardous waste pursuant

to Article 39 (6) and (16) of the Factory Act in a Ministerial Announcement No.25 B.E.2531 (A.D.1988) re ; The Duties of the Factory Operator, in an attempt to cope with the rapidly growing problems of hazardous waste. It is stipulated in Article 20 that:

"The Factory Operator is required to do adhere to the following:

(a) Separate the refuse or waste containing hazardous waste or cotton wool or cloth contaminated with inflammable substances and store them in an appropriate closed container. The elimination of such materials is particularly required to be carried out using safe methods and without given nuisance to the public.

(b) The factory operator operating the factory creating refuse or waste of a nature specified in any part of the list attached hereto is required to carry out the elimination of the refuse or waste as follows:

(1) No refuse or waste shall be taken away from the factory without the permission of the Department of Industrial Works for the purpose of n eutralization, elimination, dumping or burying by methods at a place a lso to be prescribed by the Department of Industrial Works.

(2) Notification shall be given of details regarding type, quantity, appe arance, and character of, and the storage place for such refuse or wast e. Also included must be methods for storing, neutralization, eliminati on, dumping, burying, moving and transferral according to the direction s and methods prescribed by the Department of Industrial Works.

There is no doubt due to the types of industrial activities in the Eastern Seaboard that pollution problems will occur if there are no appropriate measures to control them. Though there are few laws and regulations to deal with pollution protection, still the effectiveness of the laws depends upon the effective of the implementation. Sometimes, national policy on the matter plays an important role where strict measures may discourage investment.

3. CIVIL LAW

The Civil Law related environmental problems that have been chosen for analysis concentrate only on the remedial concept. At present in Thailand there are no laws nor regulation providing any compensation directly to an injured persons who suffered damage from pollution problems. Japan has had the Pollution Related Health Damage Compensation Law since 1974, (amended in 1984), that provides compensation for victims. Therefore, the only way to remedy the problem is claiming through judicial proceedings. When a person's right is violated and damage is sustained, that person is entitled to bring his case to the court requesting trial and judgment that the other party is at fault or violates the right of the plaintiff for compensation for damage. Previously, the problem was that if the damage was caused by industrial pollution, it would be difficult to prove the relationship between the cause and effect. The burden of proof failed on the plaintiff, i.e., the injured party. Statutes on which this litigation was based will be examined herein to indicate the complexities and difficulties in claiming for damages and compensation through judicial proceedings.

CRITERIA FOR JUDGING A TORT

As Thai environment law does not provide compensation to an injured party in the event of being affected by industrial pollution, litigation in Thailand in this aspect has to rely on the provision of Tort as per the Civil and Commercial Code of Thailand. Article 420 of the Code provides that "Any person who wilfully or negligently, unlawfully injures the life, body, health, property or any right of another person, is said to commit a wrongful act and is bound to make compensation therefore".

Evidently, the drafting of this Article was based upon Article 823 of the German Civil Code and Article 709 of the Japanese Civil Code (Mimpo, Law No.89). The German interpretation of "unlawfully injures" is harming the rights of others without power or in excess of the possessed power. This means that the violation of the rights of others is in itself unlawful unless the actor is empowered to act accordingly. Article 709 of Japanese Civil Law provides that "A person who violates intentionally or negligently the rights of another is bound to make compensation for damage arising therefrom", different from the provision in Thai law in not including the phrase "unlawfully injures". This is because the violation of the rights of another whether intentionally or negligently is in itself unlawful (Phot Butsapakom, 1980). Article 420 of Thailand's Code uses the word "unlawfully" which was translated from Article 823 of the German Code and carries the same meaning (Jitti Tingsaphat, 1980).

However, the exercise of a person's right although recognized by law, is a wrongful act if it causes damage to another. Louis Josserand formulated a theory on abuse of rights (L' abus de droit) wherein he stated that it is possible that one lawful action could be in violation of a general principle of law, meaning that the tort is committed because the right provided by law is designated for a specific purpose which is the public finalit and with which the party exercising such tort is required to comply. The departure from this principle is abuse of rights. French courts hold that the exercise of right shall be lawfully made and deriving benefit, and that the exercise of right to incriminate another without gaining any benefit or doing so with bad faith or with gross negligence is abusive of rights (Jeed Sethabutr, 1980).

The Thai Civil and Commercial Code provides in Section 5 that "Every person must, in the exercise of his rights in the performance of his obligations, act in good faith". Article 421 of the same Code provides that "The exercise of a right which can only have the purpose of causing injury to another person is unlawful". The Supreme Court of Thailand in its decision No.1618/2512 (A.D.1969) laid down a principle that "... The act of tort under Article 421 must be committed with a single purpose aiming at causing damage to another".

The principle of abuse of rights will be straightforward if applied to cases of environmental pollution where factories emit pollutants such as waste water, noise, dust or ash. In the event a factory emits pollutants in a quantity well within the standard values prescribed by law, and the accumulation of pollutant in the environment over a long period of time causes damage to others, the question arises whether abuse of rights should be applied because the Civil and Commercial Code has not laid down any principle on the finalit, i.e., public safety as cited in the decision of the Supreme Court No.1618/2512 that

"The action is not a tort in the event it aims at a result of the exercise of the right in its normal way, even if the defendant is aware that others will be injured". Therefore, it is difficult to say that the factory is liable for tort.

"Wilful" in Article 420 of the Thai Civil and Commercial Code means the awareness of possible damage resulting from an action committed, even if the damage is minimal, included knowledge of this fact, although in the actor's mind the actor did not think his action would cause damage. This is the principle for the interpretation of an action with awareness of damaging consequence.

"Negligence" means an unwilful action without reasonable attention, including an action committed by the person without reasonable attention. Action with negligence is an action where the actor is aware of the risk although such action is the exercise of his right, but the unanticipated damage incurred due to insufficient care. The Common Law of the United Kingdom and the United States provides that if an action is negligently committed and the damage is foreseeable, the actor is liable to the damage arisen notwithstanding the unanticipated interference, the actor is required to foresee the damage cause to others (Salmond J, 1924). The Thai Court considers that the relationship between cause and effect must be clear and exact, and that the adverse effects are able to be verified as the results of such causes.

Although Thai law does not provide which type of consequence is liable by the tortfeasor, the Supreme Court decision in this regard is as follows ; Supreme Court decision No.271/2467 (A.D.1924) "...It is the opinion of this court that in the event of negligence, the negligent party shall be responsible for the consequences normally and directly arising out of such negligence" ; in the Supreme Court decision No.933/2474 (A.D.1921)"...The fact in the case is the proximate cause of the collision of the vessels. The risk taken by the defendant who was aware of the danger without reasonable care..." ; and Supreme Court decision No.131/2496 (A.D.1953) "... The law shall observe the consequence of an action by a person when it is an ordinary or direct consequence of an action or a consequence of a proximate cause..."

The Supreme Court had considered the relationship between cause and effect by combining the Equal Condition Theory and Sufficient Cause Theory taking into consideration that damage does not arise if there is no action and such damage, a consequence of the action, is not too remote from the perception of ordinary people.

Considering Article 420 and damage arising from industrial pollution, although the amount of the pollutant emitted by the factory is well within the legal limit,it is l'abus de droit that causes damages to others when the damage is a direct consequence of the action of the factory. Whether the factory is wilful or negligent, the case is to be considered individually. However, the factory is liable under the law of torts as its action constitutes tort.

LITIGATION.

When it is considered that the damage caused by environmental pollution arising from the operation of a factory is the damage of a tort by the factory, the injured party is entitled to file a lawsuit requesting the court to adjudge that the damages or compensation be paid by the tortfeasor. Article 55 of the Thailand's Civil Procedure Code provides that

(Any person, whose rights or duties under the civil law are involved in a dispute or must be exercised through the medium of a Court, is entitled to submit his case to a civil court having territorial jurisdiction and competency over it in accordance with the provisions of the civil law and of this code". In submitting his case, the plaintiff is required to state clearly the nature of its claims and the nature of the relief applied for, and the allegations on which such claims are based, in order that the defendant will understand the claims, as provided in the second paragraph of Article 172 of the Civil and Commercial Code that "The plaint shall set forth clearly the nature of the plaintiff's claims and of the relief applied for, as well as the allegations on which such claims are based". Otherwise, the plaint will be ambiguous and not in compliance with the provision of the said Article 172, and the Court is empower to dismiss it.

A question that arises regarding the principle of procedures is that in the event the defendant disagrees or does not admit to the claim, the law provides that the plaintiff which is the party alleging the fact shall bear the burden of proof of such facts as provided in Article 84 of the Civil Procedure Code that

"Where a party alleges any fact in support of his plaint or answer, the burden of proof such fact lies on the party alleging it.

However, (1) a party is not required to prove facts which are generally known or are indisputable, or which, in the opinion of the Court, are admitted by the opposing party.

(2) Where there is a presumption in law favourable to a party, such party shall be required to prove only that the conditions entitling him to avail himself of the presumption have been fulfilled".

On the part of the defendant, he is required to state clearly whether he admits or denies the plaintiff allegations. Article 177 of the Civil Procedure Code provides that

".....

The defendant shall clearly set forth in his answer whether he admits or denies the whole or part of the plaintiff's allegations and his reason for such denial.

....."

Another problem is the burden of proof and the duty to adduce evidence under Article 84 lies on the plaintiff as he is the party alleging the facts. If the plaintiff is not able to prove the facts as alleged he will lose the case.

The law on procedure is a problem for the injured party in filing a lawsuit on tort claiming that the factory wilfully or negligently created environmental pollution thus inflicting damage on the plaintiff. The plaintiff is required to prove that the damage arose from action or omission on the part of the factory. How can the plaintiff prove that the factory emitted or discharged the waste such as air or water into the environment and the pollutant was accumulated in the ecological system and in the environment for a period of time before it took effect? How can the plaintiff prove that the pollutant was also accumulated in the body of the plaintiff causing health damage, since no physician would confirm that the sickness suffered by the injured party was caused by that pollutant discharged by that factory?

However, in addition, if the factory follows the procedures and standards for the waste provided by law, but the damage is still sustained because nature is not able to adjust the

amount of the pollutant accumulated in the ecological system and the environment due to the quantity of the pollutant and the period of time over which it accumulated, it does not seem reasonable to claim that the defendant or the factory wilfully or negligently injured the plaintiff another under Article 420. In the event the plaintiff requires the proof regarding the factory production process, the defendant is entitled to refuse the disclosure by claiming secrecy of technological know-how. Such refusal is possible under Section 92 of the Civil Procedure Code which provides that

"Where any party or person is required to give testimony or produce any kind of evidence and such testimony or evidence is not for disclosure

The said party or person is entitled to refuse...."

Procedural law requires that "both sides must be heard" for the trial to be conducted openly and fairly (Tanin Kraivixian),1978), the principle of natural justice. However, the law provides that only the best evidence and direct evidence shall be considered in a case. Doubtlessly, it is a complicated matter for the plaintiff to find such evidence.

A result of the complication to claim for compensation, and to present the responsibility of the government toward the pollution remedy, Part 6 Civil Liability of the Enhancement and Conservation of the National Environmental Quality Act B.E.2535 (A.D.1992) ease the difficult of claiming for compensation through court procedure. It is based on the Rule of Strict Liability that the owner or possessor of the pollution source committing the pollution problem may be held liable "with or without fault". The basis of the liability is the creation of harm under risk to another which is "conditional fault" meaning that the party committing such action is not to be regarded as at fault unless or until his conduct caused some harm to another, but he is then at fault, and to be held responsibility (William H. Rodgers, 1977).

The rule of Strict Liability is an exception of the Tort Liability that the intent or the negligence of the party committing the action is not taking into account. The principle on tort liability needs to be developed based upon the common sense that the fault is the individual responsibility as sometimes the witness is vague and ambiguous and cannot be used against the party causing damage (Robert L.Rabin,1976). Consequently, the amended Environmental Law of Thailand Part 6 Civil Liability enacted based upon the Rule of Strict Liability. Article 96 of the law provides that "If leakage or contamination caused by or originated from any point source of pollution is the cause of death, bodily harm or health injury of any person or has caused damage in any manner to the property of any private person or of the State, the owner or possessor of such point source shall be liable to pay compensation or damages therefor, regardless of whether such leakage or contamination is the result of a willful or negligent act of the owner or possessor thereof, except in case it can be proved that such pollution leakage or contamination is the result of ;

(i) Force majeure or war

(ii) An act done in compliance with the other or the Government or State authorities

(iii) An act or commission or the person who sustains injury or damage, or of any third party who is directly or indirectly responsible for the leakage or contamination.

The compensation or damages to which the owner or possessor of the point source of pollution shall be liable according to the foregoing first paragraph shall mean to include all

the expenses actually incurred by the government service for the clean-up of pollution arisen from such incident or leakage or contamination".

However under this Article, the injured party still has to take a case to court for compensation. He is not required to prove neither the relationship between cause and effect nor the intent or negligence. It is only required to prove that the damages is inflicted. At the same time the party committing the pollution is required to prove that the damages was not inflicted by his action, or the damage has been done under the exception of the provision. Nevertheless, it still creates complication and problem to Thai people since Thai people prefer to be far from court procedure. Therefore, other alternative for the injured party to get compensation should be taken into consideration.

Consideration of Article 25 of the Air Pollution Control Law of Japan which provides non-fault liability, shows that "when a person operates factories or working places involving discharge of air pollutants including material causing damage to health and harm to human life, such person is bound to take responsibility for compensation".

Article 19 of the Water Pollution Control Law also provides non-fault liability ; "when the person who discharges polluted water containing hazardous chemical material from the operation of factories or working places, and causes damages to life or physical condition to people, he is bound to take responsibility for the victim or injured person caused damages from the operation".

There is no word dealing with 'negligence' in these Article. This could be interpreted as saying that the provision do not require 'negligence' to be a minimum requirement, which is required under Article 709 of the Civil Law of Japan.

There have been cases of pollution victims such as the Yokkaichi Asthma victims, the Minamata disease victims, where the victims claimed compensation under Article 709. It was difficult to prove which factories or what sources of created pollution. Therefore, the court applied the 'joint-tort liability' meaning factories in the polluted areas should jointly take responsibility for the causes of pollution. Another proof which the court applied for the decision of these lawsuits is the epidemiological proof of the direct and indirect impact of the cause and effect of the pollution.

Article 709 provides for a general principle of tort liability which is not sufficient to be applied for the environmental pollution lawsuits. Therefore, it is necessary to enact specific laws in order to cover non-fault liability. Article 25 of the Air Pollution Control Law and Article 19 of the Water Pollution Control Law have been enacted for such means.

Another interesting point is Article 109 of the Mining Law, Law No.189, 1950, provides an exception of fault liability principle where "a person who causes damages to another person by excavation prospecting land or by water-jet prospecting over the prospective mine area, and that person has a mining concession over the mining area, he is bound to take responsibility for damages incurred. If the mining concession has been withdrawn, he is still bound to take responsibility".

This Article is considered to have created a new type of responsibility under the general principle of Article 709 that the law provides for non-fault liability of the mining concession owner in the present and past.

The Mining Law, actually, was drafted before World War II. This Act had been

amended by the Mining Law, Law No.289, 1950 which adopts the principle of non-fault liability as originally stated in the previous Mining Law.

However, the two important provisions of the Air Pollution Control Law Article 25 and the Water Pollution Control Law Article 19 have also adopted the principle of non-fault liability.

As the damage caused by industrial pollution continue to exist all the complications arising out of the litigation by the injured party are unavoidable. In Thailand, no legal protection for the injured is available without going to court. Japan, one of the foremost industrial countries of the world, once faced the same problem as does Thailand now but has now resolved problems such as litigation problems of the victims of the industrial pollution. The Court applied the strict liability theory to the cases in favour of the injured which became precedent for other environmental pollution cases. At the same time, to prevent ltigation complications, Japan enacted a pollution related health damage compensation law which reflected genuine responsibility, protection and remedy toward the injured party.

4. POLLUTION RELATED HEALTH DAMAGE COMPENSATION LAW, 1976 (Sunee Mallikamarl, 1988)

The Pollution Related Health Damage Compensation Law, Law No.111, 4 October 1973, a law unique to Japan, provides for the relief of pollution injury. It was promulgated under two types of pressure factors, i.e., internal factors and external factors.

Internal Factors are as follows:

First, the rapid advance of science and technology introduces new hazards to human life increasingly.

Second, there is the recognition of the environmental right to the Japanese people. In the past, pollution was believed to affect only one segment of the society, usually poor farmers or fishermen who were directly injured. Later, pollution spread all over Japan. The Japanese concerned themselves with the problems and attempted to claim their environmental right, thus creating wide spread movements amongst different social groups (Donald R.Kelly et.al.,1975).

Third, the industrial sector clearly showed no social responsibility and pollution victims had not been adequately compensated.

Fourth, the victims' death, their severe suffering, and the violence of mass demonstrations forced the government and the industry to seek an appropriate measures to stop the demonstrations.

Fifth, the victories of the victims in "the four major lawsuits" (Itai-itai case, Kumamoto Minamata case, Niigata Minamata case, and the Yokkaichi case) created precedent with court's decision to hold polluters liable for compensation.

Sixth, the pressure for the prevention of pollution from the victims, mass media and other social groups created intense difficulties for the industrial sector to sign up the cooperation of academics or scientists to testify or act on its behalf. Thus the industrial sector anticipated that the compensation system would diversify the risk of liability.

Seventh, the pollution trials were scientifically complicated, costly and time consum-

ing. And even if the victims succeeded in their lawsuit, there were no means to assure the financial solvency of the liable party.

Eighth, Article 21 of the Basic Law for Environmental Pollution Control required the government to take necessary measures to establish a system to relieve the patients affected by environmental pollution.

As to external factors, there were two influential events which supported the internal factors, i.e., the UN Stockholm Conference that publicized, to Japan's embarrassment, the agony of the victims. The horrified outcry of many private groups put impetus to subsequent action within Japan. Secondly, Japan endorsed the OECD's "polluters pay" principle. The original intent of the OECD declaration was to mitigate dislocations in international trade by requiring polluters at the outset to bear the costs of pollution prevention and control. The Japanese government extended this idea into a political means of persuading recalcitrant industries to pay the costs of pollution damage.

Under such influential factors, the Pollution Related Health Damage Compensation Law was enacted in 1973 and was made effective on September 1, 1974.

ESSENCE OF THE LAW (Sunee et.al.,1988)

The objective of the law as defined in Article 1 provides compensation to victims who sustained health damage caused by air pollution and water pollution in areas designated by law, as well as organizing recuperation projects for patients, including social welfare. Administration is the responsibility of the government while industrial factories pay compensation.

The principle of the law is to collect contributions from factories at a rate in proportion to pollution discharged by each factory. This is in accordance with "Polluters Pay" principle in economics. There are also certain contribution for the government.

The law contains 3 substantial parts.

(1) Designated areas. There are two Classes of Regions designated ; a Class 1 Region designation is made by taking the correlation between the disease and the air pollution through epidemiological approach. Under the law, criteria are set by the Central Council for Environmental Pollution Control. Sources of air pollution are movable sources ; (automobiles constituting 20 percent apportion of NOx) ; immovable sources ; (industry constitutes 80 percent apportion of SOx). A Class 2 Region designation represents an area where air and water pollution has occurred as a result of business activity or human activities, and where diseases are prevalent which would not occur without material or materials which are the cause of such air or water pollution, and which are generally considered to be linked to such diseases. The law prescribed three diseases, namely, Minamata disease, Itai-itai disease and Chronic Arsenic poisoning disease. The areas are also designated by law.

(2) Victim Certification. The clarification of the diseases is based on the explanation of an epidemiological study on probability. Three other criterias are also considered for the certification of victims ; designated areas, designated diseases, and duration of stay in designated area.

(3) Pollution Load Levy. The pollution load levy is based on the "Polluters Pay" principle, and the contribution is collected in proportion to the pollution discharged. The

air pollution load levy comes from factories (80 percent), and automobile owners and motorcycle owners (20 percent). The water pollution load levy comes from the factories which are the source of pollution. In such cases the law provides that the factory causing water pollution shall be responsible for 50 percent of the compensation, 25 percent by the government, and 25 percent by the local administration.

AGENCIES RESPONSIBLE

Government agencies responsible for the enforcement of the law comprise:

(1) The Environment Agency, established in 1970, supervises, control, and prevents environmental problems as well as maintaining the good health of the people. The Pollution Related Health Damage Compensation Law was proposed by this agency. Its main functions in relation to this law are the conducting of scientific research to establish causal relationship between diseases caused by water and air pollution, and the making of compensation through offices of the local administration.

(2) The Pollution Related Health Damage Compensation Association which collects pollution load levies from factories, and from owners of automobiles and motorcycles in the form of automotive tax. The Association's functions include payment of compensation to victims, and the supervision of expenditures for rehabilitation programs, and social welfare for victims (only the portion for which the local administration is responsible).

(3) The Pollution Related Health Damage Certification Councils which were established in all designated areas. The Council members comprise physicians, lawyers and experts in various fields concerned who will examine and investigate cases and certify the eligibility of the victims for compensation.

(4) The Pollution Related Health Damage Compensation Grievance Board which accepts and considers appeals. In the event the Board confirms the decision and the victims are not satisfied with the decision of the Board, the victim may elect to take the case to court.

After 14 years of the enforcement, the law has been amended. The law is of a remedial nature and does not directly address environmental problems caused by industry. After a long period of treatment and an amount of compensation, the patient's condition should improve. At the same time the industry has kept on trying to eliminate the SOx problem by introducing modern technologies in order to reduce its pollution load levy. In the end, the industry announced that SOx was virtually eliminated. Thus it was an appropriate time to amend this law as the government was in agreement that the remedy should end and that prevention and protection measures and improvement of environment should be paid more attention, including social welfare. The industry was no longer able to shoulder the pollution load levy. A negotiation therefore took place between the industry and the government for the cancellation of 41 air pollution designated areas and the industry agreed to make contributions to a new fund of 50 billion yen to be raised by the government to earn interest to spend in the protection and improvement of the environment and the provisions of such welfare. The funding ratio agreed to by the industry was 8 to 2, the same are previous apportioning. The negotiation was successful, resulting in the amendment of the compensation law by the cancellation of 41 designated areas. The amended law became effective in March 1988.

It could be stated here that the Pollution Related Health Damage Compensation Law was a law that serves the purpose to remedy alleviate the condition of incurable pollution victims (kogai patients).

5. ADMINISTRATIVE LAW

Although there are statutory provision dealing with industrial pollution control, the efficiency of the enforcement and the stipulation of regulations to cope with problems in each locality depends largely on the conditions of local administration. This part will analyze the relationship between central administration and local administration based upon Japan's and Thailand's Administrative Law.

5.1 ADMINISTRATIVE LAW OF JAPAN

Japan divides its administration as follows ;

(1) The Central Government which establishes and controls national policies and laws.
(2) Local Government which is divided into 4 autonomies:
  (i) To: Metropolitan (Tokyo Metropolitan)
  (ii) Doo: Hokkaido
  (iii) Fu: Semi-Metropolitan (Osaka Fu and Kyoto Fu)
  (iv) Ken: Prefecture (43 Prefectures)

Article 90 of the Constitution provides that the Local Governor and members of the Local Assembly are directly elected. Article 2 of the Local Autonomy Act provides that the central government grant administrative power to the local administration (prefecture, city, town and village) and that the prefecture shall grant administrative power to city, town and village respectively.

Local Government has two sources of power:

Within a tradition of strong centralization of power by the national government, local governments are relegated to a subservient role as the agents of policies and functions of the national government. However, based on the idea of doing away with such extreme centralization, the Constitution of Japan had provided four Articles on local self-government as follows:

Article 92 "Regulations concerning organization and operations of local public entities shall be fixed by law in accordance with the principle of local autonomy".

Article 93 "The local public entities shall establish assemblies as their deliberative organs in accordance with law. The chief executive officers of all local public entities, the numbers of their assemblies and such other local officials as may be determined by law shall be elected by direct popular vote within their several communities".

Article 94 "Local public entities shall have the right to manage their property, affairs and administration and to enact their own regulations within law".

Article 95 "A special law applicable only to one local public entity cannot be enacted by the Diet without the consent of the majority of the voters of the local public entity concerned, obtained in accordance with the law".

In addition, the Local Autonomy Act also provides that the central government grants

administrative power to the local administrations (prefectures, city, town and village) and that the prefecture shall grant administrative power to city, town and village respectively.

The local governments, therefore, have two sources of power :

1. The power granted by the central government. In the event the local government fails to exercise the power granted by the central government or insufficiently exercises such power or fails to enforce any law or proclamation or fails to legislate any rules and regulations in accordance with the granted power, Article 146 only provides that the central government file its petition to court of law while the local government has the right to file its answer.

2. The power of the local government on its own. Matters involving public interests, public utilities, and public facilities will be under the legislative power of the local government to establish controls and regulations, including setting of tandards in accordance with national statutes.

The exercise of the administrative power of the local government can affect the control of the environmental pollution as it is the agency closest to the problem, closer than is the central government. Its legislation is more direct applicable to the situation than that of the central government. However, local government legislation must be subject to the statutory provisions of the central government and shall not be in conflict therewith, and setting of environmental standards shall not be lower than those set by the central government. In some cases local governments will impose stricter emission standards than those in a national law.

Local governments have been playing important roles as the authorities taking integrated measures for environmental prevention in local areas.

The local governments engage in a wide range of pollution control activities through their enactment of pollution control ordinances, their enactment of pollution control agreements and through administrative guidance.

5.2 ADMINISTRATIVE LAW OF THAILAND

Thailand divides its administration into 4 sections as follows :

1. The Central Administration consisting of :

1.1 The Office of the Prime Minister. Under the third paragraph of Article 7 of the National Executive Council Decree No.218, the Office of the Prime Minister is responsible for formulation of policy, formulation of supervisory and follow-up plans, and formulation of plans implementing the policies approved by the Council of Ministers. The Office of the Prime Minister reports directly to the Prime Minister.

1.2 Ministries. At present there are 13 Ministries. According to Article 11 of the National Executive Council Decree No.218, a Ministry is responsible for its activities with power to issue Ministerial Regulations and Ministerial Announcements for public enforcement. Normally each Ministry will have its own agencies in different regions responsible for Ministerial regional activities.

2. Provincial Administration. According to Article 47 of the National Executive Council Decree No.218, the Provincial Administration shall be organized as follows:

2.1 Provinces (Changwat). At present there are 73 provinces. Articles 50 and 53 of

the National Executive Council Decree No.218 provide that Provincial Governor shall carry out policies and instructions and administer implementation in accordance with the assignments given by the Prime Minister, the Council of Ministers, Minister, Ministry, Bureau, and Department, in his capacity as the head of the regional administration.

2.2 District (Amphoe). Article 60 of the National Executive Council Decree No.218 provides that the District Officer (Nai Amphoe) shall carry out administration in accordance with the assignments given by Council of Ministers, Minister, Ministry, Bureau, Department or with the instructions of Prime Minister at district level.

Administration carried out by Provincial Governor and District Officer is based upon the power deconcentration principle.

3 Local Administration. The Constitution of the Kingdom of Thailand B.E.2521 (A.D. 1978) in Articles 180-183 concerning local administration focused upon power decentralization in order to promote self-government and more participation in administration, with a certain reservation of power by the central administration to maintain check and balance.

Article 65 of the National Executive Council Decree No.218 and No.326 divides local administration as follows:

(1) Provincial Administration Organization ; established by the Provincial Administration Organization Regulation Act B.E.2498 (A.D.1955), the Provincial Administration Organization is administered by a Provincial Council comprised of elected members, and the Provincial Governor, an official of the central administration. The Provincial Administration body is under the control of the Provincial Council. The Provincial Council of each province is empowered to promulgate Provincial Bylaw not in conflict with national law. Under Article 44, the Minister of Interior has a power to dissolve the Provincial Council, and the Provincial Governor may exercise his power under Article 45 to revoke any resolution of the Council.

(2) Municipality. The Mayor and the members of the Municipality Council are elected. The Municipality Council is empowered to promulgate bylaws not in conflict with the law. The Municipality may carry out policies of the central administration. The Provincial Governor and the District Officer are empowered to control and oversee the Municipality's activities to ensure its activities with the law. The Minister of Interior has the power to remove a Council member from Council membership.

(3) Sukhaphiban (a form of local government on a lower level than have the same authority as that of a municipality) Municipality. Sukhaphiban has Sukhaphiban Committees to carry out activities not in conflict with the law. A Sukhaphiban may promulgate bylaws not in conflict with the law. It is overseen by the Provincial Governor to ensure its activities comply with the law.

4. Special Local Administration

Thailand has two special localities under specific local administration legislation as follows :

4.1 The Bangkok Metropolis is a local administration pursuant to provision of Article 6 of the Bangkok Metropolis Administration Act B.E.2518 (A.D.1975), it is differentiated from the municipality type of administration.

Article 9 of the Bangkok Metropolis Administration Act provides that the Governor

of Bangkok Metropolis Administration is elected with the duty to formulate policies and carry out administrative activities in compliance with the law based upon the principle of power decentralization. Members of the Bangkok Metropolis Administration also are elected with the duty to scrutinize bylaws of the Bangkok Metropolis Administration as stipulated in Article 97. Article 123 provides that the Minister of Interior shall oversee the activities of the Bangkok Metropolis Administration to ensure compliance with the law and with policies of the States.

4.2 Pattaya City is a local administration pursuant to Article 7 of the Pattaya City Administration Act B.E.2521 (A.D.1978). Under Article 8, the administration comprises of an elected Pattaya City Council and Pattaya City Governor. The duty is to formulate policy and approve administrative plans for Pattaya City, including scrutiny of Bylaws. The Governor shall nominate Pattaya City's Deputy Governor with approval from the Pattaya City Council. The Deputy's duty is to carry out administered and managed in line with the plans and policies of Pattaya Council. The Minister of Interior has the power to dissolve Pattaya City Council upon the recommendation of the Provincial Governor.

As mentioned earlier, in addition to the requirement of enforceable laws, relevant administration is required to efficiently control environmental problems. It can be seen that Thailand employs power decentralization and deconcentration principles to carry out its administration. Agencies are empowered to stipulate regulations and bylaws enforcing compliance. A well coordinated administration between central administration, provincial administration, local administration and special local administration would enable Thailand to efficiency control,protect, prevent and resolve pollution problems. For example, consider the Factory Act, the law utilized as a measure to control industrial factories in preventing them from causing pollution problems. Article 6 of the said Act empowers the Minister of Industry to appoint officials from the central government to carry out their duties in the regional area, and to appoint a head of the local administration of the locality to be the competent official under the said Act. The appointed officials are the Provincial Governors, the District Officers, and the Bangkok Metropolis Administration Governor. However, as the appointment is made under the principle of power deconcentration, the regional officials do not have the power to make final decisions, as such power is reserved for the central a dministration.

Another piece of legislation is the City Planning Act B.E.2518 (A.D.1975) which involves rural development planning. The Act provides that the Municipality Council, Sukhaphiban Committee, Provincial Governor or District Officer, Bangkok Metropolis Administration Governor, be the local competent officials with the duty prescribed in Article 18, i.e., the preparation of a general town plan with prior approval from City Planning Board. After completion, the general town plan shall be sent to the City Planning Office for consideration. The procedure for the preparation of specific town planning is required to follow that of general city planning. Again, the administrative power is deconcentralized from the central administration to the local administration, and the power to make decision reserved for the central administration.

Articles 25 and 26 of Public Health Act B.E.2484 (A.D.1941) provides that the local official (i.e.,Municipality Council, Sukhaphiban Committee, Provincial Governor or District

Officer) is empowered to eliminate, prohibit and bring to an end nuisances in public or in private premises which might deteriorate or endanger public health, public safety or the people's rights and liberty. The local official is required to maintain roads, waterways, drainage, ditches, canals, and other places in his jurisdiction free from nuisance.

This Act is based upon the principle decentralization from the central administration to the local administration, such as the Bangkok Metropolis Administration promulgated the prescription of controlling measures for certain types of factory in its bylaws No.2 B. E.2526 (A.D.1983) as recommended by Public Health Officials pursuant to Article 7 of the Public Health Act and by virtue of Article 67 of the Bangkok Metropolis Administration Regulations, the prescription of controlling measures for certain types of factories.

The principle of decentralization, upon which the Public Health Act was based enables local administration to control and prevent industrial factories from creating pollution problems or nuisance.

Although Thailand's Administrative Law is based on the principle of power decentralization and the principle of power deconcentration, it can affect the enforcement of the law controlling industrial pollution at the local level.

6. CONCLUSION

The Thai government has never neglected environmental pollution problems originating from industries. Instead, the government has attempted in many ways to prevent and to solve those problems by passing various laws to support the power of the state, i.e., the Enhancement and Conservation of the National Environmental Quality Act B.E.2535 (A.D. 1992) ; the Factory Act B.E.2535 (A.D.1992) ; and the Industrial Estate Authority of Thailand Act B.E.2522 (A.D.1979) ; as well as the amendment of older laws to support effective enforcement.

As different laws have different purposes, enforcement by any single act has too many constraints. However, if the officials concerned with each act really attempted to practically and truly enforce the law, the violators would have lessons to learn and may not desire to risk violation again. Well coordinated enforcement will effectively resolve problems. If the enforcement by government officials is implemented efficiently, evenly and fairly, including an extensive and continuing public relations campaign to arise the good sense of the factory operators towards environmental quality, it is believed that in addition to achievement in terms of pollution control, conflict will be reduced or even eliminated between economic development policy and environmental development policy, and both will be carried out smoothly and simultaneously.

In summary, the analysis of the laws related to the control of pollution created by industrial activities initiated in the Eastern Seaboard Area in comparison with Japanese environmental
laws is as follows:

6.1 ESSENCE OF THE LAW

The Basic Law for Environmental Pollution Control, 1967, is a fundamental law of

Japan dealing directly with environment. The law deals with passing of laws controlling pollution, at present 14 in number, such as the Air Pollution Control Law, the Water Pollution Control Law, and the Waste Management Law. These special laws contain provisions dealing with pollution control according to their objectives. In addition, the Basic Law for Environmental Pollution Control empowered the central government through the Environment Agency to prescribe national standards as guidelines for local governments to set their own standards to suit the conditions of local problems. The local standards shall not be lower than the national standards. As regards pollution victim remedy, before the enactment of Pollution Related Health Damage Compensation Law serious industrial contamination of the environment affecting the health and life of the Japanese occurred when claiming of compensation by the victims was still a complex process carried out through court action. This law was enacted in order to help the victim and to recognize the responsibility of the government and the industrial side. In comparison, Thailand as previously did not have an environmental law or special laws dealing with environmental pollution control, but it has over 50 laws which can be construed to apply to pollution control. There will definitely be problems in the enforcement of these laws as all have their specific objectives, none relating to the environment proper thus their essence does not cover pollution control. However, under the government of National Peace Keeping Council (1991-1992), the government put more emphasis on environmental controls, causing the Enhancement and Conservation of the National Environment Quality Control Act B.E.2518 (A.D.1975) to be amended in 1992. It is a comprehensive environmental law that covers all functions and duties of the National Environmental Board in controlling environmental problems. Local government will have more authority empowered it by the law to deal with environmental problems. Moreover, an environmental fund will be provided for environmental disaster prevention and for the cleaning up of pollution contamination. Compensation is not included.

In addition, regarding enforcement personnel efficiency, enforcement officers in Japan are under a power delegation system where power is distributed to all regions while in Thailand although the power is somewhat delegated from the center, no real local enforcement environmental regulations has been attempted. Moreover, Thailand is also suffering from insufficient personnel. The Factory Act authorized the personnel of the Department of Industrial Works to make inspection regarding pollution control. At present, the Department of Industrial Works has 99 officers to inspect about 50,000 legally registered factories.

The study of the impact of the pollution from industrial factories reveals that there are direct and indirect impacts affecting the environment and local people, as well as and other regions all over the country depending upon the distance from the pollution source (Sunee Mallikamarl, 1990). In principle, legal measures regarding pollution control normally will take into account cause and effect and the degree of deterioration. However, the cause of environmental impact is not always easily traced. If the impact which caused damaged occurred directly, the proving of relationship between cause and effect is not so difficult, because the cause of the damage is obvious. If the damage is a result of an indirect impact, it will be very difficult to prove the relationship between the cause of damage and

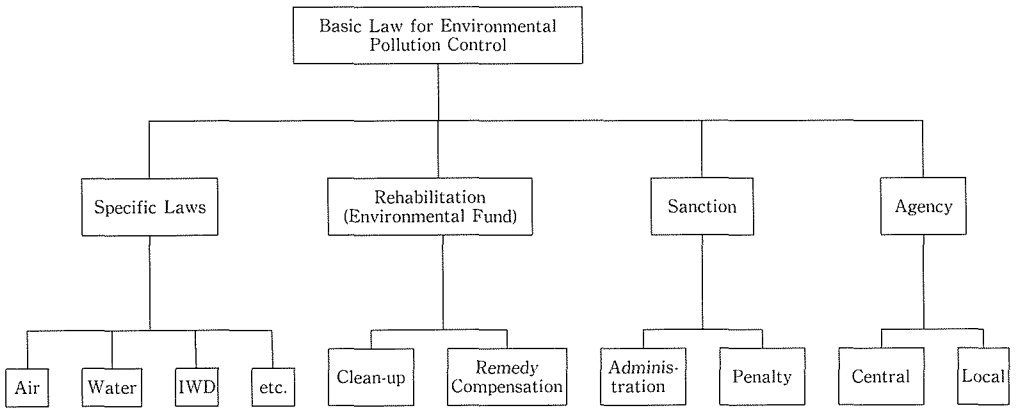

Figure 1 Structure of the proposed environmental law

the effect. This is because the impact was not obvious and law scholars may say the effect is too far from the cause. Current laws mostly deal with direct impact rather than indirect impact. For example, the environmental law of Japan, known to be highly effective regarding its enforcement, does not really cover indirect impact. As evidenced in Pollution Related Health Damage Compensation Law, 1970, designated areas for air pollution and water pollution were prescribed as criteria to determine compensation for an injured party living within the designated areas. This was rather obvious as the area was directly affected by pollution and source of which was in that same area as the party injured by the pollution. But injured parties living outside the designated area are not protected by law. Actually, such injured party may be indirectly affected and suffer damage. For example, if a person residing in Minamata Bay area ate fish caught from the bay and suffered Minamata disease, that person is entitled to claim compensation under the law. However, if a person not residing in Minamata Bay area suffered from Minamata disease because of eating fish contaminated with mercury caught from Minamata Bay contaminated with mercury, he will never be able to receive legal compensation even though the fish he ate were from the polluted area. The impact in this manner is indirect impact.

6.2 AGENCIES RESPONSIBLE

Japanese environmental law authorizes the Environment Agency to play the role of enforcement agency. The Environment Agency is subordinate to the central government which in turn has delegated its power to local governments. This means that the local governments are entitled to issue their own rules and regulations without having to rely on the central government. They only have to be careful not to do anything in conflict with the central government policy. This makes it possible for them to resolve or control pollution problems in accordance with local reality. In view of direct and indirect impacts, if the local rules and regulations are effective enough to control the local pollution, there will be no direct impact in the locality and thus no indirect impact to worry about.

In Thailand, although the National Environmental Board is overseeing all kinds of

pollution from various sources at the federal level under the Enhancement and Conservation of the National Environmental Quality Act, its actual role is that of a technical advisor to the government, giving advice and proposing policies. This makes pollution control even less efficient. Moreover, for the National Environmental Board to carry out its operation, it has to request cooperation from the various agencies concerned. For example, if an operation concerns pollution from an industrial installation, the NEB must request cooperation from the Department of Industrial Works. This results in the efficiency of its operation being dependent upon the degree of cooperation and coordination between agencies. Thus the resolution of pollution problems may be therefore fraught with excessive obstacles and difficulties.

7. RECOMMENDATION

Based upon the study, the researcher has the following recommendations:

The recommendations are for the appropriate structural elements of Thailand's environmental law.

The structure of Thailand's environmental law should be in the form of a Basic Law for Environmental Pollution Control similar to that of Japan. It should be structured as follows (see Figure 1):

7.1 The essence of the law providing for general rules for environmental pollution control.

7.2 The portion of the law providing for power in .pn62 promulgating specific laws such as the Air Pollution Control Law, and the Water Pollution Control Law. This would be required since in dealing with a pollution situation, there may be call for a specific law rather than a general law, as specific law may have to deal with details too numerous to be incorporated into the general law.

7.3 A portion of the law providing for rehabilitation in the form of an Environmental Fund to cover two aspects:

7.3.1 A clean-up aspect which would provides rehabilitation of the pollution -contaminated area. This could be carried out by two alternatives:

(i) Rehabilitation carried out by the government with the expenses borne by the polluter.

(ii) Rehabilitation carried out by the polluter at its own expense with government assistance on a case-by-case basis, such government assistance in the form of interest-free loan, soft loans, or government carrying out co-rehabilitation with the polluter.

7.3.2 A remedial aspect. As present, the only way the injured parties can be compensated is through litigation. The remedial measure, when in effect would compensate the injured parties for the damage inflicted upon them without investigation of court action. The compensation would be provided for by the setting up of an Environmental Compensation Fund. The Fund is comprised of

(i) Government subsidies.

(ii) Contributions from industrial factories under the 'Polluters Pay' Principle (PPP), which may be collected in the form of factory setting up fees, renewal fees, factory

expansion fees, and so on. Such fees may be based upon the type of pollution anticipated, the size and production capacity of the factory, and may take into account the amount of pollution overemitted
in relation to the standard of quality of the environment.

(iii) Other subsidies.

(iv) Interests and benefits arising out of the Fund.

(v) Other supporting funds.

7.4 A portion of law providing sanctions making the application of the law more effective. There are two alternatives:

7.4.1 Penalty sanctions by imposing criminal penalties on offenders.

7.4.2 Administrative sanctions via non-permission of factory operation, non-renewal of licenses, etc.

7.5 An Environment Agency. Although the National Environmental Board (NEB) is the agency responsible for the caretaking of national environment, it is not furnished with authority to force other agencies to co-operate to effective control environmental problems. NEB does not even have power to impose penalties or take any direct action against private parties contaminating the environment. It is suggested that the NEB should be provided with more power and its scope of authority widened. And as it is an agency at central government level taking care of the environment of the nation, it should be able to transfer its power to local governments in the form of decentralization to enable the local governments to issue rules, regulations, orders, bylaws, as well as to prescribe the standard quality of the environment for their own localities without conflicting with the central standards prescribed by the NEB. In addition, the local governments should have similar authority within their territories as does the NEB, such as the power to make decisions to solve problems arising within its jurisdiction by only reporting to NEB or by requesting cooperation from NEB.

7.6 Although the present Enhancement and Conservation of National Environmental Quality Act B.E.2535 (A.D.1992) has included public participation in Article 6 but still it lacks of public responsibility. Sometimes industrial pollution may cause damage to natural properties such as fish in the river. The natural properties belong to the nation not individual person. In such case no citizen has a right to be a plaintiff to sue against the polluter in order for the polluter (defendant) to rehabilitate the damaged nature. Therefore, it is recommended to provide the content of public responsibility in the general provision of the environmental law.

7.7 Based upon the above mentioned law structure, the direct repercussive impact of pollution will be directly dealt with, although indirect repercussive pollution impact will perhaps not be so effectively dealt with. The efficient enforcement of the control of the pollution will result in the conservation of the environment. The rehabilitation element would improve the condition of the environment and in the meantime would prevent indirect repercussive impact. With regard to compensation, if the law takes into account the direct and indirect repercussive impacts of pollution, it would sufficiently benefit the injured as this means that the law considers the effect to be more important than the cause, in effect disregarding the manner the damage inflicted on the injured person, whether direct

or indirect. Such provision would prove the generosity of the government and the polluter alike.

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