"SUSTAINABLE DEVELOPMENT": LAW, THE ENVIRONMENT AND WATER RESOURCES IN MODERN THAILAND

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Abstract

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The overall purpose of this thesis is to examine problems concerning implementation of the concept of sustainable development in the area of water resources using Thailand as a case study of a developing country. The aims and objectives of the thesis are to provide an analysis of water case studies focusing on fieldwork undertaken in different regions in Thailand, an analysis of the legal system; and strategies for environmental protection; considered in the context of rapid economic expansion.

The thesis begins with an examination of the foundation and background of Thailand's legal system, its economic development and its environment. Particular emphasis is given in the thesis to water resources. Water is a specific medium to judge pollution standards as a whole. Pollution for land and air often eventually makes it way into water system. Water regulation and pollution control is an example of environmental regulation as a whole. This is followed by an analysis and evaluation of the legal framework of environmental law. The aim is to examine the evolution of the legal protection of the environment in Thailand as well as to analyse the existing contradictions between the country's legal order and its actual environmental problems. The dynamics of the country's political process are then considered. Finally, the question of how the concept of sustainable development might assist in the application of environmental protection to water resources in Thailand is examined, using disputes over water allocation and water pollution. The case studies are drawn from different regions in Thailand.

In Thailand there has certainly been more environmental awareness in recent years, but the implementation of sustainable development strategies remains at an early stage, despite, the Rio conference in 1992 and Rio II in 1997 emphasising the conservation of natural resources. The concept of sustainable development is also incorporated in the new Enhancement and Conservation of National Environmental Quality Act 1992 (the 1992 Act), despite to a limited extent, some principles for sustainable development such as the precautionary principle, the PPP, EIA, right of access to environmental information and public participation. In Thailand primary legislation is in place but water resources regulations are required. Thailand is on a slow learning curve in its strategies for protecting the environment.

In the thesis, case studies at a local level have been undertaken and through these case studies, it is clear that sustainable development concept is not fully integrated and accepted as a way to solve water problems at a local level. This indicates a failure of western concepts and their adaptation in developing countries such as Thailand. However, traditional approaches may be used to improve and promote sustainable development concepts together with Agenda 21, western approaches and experiences, which is called "The Mixed Approach". Thailand is in the advantageous position of being able to learn from the mistakes and environmental failures of the developed countries with respect to water resources policy. At the very least, it must acknowledge that environmental problems cannot be fundamentally solved without addressing them at the time of economic development. Still further, Thailand must not adopt the model of western environmental protection laws without first ensuring that the new reforms are suitable for the needs of the Thai economy and people.

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List of Abbreviations

AJIL	American Journal of International Law
ALI-ABA	American Law Institute-American Bar Association Continuing Legal Education
Am. J. Comp. L	American Journal of Comparative Law
Annals Am. Acad.	Annals of the American Academy of Political and Social Science
ASEAN	Association of Southeast Asian Nations
AUJIP	American University Journal of International Law and Policy
BMA	Bangkok Metropolitan Authority
BOI	Board of Investment
Colorado JILP	Colorado Journal of International Law and Policy
Cornell ILJ	Cornell International Law Journal
Denver JILP	Denver Journal of International Law and Policy
DIW	Department of Industrial Works
E. Asian Exec. Rep	East Asian Executive Reports
Envt'L. Rep.	Environmental Law Reporter
FAO	Food and Agricultural Organisation
Geo. LJ	Georgetown Law Journal
Geo.Int'l Envtl.L.Rev	Georgetown International Environmental Law Review
Hastings ICLR	Hastings International and Comparative Law Review
ICLQ	International and Comparative Law Quarterly
IEAT	Industrial Estate Authority of Thailand
ILA	International Law Association
ILM	International Legal Materials

ILR	International Law Reports
IMF	International Monetary Found
IUCN	International Union for the Conservation of Nature
J.Int'L.&Prac	Journal of International Law and Practice
JEL	Journal of Environmental Law
JPEL	Journal of Planning and Environmental Law
MOI	Ministry of Industry
MOSTE	Ministry of Science, Technology and Environment
MWA	Metropolitan Water Works Authority
Nat. Res. J.	Natural Resources Journal
NEB	National Environment Board
NEQA	The Enhancement and Conservation of National Environmental Quality Act
NESDB	National Economic and Social Development Board
NESDP	National Economic and Social Development Plan
NIEO	New International Economic Order
OEPP	Office of Environmental Policy and Planning
OPCD	Office of Pollution Control Department
Pac. Rim L&Pol'y J	Pacific Rim Law and Policy Journal
Pace LR	Pace Law Review
PPP	Polluter Pays Principle
TDRI	Thailand Development Research Institute
TEI	Thailand Environment Institute
Texas ILJ	Texas International Law Journal
UNDP	United Nations Development Programme

UNEP	United Nations Environment Programme
Vand JTL	Vanderbilt Journal of Transnational Law
WCED	World Commission on Environment and Development
WCN	World Charter for Nature
Widener L. Symp. J	Widener Law Symposium Journal
Willamette L. Rev	Willamette Law Review
WWF	Worldwide Fund for Nature
WWW	World Wide Web
Yale LJ	Yale Law Journal
YIEL	Yearbook of International Environmental Law
YUN	Yearbook of United Nations
YWB	Yearbook of World Bank

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List of Statutes

The Enhancement and Conservation of National Environment Quality Act of 1992(the 1992 Act)

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The Toxic Substance Act (TSA) of 1967,

The Public Heath Act (PHA) of 1941

The Building Control Act (BCA) of 1979

The Cleanliness and Orderliness of the Country Act (COCA) of 1960

The Industrial Estate Authority of Thailand Act(IEATA) of 1979

The Wild Animal Protection and Reserves Act (WAPRA) of 1961(amended 1992)

The Forest Act of 1941(amended)

The National Park Act of 1961(amended)

The Minerals Act of 1967

The Fishery Act of 1947

The Tourism Authority of Thailand Act 1979

The Factory Act, 1992

The Hazardous Substances Act, 1992

The Public Heath Act, 1992

The Municipal Cleanliness and Orderliness Act, 1992

The Navigation in Thai Water Act, 1992

The Royal Irrigation Act, 1942

The Minerals Act, 1967

The Building Control Act, 1982

The Underground Water Act, 1980.

Preface

It has been reported[1] *that three-quarters of the earth's surface are covered with water. However, unlike some natural resources, the total volume of water is not increasing or decreasing. There is essentially the same amount of freshwater on the planet today, as there was 2,000 years ago.*[2] *By the year 2,050, the world population is estimated to become over 6,000 million. This requires sufficient quantity and quality of water for agriculture and other uses, especially for industry to meet the potential demand. It means that appropriate water control and management must be ensured to preserve water resources for future generations. As it becomes increasingly scarce in areas around the world, many debate how best to manage these critical resources. Yet trends in freshwater availability still fail to receive the attention they deserve and are rarely examined in the context of sustainable development.*

The purpose of this thesis[3] is to examine water pollution in Thailand and the attempts to fully implement the concept of sustainable development developed in the Western world since the Rio Declaration. Thailand is a case study of how the protection of water resources might be addressed within the overall context of sustainable development. Thailand is a developing country with the potential for sustainable growth. In the past two decades, Thailand has moved from an agricultural country to become an increasingly developing and industrialised country. The main features of which are the expansion of industrial development and increasing urbanisation. This has taken place rapidly. Thailand's economy has made remarkable progress over the past two decades to above the average GDP of 7 % throughout the 1990s. Since 1997, Thailand has suffered economic decline because it is suffering from the so-called "bubble economy". This means its rapid growth may be equalled by its rapid decline. In the future, it will be interesting to see how Thailand will handle the environment protection during the current economic recession. After 2003, it is expected that Thailand will experience economic

[1] J. Barberis, ' International Groundwater Resources Law', (1986) FAO Publication No. 40, p.1.
[2] P. LeRoy, 'Troubled Waters: Population and Water Scarcity', (1995) Colorado Journal of International Environmental Law and Policy, Vol. 6, pp. 299-326.
[3] A summary is provided in the abstract.

growth once more.

The thesis examines some of the legal aspects attached to the concept of sustainable development and Agenda 21, which has played an important role in environmental international law. Due to the vastness of the subject of environmental law, the research is focused only on protecting water resources; developing strategies against water pollution and developing a policy of sustainable development in Thailand. The thesis takes account of these recent developments by examining the current Thai legal system, economic development and the environment. The environmental problems especially water resources and water pollution in Thailand are then examined, followed by an analysis and evaluation of the legal framework as well as the water legislation in these areas. Finally, the Thai water case studies will be addressed.

This is the first thesis in this field. The research undertaken is based on fieldwork carried out in the last two years. The fieldwork covers the development of conflict resolution in a number of cases involving water resources. None of the cases involved court proceedings; thus emphasising the informal methods of dispute settlement. This is in sharp contrast to the highly developed legal system and modernisation programme for law reform. I had a general interest in environmental issues before I stared this research. I chose to do the research in the area of water resources. Firstly, because there has been account or study of literature about water problems than in other areas in Thailand. Second, since modernisation has taken place in Thailand, water resources as the main sources of energy, the problems of water pollution and water scarcity became a much more serious problem than any other area of environmental protection. Therefore, it is hoped that the analysis offered in this thesis, may further this area of study to other relevant fields of the environmental law in the future and benefit the people of Thailand with a better environment as one of the aims of the thesis.

PART I THAILAND'S; LEGAL SYSTEM, ECONOMY AND ENVIRONMENT

The content, organisation and layout of Part I of the thesis is as follows: In Part I, there are four chapters. Chapter 1 is an introduction to the thesis, it sets out the basic themes and issues to be addressed. An overview of environmental law and legal systems in Thailand is provided. The economy and environmental problems in Thailand are also considered in outline. Chapter 2 contains an introduction to the Thai legal system, its civil law tradition and the procedures and process involved in civil and criminal cases including environmental procedures. Such procedures are the basic foundations of Thailand's legal system, which reflect Thailand's agricultural and feudal system. Chapter 3 provides an introduction to the economy in Thailand. This covers early economic development and its remarkable success until the collapse in 1997. The so called " Boom (1986-1996) and Bust (1997-) years". Thailand's economy is expected to recover by 2003.[1] Chapter 4 is focused on the Thai environment in the context of the development of the country, it's institutions and policies. Rapid industrial growth and development impacted severely on natural resources especially the quality and availability of water resources.

[1] World Bank Report and Monitor on Thailand's Economy, http:/www.worldbank.or.th/monitor. assess on 18 March, 2000.

Chapter 1 An Introduction and Overview of the Thesis

Introduction

The thesis is a study of environmental law and water resources in Thailand. The purpose of the introduction is to explain the organisation of the chapters and the methodology used in the thesis. There is also some contextual background setting out the economic changes to the environment experienced in Thailand over the past two decades.

Organisation of the thesis

The thesis is divided into three parts, Part I is concerned with explaining the history and background of Thailand's legal system, economy and environment. In chapter 1, there is a general introduction providing an overview of the content of the thesis, the main analysis and why water resources is the primary focus of the thesis. It became apparent during the research for the thesis how water has a principle role in Thailand's future prosperity. The central and pivotal importance of water needs clarification and this set out below by way of an overview.

Protecting Thailand's environment inevitably leads to the question of the role of law and the Thai legal system. Chapter 2 of the thesis provides an outline of the legal system I analyse the development of the Thai legal system. I adopt an historical approach that sets out significant events from the early period to recent development in the legal system in Thailand. In Chapter 3, I analyse the economic development I first outline the economic history. This is followed by the modern experiences leading to the result of the economic collapse in the 1990's. In Chapter 4 there is an explanation of the major problems facing the environment in Thailand. In this general context, it is possible to appreciate how significant water resources are and how regulation and protection are required to assist Thailand in developing the right agenda for the future.

Part II of the thesis is principally concerned with water resources and the law in Thailand. In Thailand the substantive law on water resource and quality is complex. In chapter 5 and 6 there is an explanation of how improvements in the law, introduced over the past two decades have failed to have an impact on Thailand's environment and water resources. The new 1992 Enhancement and Conservation of National Quality Act (1992 Act) is examined. The 1992 Act provides a modern and comprehensive code of environmental protection. A new agency (strengthening the existing NEB) and fully pro-active enforcement powers. As will be outlined much of the 1992 Act comes from Western influences in environmental protection law. The question addressed is how effective is the 1992 Act in Thailand? In chapter 7 there is an evaluation of the variety of case studies involving water disputes in Thailand. The research undertaken for the case studies is based on primary research. I give an account of the case studies which occurred in different regions in Thailand and in which the sustainable development concept is invoked. In an analysis of the case studies, I make a number of specific points about water resolution in Thailand. This is focused on the current statutory environmental legislation to identify and mitigate adverse environmental effects, the governmental decision on the part of environmental protection who enforce the law. In the light of water case studies, a number of questions arise : Does the sustainable development concept address the existing demands of (a) a fast developing market economy (b) developing countries (c) regional vs. central differences (d) a feudal system- legal system which is not fully integrated and modernisation challenges (e) political differences and corruption (f) villages vs. city or central vs. domestic?

Part III of the thesis is as follows: In chapter 8 I analyse the principle concept of sustainable development. The concept is western in origin and the question arises as to how sustainable development is implemented in Thailand through the water case studies

analysis. In chapter 9, I make some general conclusions sustainable development and water resources in Thailand. Because the ideals of sustainable development were taken from the Western world it requires the acknowledgement of adverse impacts upon the environment and natural resources from unrestrained economic development. It ultimately requires a willingness to set limits on the type and manner of development for the long-term benefit of society and the ecosystem. One question that I attempt to answer is does the implementation of the concepts of sustainable development succeed in Thailand from the perspective of developing countries? In addressing this question, I analyse the current state of sustainable development and advance a number of propositions about its future as to its long-term commitment in developing countries. The balance between economic growth and environmental protection is addressed in the analysis of the case studies on water resources. By way of conclusion, as far as implementing sustainable development in Thailand is concerned, I conclude that there has certainly been more environmental awareness in the period following the Rio Summit and the most needed legislation is in place. The traditional and eclectic approach in Thailand has to be integrated into Thai environmental laws and policies in the future as well. The main problems are ensuring effective law enforcement and achieving greater public participation.

The main focus of the thesis is a study of water resources. There are a number of reasons why water resources was chosen as a subject. Water resources provide a good case study of the main challenges facing Thailand's ambitious plans for economic modernisation. Water resources are linked to energy supply as the bulk of Thailand's energy requirements are provided through hydroelectric schemes. Thailand is likely to require significantly more energy for both rural and industrial development and for most

of the next century[2]. This places enormous demands on the development of water resources. Such intensified economic development has already had substantial impacts on water resources and environmental quality. One way forward is to implement the concept of sustainable development already required in international law. Thailand's environmental law since 1992 provides for principles of sustainable development. The question of how the concept of sustainable development, which is fully tested and adopted by western countries, might assist in the application of environmental protection especially the water resources in Thailand is a key issue for the future. The problems of sustainability are addressed in the thesis. A part of the research undertaken for the thesis includes a number of case studies to discover the effectiveness of the newly modernised environmental law in Thailand. The water case studies in Thailand provide for the first time in a study of how Thailand today has emerged as a vibrant industrial country with increasing demands on its water resources. It is clear from the case studies that managing water resources in Thailand faces a number of challenges not least the question of how local customs have to be accommodated within the general scale of environmental laws and their application.

Building on the ideas of sustainable development is Agenda 21. Agenda 21 takes sustainable development a step forward in strategies for implementation. Agenda 21 interprets sustainable development to mean that a communities based focus at a local level should be made to develop a co-operative approach to development and environmental protection. Agenda 21 is comprehensive in scope and includes common access to a variety of distant areas to develop an integrated and common progression with co-operation between states.

[2] TCGE, Thailand National Report to UNCED 1992, 'Energy and Environment'(Bangkok, TCGE, 1992), pp. 127-132.

Agenda 21 is expressed in a series of goals, objectives and prospects with a cost estimate. The aim is to build on the principles achieved in developing the global audit. Education and political action must be unveiled to see how far each nation achieves common goals and objectives.[3] Whether Agenda 21 will provide a view of implementation of sustainable development is examined in the thesis.

Methodology used in the thesis

The methodology in the thesis requires elaboration. The methodology applied is as follows. First, research was undertaken setting out all the current laws, statues and cases relevant to water resources in Thailand. This involved extensive research in libraries in Thailand and also through databases in the University of Warwick Library in the UK. Secondly, an analysis of Thailand's new environmental protection laws, the work of the newly established environment agency in Thailand was undertaken. Thirdly, fieldwork undertaken over the past two years focused on a number of case studies involving water disputes (such as water allocation, water pollution, planning matters and in building a dam etc.). Surprisingly, few conflicts reach the Courts. This is so even when legal issues are involved. Instead it was found that the conflicts were resolved internally and on an informal basis. Given the nature of the hugely complex and modern form of environmental law in Thailand the case studies provide a striking analysis. Thailand's legal system operating in rural and local areas is largely unaffectedly by central laws and legal institutions employed by central government authorities. The contrast between local problems and central government solutions could not be more striking.

Finally in considering the concept of sustainable development comparable relevance was given to the UK and European Union. The key question is whether sustainable

[3] T. O' Riordan, Environmental Science for Environmental Management (Longman Higher Education, July 1995), pp. 22-34.

development is of practical use in Thailand's diverse and complex economic structure? Serious doubts arise as to the effectiveness of applicability such as a concept of sustainable development in the context of Thai cultures and society.

A number of sources used in the thesis may be identified as following;

Documentary research: In the first stage of writing the thesis existing documents relating to the environmental law aspects of the exploitation of water resources and general back ground in Thailand were collected and studied. At the same time, problems arising from the implementation and application of laws concerning the water resources laws will be examined from both the substances of such laws and their enforcement. Resolutions to the problems can then be suggested.

Field research: after the documentary research was completed and suggestions made, the ideas and suggestions were examined based on observation not on the theory collected during fieldwork. Ideas, which can be implemented in practice and are capable of solving the identified problems, can be proposed for further study. The collection of data and the cases will be carried out using Thailand as the base. The Thai water case studies are addressed and carried out by interviewing persons involved in enforcing the law such as water users, government officials and environmental agencies, NGOs relating to water resources etc. conducted by the supervisor and researcher. The thesis does not confine itself to pure desk or library work. Field studies are undertaken, for example to ascertain the views of government officials and agencies. The latter still play an important role in implementing and enforcing certain environmental laws. The Environmental Agencies are interviewed and their judgements studied to find out to what extent they contained environmental provisions. A careful scrutiny of decisions rendered by government revealed that not one single case dealt with environmental matters. This observation is not meant to put blame on anybody, it simply proves that environmental

law cases have not come before the bench or the government. This is significant since it highlights Thailand's policy dilemma, the lack of environmental law enforcement even where appropriate and satisfactory legislation exists. Having completed the data collection from the documentary research, empirical methods and the case study, a critical analysis can be made of the major problems concerning water resources and suggested improvements and a revision of relevant laws can be made and alternative solutions suggested.

It may be concluded that from the beginning a number of themes and methodology framework exist in undertaking the thesis. The first theme is the rapid economic development in Thailand during 1960s- 1998s. This exponential growth was occasioned by a shift from import-substitution manufacturing to export-oriented industrialisation in the 1970s at the expense of its own environment and natural resources. The second theme is the concept of sustainable development and Agenda 21, which is the core of the thesis. To look at problems concerning implementation of the concept of sustainable development from the perspective of developing countries using Thailand as a case study. The last theme is an analysis of the case study of water resources and water conflict in Thailand. The thesis also examines some of the traditional approaches attached to the concept of sustainable development in Thailand such as local knowledge, Buddhism, animalism, which has played an important role in the environmental protection in Thailand.

Last but not least, the brief overview of methodology discussed above illustrates some of the key features of the case study approach because this research work is the first one in this field of law about water resources in Thailand. Furthermore, particularly in the Thai literatures, there have been less reports in the literature about water resources than in other areas such as air pollution or the management of hazardous waste and conservation

of biological diversity. It should be noted also that many of the best works in Thailand regarding the water issues have still to be translated into English. Most of literature reviews are limited to those already available in English.

In the final analysis it is hoped this thesis will provide an important foundation for future research. The underlying argument that emerges is that rapid development strategies must take account of local needs and requirements. The lessons for the study are clear: failure to relate new laws to the custom of the people will inevitably lead to failure.

Water resources and the environment: An overview

The topic water resources was chosen because of the pivotal role of water in the environment. As Howarth[4] explains: "...why water quality regulation has been a precursor for legislation governing the other environmental media, since in many instances the aquatic environment acts as a sink or repository for pollutants that are initially discharged into other media. Pollutants discharged into the air fall to the ground and are eventually washed into water and similarly, solid waste often generates liquid leachate, which percolates into ground or surface water. Water quality and aquatic ecosystems often serve as a barometer of the general state of the environment and certainly water legislation has served as a testing ground for principles subsequently applied to other areas of environmental regulation." At the onset some information and analysis is required setting out Thailand's water resources. It is clear that water resources in Thailand face an unprecedented crisis. In Thailand water resources are essential for life and the maintenance of the ecosystem. Water is a central medium for the development of an environmental strategy. Pure water is available in abundance in Thailand. Pressures

[4] W. Howarth, 'Self-Monitoring, Self-Policing, Self-Incrimination and Pollution Law', in The Modern Law Review, Vol. 60, No. 2. March 1997, p.203.

for its use include water for domestic usage and industrial use is increasing. Water is a major source of energy in Thailand. Various major and small hydroelectric schemes provide Thailand with an environmental friendly energy source in electricity. It is clear that there are major issues to be addressed in the planning, allocation and impact of hydroelectric schemes. There are some problems arising as follows: First, water resources face rising domestic demands for the use of a wholesome supply of water. Population growth over the past three decades especially in cities and towns require additional supplies of water. In addition water supply is driven by demands for industrial usage as well as for domestic supply. These demands must be met within the normal weather cycle. There is a particular water shortage in the dry season, flooding in the monsoon season and water pollution in the canals and rivers as well as land subsidence. Industrialisation and increases in urban population have contributed to put pressure on scarce water resources and management. It is estimated by the UN that in 1990 Thailand had less than 1500 cubic metres of freshwater per person and is among the countries projected to fall into the water stress category before 2025[5].

Water resources are substantially affected by the problem of deforestation. In 1960 about 54% of land in the country was covered by forest but in 1978 and 1993 the forested area amounted only 34.15% and 26.02 % respectively.[6] The most severe deforestation occurred between 1960 and 1978; the forested land lost was approximately 1,320,000 acres per year.[7] Although the government has tried seriously to tackle these water resources problems for a decade, water supply is lost to pollution and flooding forests

[5] P. LeRoy, 'Troubled Waters: Population and Water Scarcity', Colorado Journal of International Environmental Law and Policy, Vol. 6, 1995, p.310. Based upon these findings, it suggests specific thresholds of "water stress and water scarcity". Country water exceeds 1, 670 cubic meters per person per year will suffer only occasional or localised water problems. Below 1, 000 cubic meters, countries experience chronic water scarcity. When fall below 500 cubic meters, countries are said to experience absolute scarcity.

[6] Office of Environmental Policy and Planning, Ministry of Science, Technology and Environment,

every year. This is so, especially in the headwaters that are vital to the maintenance of the ecological balance of a river basin. The deforestation of the headwaters contributes to flooding in the wet season, water shortage in the dry season, soil erosion, and loss of soil fertility, river salutation, and the decrease or even the extinction of some wildlife and plants. In recent years, pressure has been growing on water resources in many regions around the country with increasing demand from the domestic, industrial and agriculture sectors as well as for disposal of industrial effluent and sewage. As the twenty first century begins Thailand is entering another era when water is to be recognised as an economic commodity and must be used more rationally protected from degradation and did not considered an unlimited resource. There is a problem of supply and demand over water resources in Thailand. Moreover, Thailand is steadily approaching a water crisis due to global warming with serious seasonal water shortages and heavily contaminated and depleted surface water and groundwater resources. Although it seems to have an ample total quantity of water resources to meet rising demands, adequate water may not be readily available to meet the growing demands where it is specifically needed and at the time of greatest demand. Therefore, the steadily growing demands for water are an issue of particular concern throughout the regions. Many of these environmental problems have a common cause which may be linked to the rapid growth of the economy of Thailand over the past decade.[8]Remarkably rapid expansion of the economy accompanied by a population growth has not only raised the standards of living of the people in Thailand but has also created in its wake problems of sustainability of water resources development. This is the paradox that faces all developing countries: expansion, creating jobs and wealth is often at a high cost to the environment.

(1999) Report of Environmental Quality Situations, 1997-1998, PP.2-3.
[7] Ibid., p. 3

Second, in addition to the depletion of water resources, Thailand also has to deal with water pollution. The quality of water in some major rivers has been degraded by waste discharged from factories, households, communities, farms, and transportation. This point re- iterates the central importance of water in the general environment in Thailand. A study of the water quality in four major rivers of Thailand during 1981-1990 carried out by the Water Quality Section, Environmental Quality Standard Division indicated that the four major rivers as well as their tributaries had been contaminated by increasing drainage of waste. It may be said that the quality of water in the rivers, particularly at their lower reaches is below standard and continues to deteriorate. The study of the Thailand Development Research Institute (TDRI) also indicated that in the major rivers industrial factories contributed approximately 25% of water pollution while the remaining 75% was caused by wastewater from household community. It should be noted that wastewater from the agriculture sector includes that from the household communities because agriculture in Thailand is mainly by individual farming. This is unlike industrial farming which is common in the UK or Europe. However, pollution from industrial factories comprises toxic substances and heavy metal, which are harmful to the public health. This source of pollution includes among other things, metal factories, and metal plating factories, repair and assembly factories, electronics factories and chemical factories. In sum the study of urgent solutions must include not only the control of wastewater from the industrial sector but also that from the household community and agriculture sector as well.

Apart from the quantity and quality problems, attention should also be given to the ineffectiveness of public sector organisations responsible for the utilisation, development,

[8] For example, see T. Chongpeerapien et al., Energy and Environment : Choosing the Right Mix (Bangkok, Thailand Development Research Institute, 1990).

management, administration and conservation of the water resources, particularly those having legal implications. Most community water supply systems in Thailand are managed by two state enterprises, the Metropolitan Water Authority (MWA) and the Provincial Water Authority (PWA). Over the past decade, MWA and PWA have made substantial strides improving their overall efficiency and performance (billing and collections, unaccounted-for-water and planning). However, water and sewage services and pollution control remain deficient. In the PWA service area demand will require a dramatic expansion of about 20% a year compared with past growth of about 12%.[9] PWA's major problem is a lack of experienced technical staff due to low salary levels those in the private sector are two to three times higher. Sector investment needs of about 15 billion Baht[10] a year will require substantial external or private-sector financing. Since environmental problems have become a very serious issue in the world, from holes in the ozone layer to the recycling of discarded cans, environmental issues affect us all at many levels.

Considering the current supply and demand of national resources,[11] Thailand has been facing a number of pollution problems as have been mentioned above. Amongst developing countries, the rate of economic and industrial growth in Thailand over the past few years has been one of the highest in the world.[12] This has brought with it numerous environmental problems. As set out in the table below Thailand's environmental crisis is clear.

[9] The World Bank, Thailand Sector Report: Increasing Private Sector Participation and Improving Efficiency in State Enterprises , (Bangkok, East Asia and Pacific Regional Office, October 11,1994) p. 23.
[10] Ibid.
[11] See more Arbrabhirama, Anat et al., Thailand Natural Resources Profile (Singapore, Oxford University Press, 1988).
[12] Asian Development Bank, Asian Development Outlook 1991(1991).

Table 1.1 Comparison of Growth Rates (In real GDP) of Asian Nations

	1987	1988	1989	1990	Average
Thailand	**9.5**	**13.2**	**12**	**10**	**11.2**
Korea	11.1	11.5	6.1	8.7	9.4
Singapore	8.8	11.1	9.2	8.3	9.4
China	10.6	0.8	4	5	7.6
Hong Kong	13.8	7.9	2.3	2.3	6.6
Malaysia	5.2	8.9	8.8	9.4	8.1
Indonesia	3.6	5.7	7.4	7	5.9
Philippines	4.7	6.3	5.6	2.5	4.8

Sources: National Economic and Social Development Board for Thailand Asian Development Bank (ADB) for other countries

Economic development and the environment in Thailand: An overview

As shown above, rapid economic development occurred in the past decades. Thailand's economic miracle, achieved through unprecedented growth in the 1980's, provided Thailand with prosperity and autonomy over its macro-economic policies. Thailand was one of the first economies in the Far East to experience high growth. The debt crisis in 1997 led to equally unprecedented economic depression. A resume bid of $ 17.2 billion was requested; the currency (the baht) fell by over 100% of its value to the dollar, foreign debts escalated to $ 89 billion and the country was for practical purposes bankrupt.[13]

Thailand's "bubble" economy became notorious with lessons for developing countries around the world and for other countries in the region. Of longer term significance was the implication that the economic disaster would affect Thailand's ability to exercise control over its own economic policies. The IMF and other developmental organisations[14] occupied a "colonial" position over Thailand's economy and exercised control over the "levers" of economic management.

[13] Ibid.,
[14] Ibid., see World Bank Report and monitoring on Thailand's Economy, pp. 23-45.

Once Thailand suffered economic recession the reverse of the trends noted during its growth years occurred. Population shifts from city to village began as people returned to villages after unemployment in the cities. During the period of economic prosperity, the population within cities increased in line with industrial growth. Following recession, a large part of the population returned to villages to find work. The figures are dramatic:

"... government figures showed that by 1998, 80,000 workers had been laid off since the middle of 1997.[15]"

Thailand's economic development began in the 1950's with World Bank support. Industrialisation, foreign investment from Japan and a broadening manufacturing base all contributed to Thailand's prosperity. Thailand's status as a "tiger economy" was, not only, because of its economic reputation, but also, its undoubted rapid development.

It is timely to write the thesis at the present time. The problem of environmental pollution caused by rapid economic development is very serious. Thailand is faced with challenges about its recovery and its future development. Repeating the mistakes of the past must be avoided at all costs. Increasingly economic development must be considered only in the context of sustainable development and an assessment of environmental strategies. In the aftermath of the "boom and bust" experience over the past two decades, the key question is *how should Thailand protect its most precious asset namely its environment*[16]? Sustainable development is defined in the thesis to mean that development that "meets the needs of today, whist not affecting the ability of future generations to meet their own needs[17]". The implications are that growth is necessary to

[15] W. Bello, et al., A Siamese Tragedy p. 3.

[16] As Alan Boyle and David Freestone explain in their recent book with environmental protection. Sustainable development is the most important strategies in the future development of the economy. See A. Boyle and D. freestone, International Law and Sustainable Development (Oxford, Oxford Press, 1999), p. 1.

[17] World Commission on Environment and Development, Our Common Future, the Brundtland Report (Oxford, Oxford University Press, 1987), pp. 1-23.

improve the quality of life, and that such growth should take account of protecting and conserving the environment and natural resources.

Since 1992, the Rio Declaration on Environment and Development has influenced lawmakers throughout the world. A core of international jurisprudence has developed with countries developing their own agendas for environmental protection. Additional developments since 1992 include Agenda 21 and the purpose of actual need for sustainable development. While there are general issues of accountability and how Agenda 21 might be developed for the future, it is clear that Thailand must address these issues as an integral part of economic development and its reconciliation with the protection of the environment. While internationalisation of environmental protection did not receive universal support in 1997 at the Rio II summit in New York there is a clear agenda for developing countries to learn the lessons of the West.

Challenges in understanding environmental protection in Thailand: A crisis in administration, planning and policy

Environmental awareness, even within developed countries, is a relatively recent phenomenon.[18] Environmentally sound policies are seldom the cheapest.[19] Especially, the legal problems concerning the environmental aspects of exploitation of natural resources. For the poorest of the poor among developing countries, the need to survive does not even allow a choice of strategy. Thus, the solution to an environmental problem in a developed country may not necessarily be applicable to Thailand. The sociological and geopolitical dimensions of the problem have also to be considered. Environmental

[18] It is similar to the other developing countries for example in Lesotho, Africa please see Witzsch, Guenter (eds.), Lesotho Environment and Environment law(Lesotho, Morija Printing Works, 1992) p.203.
[19] See Jones, Bryn, 'Environmental law-too little too late', in Lomas, O. and McEldowney J. (eds.) Frontiers of Environmental Law (London, Chancery, 1991), at pp. 68-74.

problems proliferate and their solutions became elusive in any society that has not yet achieved ***'sustainable development'***[20].

It was only in the early 1980s that Thailand began to take natural resources conservation and restoration seriously, judging by the environmental concerns expressed in the country's Fifth Plan (1982-1986). Under the Sixth Plan (1987-1991), Thailand adopted an integrated approach towards natural resource development and environmental protection, recognising the fact that environmental problem facing the country present severe constraints to the country's future economic growth. The Seventh National Economic and Social Development Plan (1992-1996) identified "environmental improvement for better quality of life" as one of its principle objectives. It focused particular attention on environmental management especially natural resource development, environmental quality and industrial and urban pollution. Thailand has adopted the strategy of sustainable development since the Seventh National Economic and Social Development Plan (1992-1996). These ambitious plans call for contributions from all sectors of the economy. Fundamentally, the Plan focuses on five major areas of environmental management policy: natural resource management, environmental quality, energy and environment, industry and environment and urbanisation and environment[21]. This Plan also brought about a major change in the legal and institutional arrangements governing environmental protection. But there were a lot of criticisms about the Plan. It is said that emphasis is being put on sectoral planning. In other words, there is no actual integration of plans concerning different natural resources and environmental protection.

[20] The future strategy for the environment is sustainable development. For instance, in January 1994 the UK government embarked on a national strategy for sustainable development, the UN Commission on Sustainable Development hold a meeting during May 1994 and the European Community's Fifth Action Programme provides a framework for action on sustainable development. See UK Annual Report: *This Common Inheritance,* Cm 2822(HMSO, 1995); see also J. McEldowney and S. McEldowney, Environment Science and Law(London, Longman, 1996), chapter 14, p.294-295.

This kind of natural resources management and environmental planning has been followed by government agencies at national level all the way down to local administration. This management and planning system is not able to effectively tackle the depletion of natural resources and environmental degradation[22]. Until now, the problem of integrating natural resources management and environmental planning remains to be solved.

The current Eighth National Economic and Social Development Plan (1997-2001) focuses two main objectives as first, to use natural resources together with improving it, second, to manage natural resources and environment effectively for the balance of both ecology and environment. The Plan also identifies three strategies which would contribute to achieve the objectives as first, to restore and improve the natural resources and environment, second, to promote public participation, third, to administrate and manage natural resources and environment. Consequently, Thailand has tightened up its environmental regulations. It seems that Thailand wants them all to work together, the development, the environment and social improvement. With rapid industrial development and economic growth, the problems of overuse of natural resources and pollution have been increasing for the last ten years this mean the government's policies about the development as well as the environment have failed. Understandably, there are important differences between the developed and developing approaches towards a better environment, reflecting the wide gap in terms of their economic development. Since environmental protection competes with other policy objectives for scarce resources, there are opportunity costs and these costs are particular high for developing countries

[21]TGCE, 'Thailand National Strategy for Sustainable Development' in Thailand National Report to UNCED 1922, op cit., pp. 11-26.

[22] A. Wongbandit, Thai Environmental Law and the Protection of Global Environment, A Paper presented to the 7th General Assembly and Conference, Asean Law Association, Kuala Lumpur, Malaysia, December, 1995.

which have more pressing needs. It is basically a question of a trade-off between a pollution free environment and economic goods.

Finally, it is worthwhile to consider how the analysis presented in the thesis might take the debate about Thailand's future development a stage further. The lessons to be learned from the past mistakes and crisis over the previous three decades should inform the future. As Thailand's creates the economic environment for development and growth it should consider the cost to the environment. Addressing the environment today will preserve Thailand for future generations to come.

Chapter 2 Thailand's Legal System and Environmental Law

Introduction

This chapter provides an introduction to the legal system and legal profession in Thailand. As explained above in the previous chapter, an understanding of the legal system provides the background and explanation of how environmental issues may or are expected to become the subject of litigation in Thailand. The question addressed in this chapter is: What role, if any, does the legal system have in regulating the environment? The traditional assumption underlying most environmental law is that the legal system will provide the means to enforce the law. This assumption is readily accepted in Thailand. The Thai legal system is founded on the civil law tradition. Many statutes and codes exist which comprise the basic law of Thailand. However, as will be outlined later in the thesis, behind this formality lies customary law. The culture and understanding of the Thai people is a forgotten and often overlooked dimension in legal analysis. In fact it will be shown that Thailand's environmental disputes are often the subject of informal and customary methods of dispute settlement. The evidence for this assertion is to be found in chapter 7 covering the case studies undertaken of water disputes that show how the formality of legal disputes is not used and settlement is reached on an informal basis.

Thailand's Legal System

It is important to provide for the reader who is unfamiliar with the Thai legal system an explanation of its basic organisation and outline. The early foundations of the legal system in Thailand belong to Thailand's agricultural past and are to be found in the feudal and agricultural basis of Thai society. This is reflected in the organisation and

structure of the courts and the procedures necessary to make an application for judicial review.

Thailand is unique among other Southeast Asia countries in having its own written constitution and a codified or civil law system.[1]It is also one of the first countries in the region to develop its own distinctive Environment Agency and Environmental Law[2], strongly influenced by the North American experiences and to a lesser extent Europe. The law on the environment is treated the same as legal rules in general. An analysis of environmental law is provided in chapter 5 and 6.

History (AD 1238-1938)

Thailand's[3], rich legal history and system of law and justice has given rise to a modern legal system that today functions relatively smoothly. The ancient origins of Thai law may be found before the Sukhothai Period (AD 1238-1350) and were influenced by the Hindu Code of Manu.[4] With the discovery of a stone inscription from the Sukhothai period bearing part of an enactment of an unmistakable Hindu origin, it would appear that the Hindu jurisprudence must have formed the basis of the ancient Thai legal system

[1] Japan's Constitution is also an Anglo-American tradition written law apart from Thailand, see Sucharitkul, ' Kingdom of Thailand', in Blauatein & Flanz(eds.), Constitutions of the Countries of the World (1993).

[2] K. Kato, 'Legal Frameworks for Environmental Governance in East and Southeast Asian Countries', in Environment Series No. 47, (Hawaii, East-West Center, 1996), pp. 14-16.

[3] To appreciate the development of the legal system, it is useful to understand the true meaning of the word 'Thai' which 'free'. The Thai people have been free for centuries. The fact that Thailand has never been colonised influenced the direction of Thai law. In Constitution of the World in 1973, supra note 1., "The Thais (free people) date back 5,000 years to tribes in Altai mountain range in Western Mongolia. According to the legend, the Thai people moved south of Huangho and the Yangtse River in China one thousand years later. During this period, the Thais united to form an independent nation ruled by its own King. Thailand, formerly, 'Siam' has been independent since that time."

[4] S. Sucharitkul, 'Thai law and Buddhist law', (1998) American Journal of Comparative Law Vol. 46, 69-86.

during or even before the Sukhothai period.[5] During the Ayutthaya Period (A.D 1350-1767) the modified Code of Manu, called *Dhammasattham*, along with the *Rajasattham*[6], which are rules developed from the actual decisions of Kings in administering justice, formed the Thai legal system.

After the fall of Ayutthaya, to the Burmese invasion of 1764, a Royal Commission[7] was appointed by King Rama I (A.D. 1782-1806), the founder of Bangkok, to revise the law of the land. The revised Code of 1805 commonly known as the 'Law of the Three Great Seals[8]' contained both the *Dhammasattham* and the royal decrees and edicts. It remained in force until the reforms under Prince Rabi of Rachaburi[9]in the early 20th century culminated in the Civil and Commercial, Civil Procedure, Criminal Procedure and Penal Codes based on modern (i.e. European) principles. Clearly, the influences of the French and German legal system may be found in the Codes that are today the modern law of Thailand. This is explained by the influences that were important in the Thai legal system. A continental sense of formal legal rules that are enforceable in the Courts permeates the legal culture of Thailand.

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[5] See also Tanin Kraivixien, 'The legal system', in Thai Bar Association, The Administration of Justice in Thailand (Bangkok, Siva Phorn Ltd, 1967)pp. 1-11, at 1.

[6] The *Rajasattham* was set of rules which developed from the actual decisions of the former kings in administering justice. The *Dhammasattham* was fundamentally a law of individual liberty and private rights dealing with both civil and criminal matters.

[7] It was set up in 1797 and consisted of a number of prominent members of legal profession both Thai and foreign. The commission was presided over by the Minister of Justice, Prince Rabi of Rachaburi.

[8] Ishii, 'The Thai Thammasat', (1986) Law of Southeast Asia Vol. 1, 143-203.

[9] Prince Rabi of Rachaburi was one of the sons of King Rama V, the Great (1868-1910). He was educated and graduated from Christ Church College, Oxford University. He has been acclaimed as the Founder of modern Thai Law. In addition to being the leader of the general law reform at the end of the last century, it was him who set up the law school under the Ministry of Justice in 1897. He was a legal scholar of first rank and became the first director of the school. His pioneering works in some branches of law were marked by an extreme lucidity of expression and depth of reasoning which made them models of their kind and some have remained authorities to this day.(See also W.A. Graham, Siam (London: Alexandra Moring, 1924) Vol. I, pp. 372-373.)

It is important to underline some influences prior to the 1850s[10] before Thai society changed from its agricultural past and embraced the industrial present. A group of nobles comprised Royal influences that dominated the class structure of Thai society. The nobles drew their wealth from their control of labour and land while the majority of the population could be described as peasantry. It may be concluded that the traditions of the Thai legal system were formed from an agricultural and feudal system.

Between AD 1910-1925, although never colonised by European powers, Thailand in the 19th century, (then Siam), did pay a price for its independence allowing its sovereignty over resident aliens to be infringed through a series of bilateral treaties so-called "*the Extraterritoriality*". Under these treaties, foreigners and their dealings with the Siamese[11] and other foreigners were subject to legal challenge only in Consular Courts and/or the International Courts. The Domestic Courts were not open to foreigners who litigated. The Western powers of the day were not satisfied that their subjects could receive justice in Siamese Courts under the *'Law of the Three Great Seals'* which on occasion settled disputes or determined innocence in criminal proceedings through trial by ordeal, for example by fire or water torture and other techniques to determine pain thresholds and tolerance of physical abuse. Suspicion of foreigners remained and this

[10] G. Rodan et. al., The Political Economy of Southeast Asia (South Melbourne, Oxford University Press Autrialia, 1998), p. 98.

[11] Muang Thai as translated into English "Thailand" was used in the Bowring Treaty of 1855(See Bilateral Treaties and Agreements between Thailand and Foreign Countries and International Organisations, Vol. 1 (1617-1869), 23-81, 1968.) in its original draft but was replaced by SIAM in its final text. Thailand is a geographical derivation of the ethnic groups known as the Thais whereas "SIAM" is originally a geographical areas of which the derivative word "Siamese" refers to the inhabitants of that territory and is often used as an adjective pertaining to Siam including the language used.

layout endures today.

It was twice in the judicial history of Thailand foreign nationals received extraterritorial rights granted to residing in the country through treaties which Thailand concluded with Foreign Powers. First in the 15th and 16th centuries, Thailand came into contact with Europeans during the Ayudhya period. King Rama Thibodi II (1491-1529) was the first king to receive a European envoy namely that of the Portuguese who arrived at Ayudhya in 1511. Thailand then concluded its first treaties with them. Other Europeans came soon thereafter. Under a series of treaties Thailand concluded with the Western Powers, the Europeans enjoyed certain extraterritorial rights. However, after the revolution of 1688, which was a result of their own intrigue, the Europeans in Thailand suffered. Foreign trade came to a virtual end. The extraterritorial system ended with the banishment of Europeans from the country. The second period in judicial history begins early in the nineteenth century. Friendly relations with the West were reopened after the dismal failure of the past. The treaties first concluded with Great Britain and the United States in the reign of King Rama III were on the basis of absolute reciprocity. However, through a series of treaties with foreign Powers made during the reign of King Rama IV (1851-1868) the system of extraterritoriality was once again introduced. These treaties greatly affected the sovereignty of the country and undermined its very existence as an independent state because the nationals of the foreign Treaty Powers together with the so-called protégés of these powers were removed from the jurisdiction of the King's Court. This system not infrequently caused injustice to Thai citizens wronged by foreign nationals as the latter were only amenable to their own Consular Courts in which their

own particular laws were administered. The Consular Courts developed under this system were numerous. The extraterritorial rights under these treaties were gradually modified through subsequent treaties especially during the reign of King Rama VI (1910-1925). During the transitory stage a court system known as *the International Courts* composed of Thai and European judges took over the jurisdiction of the Consular Courts of some foreign Powers under their later treaties with Thailand.[12]

At the turn of the 20th century, Prince Rabi of Ratchaburi one of the sons of King Rama VI of Thailand(Siam as it then was) introduced many reforms to the Thai legal and court systems. Thailand (then still called Siam) adopted a European system of jurisprudence including the organisation of Thai courts and its legal procedures. Coincidentally, this also followed the period at the middle of the nineteenth centuries when Japan came under German and French influences. In modernising the law, Thailand would have preferred to adapt English law because many distinguished members of its legal profession had been legally trained in England and had become well acquainted with English law. They had seen the merits of the English common law system and what it had achieved in its motherland and in other parts of its empire. Moreover a branch of the English law had already been introduced namely the commercial law. Thus where there was neither Thai law nor custom applicable to any commercial matter English law was applied. On the other hand, the law reformers thought it was equally true that however excellent the English system might be, it was peculiar to the English circumstances in which it had originated and developed. Because English law was

[12] See also T. Kraivixien, Op.cit, pp. 14-15.

uncodified it seemed most impracticable for any country to adopt a system of law that could not be found in any accessible form.[13]Therefore, English law is to be found only in certain branches of Thai law such as the laws of Bills of Exchange and Bankruptcy. These are areas where the English influence remains strong. Thailand, in matters of general law reform turned to the Continental tradition of codification including the leading principles of Roman jurisprudence set out in a logical form and with a scientific arrangement.[14]The continental jurisprudence retains its influences in Thailand today.

After the First World War, the USA took an important step in abandoning her extraterritorial rights in Thailand. All-American subjects in the country were made completely amenable to the Thai laws and the King's Courts by the treaty of 1921. The subjects of other western powers still continued to enjoy, though to a limited extent, their extraterritorial rights.

Finally, adopting the law reforms in accordance with western jurisprudence, Thailand was able to put an end to the extraterritoriality by a fresh international instrument negotiated on a basis of full reciprocity in 1937 and 1938. The jurisdiction of the King's Courts has since then been completely unfettered and is open to all foreign nationals.

After the revolution of 1932 and a constitutional form of abolished absolute monarchy, elected government was introduced. Gradually, absolute monarch gave away

[13] See also T. Kraivixien, Op.cit, p.4. This is a common analysis about the adoption of English law in Japan. For example see H. Tanaka, The Japanese Legal System , (Tokyo, University of Tokyo Press, 1976), pp. 254-313.

[14] King Rama V made the decision the great. Please see also A. Jantarasomboon, 'The French influence in Thai legal reform'. P.17 paper presented at Seminar 300 years relationship Thailand-France at Department of History, Faculty of Humanity, Ramkamheang University, 14-15 December 1987.

to a constitutional monarchy.[15]Since 1932, under a series of Constitutions the role of the independence of the judiciary has been achieved. Under the provisions of these Constitutions, the courts are duly established by law and in the name of the King exercise an independence the judicial power.[16] Today, judges are assured complete independence in conducting trials and delivering judgements according to law.

It must be emphasised that the early origins of Thai law have been traced back by legal historians to three general sources: Thai Customary Law, Buddhist Law, and Chinese/Maritime Law.[17] During the Lanna Kingdom period of Thailand's history, which began in the year 1296 AD, the influence of Buddhism on secular law was particularly strong. Royal Decrees and judgements frequently made direct comparisons between state law and religious texts. Similarly, the Buddhist influence also manifested itself through the use of monks as the official scribes and chief scholars for the Kingdom. Aspects of the Vinaya, a religious text that originally was a code of conduct for the guidance of the Sangha (monk) community, were also the source of much secular law.[18] The process of reformation and westernisation of Thailand's legal system occurred primarily during the period between 1880 and 1930. King Rama V, also known as King Chulalongkorn, initiated the process of reformation by enlisting the aid of foreign legal experts from such countries as England, Belgium and Japan, to work in conjunction with the Thai Ministry

[15] It was believed that it mainly based on the British parliamentary government system.
[16] It is worth noting that although the King is no longer the Supreme Judge of the land in his own right, he has retained the Royal Prerogative of Mercy, i.e. the power to pardon offenders from all or some of the penalties imposed upon them by the Courts with criminal jurisdiction and the power to commute such penalties to less severe one.
[17] A. Huxley ed., Thai Law: Buddhist Law, Essays on The Legal History Thailand Laos and Burma (Bangkok, White Orchid Press, 1996), p.16.
[18] Ibid., pp. 31-36.

of Justice. The reformation committee, thus formed, decided to rely primarily on the Code System of Law (also known as the Civil Law System), because of its simplicity, clarity, and ease of organisation. The committee decided to retain certain aspects of the Common Law System as well.[19] Current Thai law is thus a combination of the Civil Law System, Common Law[20] and Thai Traditional Law. This eclectic legal heritage has affected the way the modern Thai legal system approaches extraterritorial application of foreign laws within their state, and against their nationals.

The Current Thai Legal System AD 1938 - to the Present

Modern Thailand is a democratic constitutional monarchy that has recently adopted a new Constitution in 1997. This provides for a wide range of civil rights, including the right to privacy and the right to be free from unreasonable searches and seizures. Since Thailand relies primarily on the Civil Law System, the decisions of Thailand's Courts do not have precedential weight, except for the decisions of their Supreme Court, which are considered a secondary authority. Royal authority while under current Constitutional arguments is subject to democracy and is very much an influence on Thai society. Countries such as Thailand that exist on the narrowest of margins between military and democratic systems, often depend on Royal influences to maintain the balance in favour of a democratic country. The King and Royal Family play a significant role in environmental protection in Thailand. Thailand is a constitutional monarchy, with the

[19] T. Kaiwichain, Law Reformation in the Period of King RAMA V (Bangkok, Office of the Prime Minister, 1968), pp. 6-21.

[20] The "Common law" system derives its heritage primarily from England and relies on judicial decisions to comprise the body of its law rather than strictly legislative enactment. See Black's Law Dictionary, 6th ED, p. 276.

King as Head of State. Given this special position as Head of State and upholder of Buddhism and other religions, the King is in a unique position to promote the use of Buddhism, animism, and local knowledge for environmental protection, which both he and other members of the Royal Family have done.

It is useful to provide an outline analysis of the current Thai legal system. It must be remembered that over the past two decades Thailand has undergone considerable constitutional changes.

Thailand has a civil law system involving Codes and Statutes, in common with other Code Countries[21]. Thailand is a follower of civil law concepts. For example in the law of contract, there is no doctrine of consideration required in contracts and the Trust as a legal form are not allowed. Equity is not separated from law nor does it have that name. As noted above, the doctrine of judicial precedent does not apply and there is no jury system in Thailand. Discovery procedures are not yet a part of the legal environment. Disposal of cases through summary, preliminary or interlocutory methods is rare. It is almost unheard of to obtain restraining orders and preliminary injunctions or writs of mandamus quickly. Prescription periods (statutes of limitation) are based on the nature of the claim or identification of the claimant and vary from 6 months to 1,2,5 and 10 years. Thai conflicts of law are governed by special statue. Liquidated damages and punitive

[21] Germany, France, Italy, Switzerland, Spain, Belgium, Holland, Japan, Mexico are also *CODE COUNTRIES* with their legal systems being offspring of the Code Napoleon. The US, UK, Australia, Canada, Singapore, Malaysia and other countries with an Anglo-Saxon legal tradition are common law systems or judge-made law system. Both systems are rooted in ancient Roman law. See also McEldowney and McEldowney, Op.cit., p.15

damages are unfamiliar subjects. The state cannot be sued while administrative units that make up the executive branch of government can be sued.[22]

Given the growth and sophistication of Thai business communities which are a recent phenomenon, the law has been show to respond. The Thai courts have traditionally not had to deal with complex commercial, banking, financial, tax and trade issues and techniques which Anglo-American and other Western lawyers take as common place because the traditions of the Thai legal system were founded for civil law tradition. This means that in the early days of the formation of the legal system, the past agricultural and the past feudal system set the scene for how the Thai legal system developed while normally dealing with only very simple cases. Currently the Thai legal system is under review and modernisation to meet the needs of current business and commercial users. International pressures are evident in the demands for reforms.[23] The enactment and implementation of law in Thailand is outlined in Fig. 1. At the turn of the 20th century, Thailand's adoption of a European system of jurisprudence, organisation of Courts and legal procedures are self-evident.[24]

Over the years, Thai law has naturally taken on its own Thai identity on legal rules, legal procedures, and legal institutions. Nowadays, Thailand has its own identical legal system.

[22] It should also note that HM the King and HM the Queen are immune from any type of lawsuit.
[23] J. W. Leeds, 'United States International Law Enforcement Co-operation: A Case Study in Thailand', (1998) Journal of International Law and Practice Vol. 7, pp. 1-14.
[24] Influence countries include Germany, France, England, Japan, Italy and India in both laws and legal practices especially the Japanese model in business law. It was believed that the structure of civil law were translated and copied from Japanese laws. In addition to this, from Indian laws it may be seen that even today some Islamic laws and practices still exist in 4 southern provinces.

Fig. 1. Proposing Legislation Flow Chart

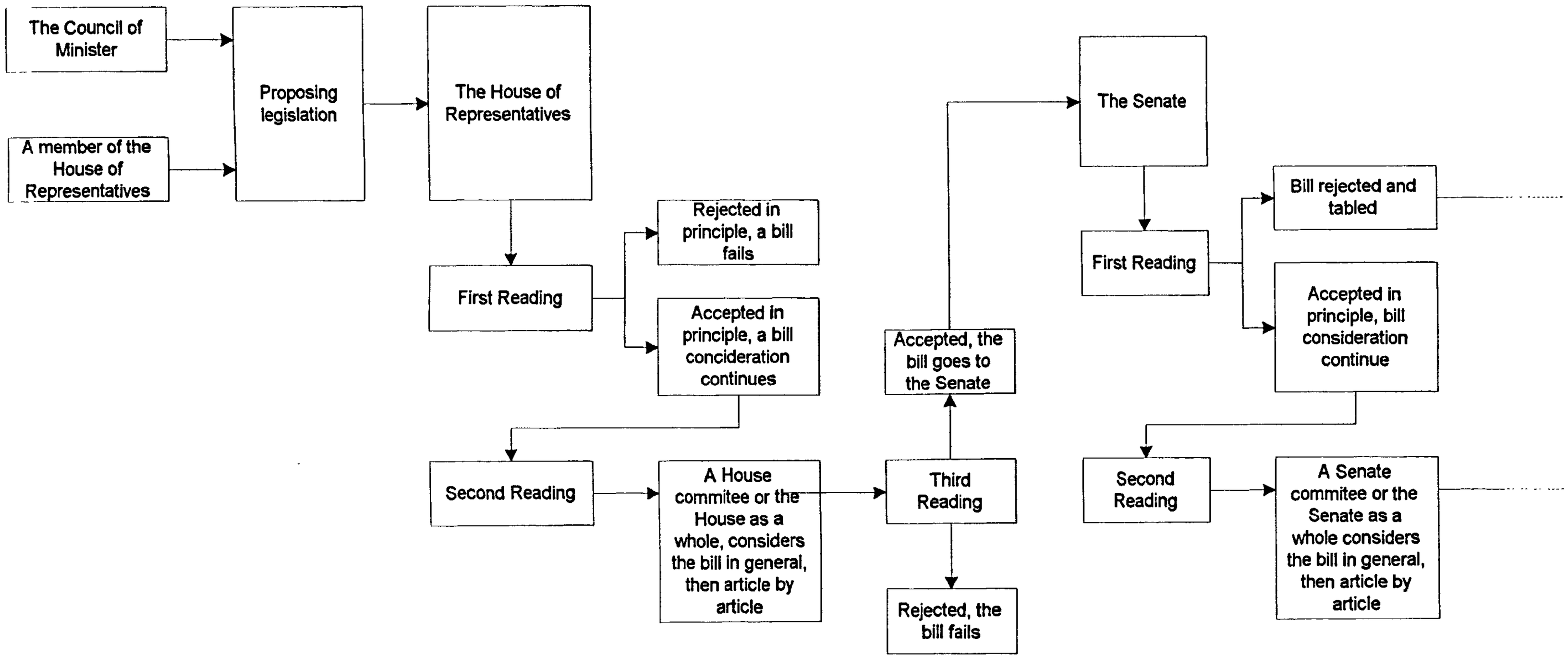
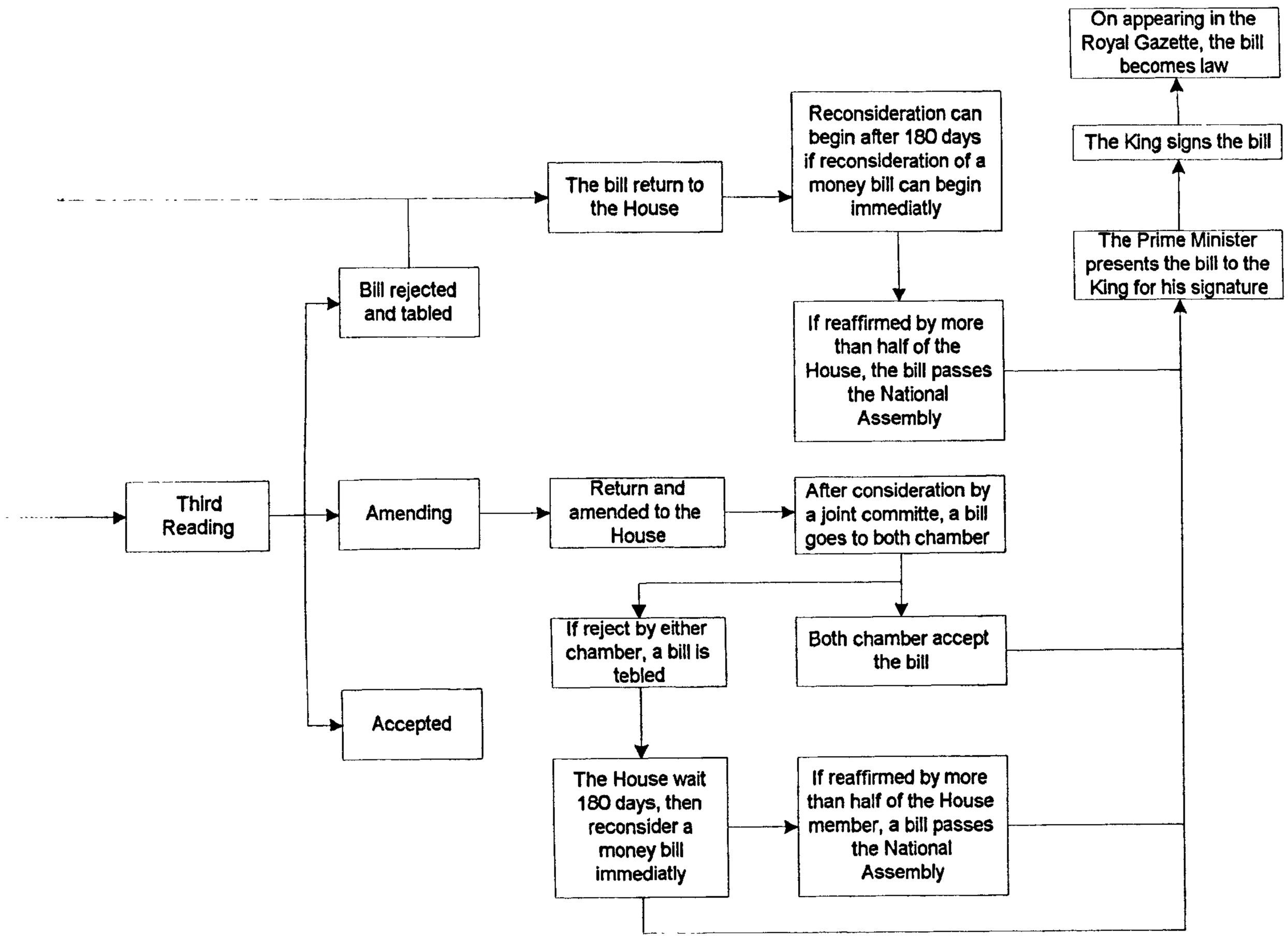


Fig. 1. Proposing Legislation Flow Chart (Continue)



Environmental law and Environmental Protection in Thailand

It is important to realise at the outset that in Thailand, there are remarkably few environmental cases that appear before the Courts. There are a number of reasons for this. In traditional judicial decisions in Thailand, proof of damage is required to create the requisite legal standing to bring an action. In individual cases, citizens have a right to claim damages or compensation from the State[25] but it is very difficult to provide a proof of damage especially in environmental cases. The involvement of NGOs or pressure groups provides a role as they may represent the environmental rights of individuals and a society as a whole. However, unfortunately pressure groups in Thailand are fragmented, scattered and uncoordinated. Only a few major NGOs have consistently pursued environmental objectives. Cultural considerations have much to do with enforcement problems of Thai environmental law. Thai society is reluctant to resort to litigation. *"The Thai way"* is a good explanation of this phenomenon when addressing environmental issues. There is an acceptance and at times an approval of projects which may later be regarded as environmentally harmful. The "stoic" attitude to problem solving has its roots firmly in the Thai culture and tradition. The lack of funding, inadequate legal aid, delays, complicated procedures, and a complicated legal process are factors which affect the practicality of litigation of environmental issues in Thailand. Finally, environmental problems have not attracted much public attention until recently. With only exceptional cases[26], few lawsuits related to environmental issues are filed in the Court. Where they exist, they are usually limited to civil liability suits. In

[25] The 1992 Act, Section 6(2),

[26] For example, *in Panat Tasneeyanond and others v. The Prime Minister, The Minister of MOSTE and the Director-General of the Inland Revenue Department.* The case had been brought against the Government with respect to its decision to use a piece of wetland in Bangkok for constructing governmental building. And in *Magic Eyes (NGOs) v. BMA (Bangkok Metropolitan Authority)*, the case sought to require the government to share information concerned with the Bangkok sky-train project.

most cases, environmental disputes are resolved through governmental or environmental agency intervention in the form of friendly persuasion, administrative guidance, mediation or arbitration. A further explanation and one that is advanced in the thesis, is that Thailand's environmental disputes have found a different means of solution other than formal legal procedures. The case studies on water conflict outlined later in the thesis provide evidence of dispute resolution depending on informal, local and non-legal rules to provide a settlement.

Why has formal environmental law in the courts had such little impact on Thailand? One explanation lies in the agricultural sector which was the main driving force behind the Thai economy before the 1970s which was replaced by the manufacturing sector in the 1980s and in 1991, the latter accounted for more than three quarters of Thai's export earning. Thailand's new status as one of the most successful of the Newly Industrialised Countries (NICs) has changed perceptions about the environment. With the substitution of an industrial economy for previous agricultural economy, Thailand is encountering various environmental problems resulting from too rapid industrial and urban development. This was unplanned and unsystematic. Thailand's position as an increasingly industrialised country led to the development of public controls specially related to environmental protection. The most significant provisions were developed in response to public health problems in the late twentieth century, culminating in the landmark Factory Act 1950 in response to growing concern for environmental degradation to promote better environmental management. As in the preamble of the Act, it states "...because the state is beginning to pay more intention to the environmental impacts of its economic development resulting from the rapid industrial economy". This Act proved to be virtually unenforceable in practice later on. Thailand also introduced the provision of a Public Health Act in 1975 because the government launched the Third

National Economic and Social Development Plan (NESDP 1972-55) as environmental considerations entered for the first time at the government's policy level. In addition to these public controls, the law of nuisance and torts was developed in the Civil and Commercial law Code of 1946 as a means of providing private redress for general harm including environmental purposes. Thailand did not enact its primary conservation and pollution law until 1975. As part of the implementation of the NESDP(above), the Enhancement and Conservation of National Environmental Quality Act was enacted in 1975(hereinafter NEQA-1975). The Act established the National Environment Broad (NEB) and for the first time laid down a requirement of Environmental Impact Assessment (EIA) for projects of certain types and sizes. During this period, the Industrial Environment Division and the Factory Inspection Division within the Department of Industrial Works were set up in 1975 and 1977 respectively. The Industrial Estate Authority of Thailand (IEAT) was also set up in 1972. The EIA (above) proved largely to be ineffective in practise terms.

Another explanation about environmental protection and environmental law is that the discussion about the environment has never been an important political issue during the peak of the industrialisation/urbanisation process in Thailand being actually a phenomenon of the 1980s. Only in recent years has there been some incipient social mobilisation around conservation proposals which constituted the genesis of an ecological awareness still limited to the middle class. Some groups and NGOs have tried to bring the ecological discussion forward but they are not yet significant in the country's political scene. Having very restricted working conditions, they have limited scope for involving larger segments of the population. As a matter of fact, there has never been a proper political treatment of the environmental question by most of the existing socio-political agents and therefore its political character has always been minimised if not

ignored. NGOs, popular movements and other social organisations have not yet paid enough attention to the ecological dimension of the socio-economic process and in general they have little to propose about the matter.

Nevertheless, the increasing importance of the existing conservation groups cannot be dismissed. They made noticeable success in securing some political gains and for the enactment of environmental legislation in the country. The extent of their importance can be measured by a brief analysis of the new Constitution of 1997 in which some section is dedicated to environmental protection in addition to several other precepts relating to the matter.

The Constitution making process was preceded by the largest social mobilisation on the issue. This was a remarkable achievement in the history of Thailand which produced the popular amendments on environmental protection signed by thousands of people, many organisations and presented to the Parliament representative. Constitutional amendments including environmental protection were eventually approved by the Constituent assembly.

The most recent Constitution of Thailand (1997) was drafted and newly adopted in 1997. It was the first since the overthrow of royal rule in 1932 that the Thai people were really involved in drafting and participating. It is known as the 'People's Constitution.' For the first time, it establishes in law a citizen's right to sue the State. This is to be found in Chapter I: Rights and Liberties of Thai People Articles 46 states:

"Persons so assembling as to be a traditional community shall have the right to conserve or restore their customs, local intellect, arts or good culture of their community and of the nation and participate in the management, maintenance, preservation and exploitation of natural resources and the environment in a balanced fashion and persistently as provided by law."

Articles 56. states:

"The right of a person to give to the State and communities participation in the preservation and exploitation of natural resources and biological diversity and in the protection, promotion and preservation of the quality of the environment for usual and consistent survival in the environment which is not hazardous to his or her health and sanitary condition, welfare or quality of life, shall be protected, as provided by law.

Any project or activity which may seriously affect the quality of the environment shall not be permitted, unless its impacts on the quality of the environment have been studied and evaluated and opinions of an independent organisation, consisting of representatives from private environmental organisations and from higher education institutions providing studies in the environmental field, have been obtained prior to the operation of such project or activity, as provided by law.

The right of a person to sue a Government agency, State agency, State enterprise, local administration or other State organisation to perform the duties as provided by law under paragraph one and paragraph two shall be protected."

Articles 56. provide the right of citizens to sue the government agencies or related authorities in matters relating to the duty or obligation concerning State actions. It does specially guaranteeing the project that has impact on environmental issues must have EIA before approval accordance to the law. It provides a right of citizens to participate and to engage in the use of natural resources and biodiversity with the need to preserve natural resources and environment.

Moreover, in Chapter V: Directive Principles of Fundamental State Policies Articles 79 also noted:

"The State shall promote an encourage public participation in the preservation, maintenance and balanced exploitation of natural resources and biological diversity and in the promotion, maintenance and protection of the quality of the environment in accordance with the persistent development principle as well as the control and elimination of pollution affecting public health, sanitary conditions, welfare and quality of life."

Articles 79 merely require it as a matter of policy, to promote the people to be participated in preserving, maintaining a balance and using the natural resources and biodiversity with the persistent development principle including prevention and control of

pollution that affects health, standard and quality of life of its citizens. These provisions aim to give guidance to the state in the conduct of governmental policies.

To sum up, according to the new Constitution, the State is responsible for the preservation, restoration and management of ecological process in general, the definition and regulation of conservation areas, the requirement and analysis of EIA as well as for the control of production, trading and employment of potentially harmful techniques and substances. Moreover, the State is now constitutionally responsible for the promotion of environmental education, protection of fauna and flora, monitoring of the projects of re-composition of degraded areas and for the repression of harmful and illegal activities particularly through the establishment of criminal, civil and administrative sanction. More than ever, the legal picture is well conceived being clearly and unequivocally formulated. Conceptions, instruments and resources are well defined and the distribution of responsibilities between the state and society as well as satisfying basic claims of conservationist movements. The above Constitutional changes provide a remarkable achievement in providing a judicial solution to address Thailand's environmental problems.

Such a national system with a centralised control of problems was very much typical of governmental administration in many developing countries in this period. They are typical of most public health and environmental protection planned to be at a central level instead of at a local level. However, this approach is problematic. This has resulted in multiple agency involvement, overlapping jurisdictional mandates, lack of co-ordination and vague laws that impede efforts to protect the environment in Thailand. In these formative years, law making tended to be *ad hoc* in the extreme. As a result, environmental law has traditionally been split into a number of statutes, many of them covering much other material with little to do with environmental protection. A study by

a Bangkok law firm, Tilleke & Gibbins showed that Thailand had no less than seventy environmental related laws but none were essentially aimed towards environmental protection.[27]One reason for this fragmentation was the absence of parliamentary time provided by the government of the day, fuelled by the perceived lack of importance of environmental issues. This is undoubtedly changing rapidly as the political importance of environmental protection has grown immensely in recent years. One effect of this long and unplanned history is that modern Thailand has inherited a far less coherent system of pollution control than many Asian countries. The same historical factors also explained the relatively large number of agencies dealing with environmental matters although recent changes in institutional responsibility have significantly improved matters in this respect. There is also a question of fragmentation through local environmental problems being addressed at a local level. It is remarkable that despite a civil law tradition in terms of environmental law that this fragmentation exists.

Thailand undertook a major overhaul of domestic environmental legislation in 1992 when a series of laws was enacted to promote better environmental management. These are the 1992 Act, the Factory Act 1992, the Hazardous Substances Act 1992, the Energy Conservation Act 1992, the Public Heath Act 1992 and the Wildlife Conservation Act 1992. These new laws reflect the fact that after a period of rapid economic growth, Thailand is beginning to pay more attention to the environmental impacts of its economic development. The new laws have therefore been aimed at improving the efficiency of environmental management practices.

Environmental law in Thailand must be examined in the context of the Thai legal system. To the reader unfamiliar with the Thai legal system, it may be fair to ask what is

[27] D. L. Tookey, 'Southeast Asian Environmentalism at its Crossroads: Learning Lessons from Thailand's Eclectic Approach to Environmental Law and Policy', in Georgetown International Environmental Law Review, Vol. 11, pp. 307-362.

the role, if any, for the Thai legal system in regulating the environment? An understanding of the present environmental law requires some understanding of its history. Not surprisingly for such law as Thailand is one of the highest populated country in Southeast Asia, environmental controls have a long history, tracing back to the middle ages (Sukhothai or Ayutthaya period) the statues on small scale pollution. In more modern times most Thai people have seen environmental law as becoming increasingly important. This is a relatively recent discovery because in the past up until the late 1970s most Thai people were more concerned about the protection and ownership of private and common property

Structure and organisation of the Courts

Despite the absence of many environmental law cases in the courts in Thailand, it is relevant to provide an outline of the judicial system in Thailand by way of explanation of the Thai legal system, process and procedures. In this explanation lies one of the clues as to why so few cases go to Court. Delays, complexity and technical procedure in civil and criminal process are common in Thailand's legal system. Under the present system, the Courts are divided into three categories:

(1) Courts of First Instance[28]

This is the first level in the court system where trials actually take place. The Courts of First Instance (i.e. Provincial Courts) have more than 1,000 judges sitting on Civil Courts of First Instance and other judges sit on Criminal, Labour, Tax, Juvenile and Military Courts. Provincial Courts have original and general jurisdiction and are found in all but the minor provinces.

[28] There are a series of new special courts of first instance of limited jurisdiction, which play an increasingly significant role in Thai life. e.g. *Labour Court* for labour disputes, *Tax Court* for tax disputes, *Juvenile Court* for matters involving children and *Military Court* in times of martial law and for courts martial. Progress is being made now towards the establishment of an *Administrative Law Court* as the Thai Civil Service is beginning to recognise its value.

Bangkok with its role as the nation's capital and the size of its population has several Civil Courts and Criminal Courts which have unlimited jurisdiction throughout the country. In practice, these major courts defer to the Provincial Courts rather than usurping the local authority.

Some districts may have additional limited jurisdiction first level courts called 'Kwaeng' or District or Magistrates' courts. This is common in few of the more populous provinces and in Bangkok. These Magistrates' Courts handle minor crimes and civil matters. The primary function of these Courts is to deal with small cases quickly and with a minimum of formality and expense. Its jurisdiction is local and limited. For example, these Courts may try criminal offences punishable with a maximum of three years' imprisonment or fine not exceeding 10,000 baht (around 200 pounds) or both but it may not impose a sentence of more than six months' imprisonment or a fine exceeding 5,000 baht (100 pounds) for any offence. And in civil cases, the Court may try cases where the amount of claim does not exceed 10,000 baht (200 pounds).

The Juvenile Court has jurisdiction in any criminal case involving children (ages 7-14) and youths (15-18); any civil action under the Civil and Commercial Code involving court proceedings concerning any minor (under 20), and any proceedings where the Court must pass judgement or issue orders affecting children or youths under the laws providing to come under the jurisdiction of the Juvenile Court. Children below the age of 7 have no legal capacity to commit crimes under Thai law and no imprisonment is imposed upon children under 14 years of ages.

(2) Courts of Appeal[29]

This is the second level in the court system. There are 4 intermediate courts of appeal divided geographically with a total of 241 judges. The Court of Appeal has appellate jurisdiction in all civil, bankruptcy and criminal matters. Appeals from all of the Courts of First Instance throughout the country come to this Court. At least 2 judges are needed to form a quorum to hear an appeal. A single judgement of the Court is delivered. When opinions differ, the majority opinion prevails but the dissenting judge may attach a dissenting opinion to the judgement. An appeal on a point of law and subject to certain specified restrictions, on a point of fact lies from the Court of Appeal to the Supreme Court.

(3) The Supreme Court

The Supreme Court is the final court of appeal in all-civil, bankruptcy and criminal cases in Thailand. It is the highest level or the court of last resort, and is located in Bangkok. It receives appeals on questions of law and in some cases on questions of facts from the Court of Appeal as well as direct appeals from the Labour Court and the Tax Court. It has original jurisdiction in case of challenge of elections. The Supreme Court has 55 judges including the President (Chief Justices) and Vice Presidents. It operates with 15 divisions each composed of 3 justices to hear individual cases.

Trial System

In constitutional terms, in Thailand everybody is equal before the law, whether Thai or foreigners, resident or non-resident, individual or corporate are not discriminated[30] against in Thai Courts and can expect a fair hearing by the judiciary on their claims and

[29] It divided to 4 courts; the Bangkok Appeals Court, the First Regional Appeals Court, the Second Regional Appeals Court and the Third Regional Appeals Court. All are situated in Bangkok.

[30] Basic universal rights and freedoms are generally observed and protected in Thai Courts but one does not have 'inalienable constitutional rights' of the type which Americans are accustomed to asserting as fundamental in their legal traditions.

in their defences both in civil and criminal matters. There is important distinction between civil and criminal disputes[31]especially in environmental law. It is very rare to take this kind of case to the Courts in Thailand because of lack of enforcement and the slow trials. Thailand is not unique in this respect. In the usual case with an average amount of dilatory tactics by both sides, judgement is rendered about 1 ½ - 4 years after a suit is started. Appeals in civil cases to each of 2 appeal levels take average of 1-2 years in each higher level court.

Civil cases start within about 3-4 months of filing the plaint (complaint) and after the pre-trail settlement or narrowing of the issues to be tried under the guidance of the Court. Trials actually begin 3-4 months after the settlement of issues and are conducted before 2-3 judges, no juries with successive hearings spaced 4-6 weeks apart, and i.e. trials proceed on an instalment plan concept. This method of trial brings each case into court expeditiously while correspondingly helping to diminish the chance of surprises allowing both sides to be better prepared for their next confrontation. It keeps the cases moving in the courts and allows the courts a certain degree of flexibility in trying to effect compromises between the parties. The judges guide the parties to compromises whenever the opportunity arises. Proceedings are conducted in the Thai language with a few rare exceptions and while adversarial in nature among opposing lawyers the mode of trail is not inquisition although judges actively participate in the examination of witnesses with due regard to impartiality, in the interest of justice. Testimony is recorded by the judges in summary form typed by a clerk from the judges' taped dictation, read back to the witnesses in open court, corrected and then signed by the witnesses, the attorneys for both sides and the attending judges. Judgements are rendered in writing reciting the facts and

[31] See McEldowney and McEldowney, Op.cit pp. 20-21

arguments of each side followed by the decision of the trial court. They are read in open court. The Structure and Organisation of the Courts is outlined in Fig. 2., Fig 2. a., Fig 2. b., and Fig. 2. c. It is interesting to note that the jury system was and still is unknown in Thai legal system.

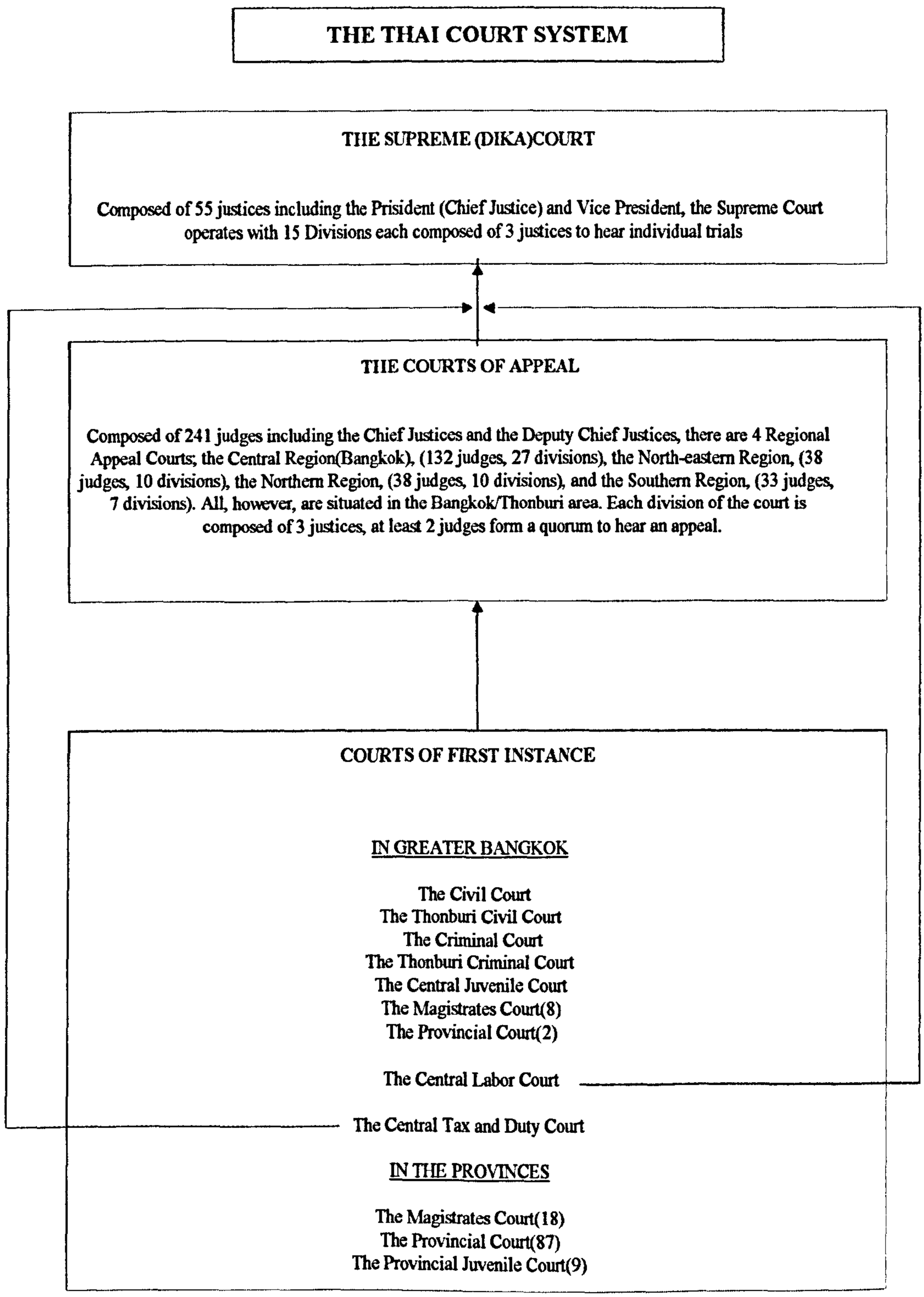


Figure 2.2. *The Thai Court System*

Source: *Boondech, P.,* ***The Thai Judicial System,*** *The Organising Committee of the Seventh LAWASIA Conferences, Bangkok, 1981. Reproduced from Tilleke & Gibbins, (1991)* ***Standard Chartered Bank,*** *Bangkok.*

THE THAI CRIMINAL COURT SYSTEM

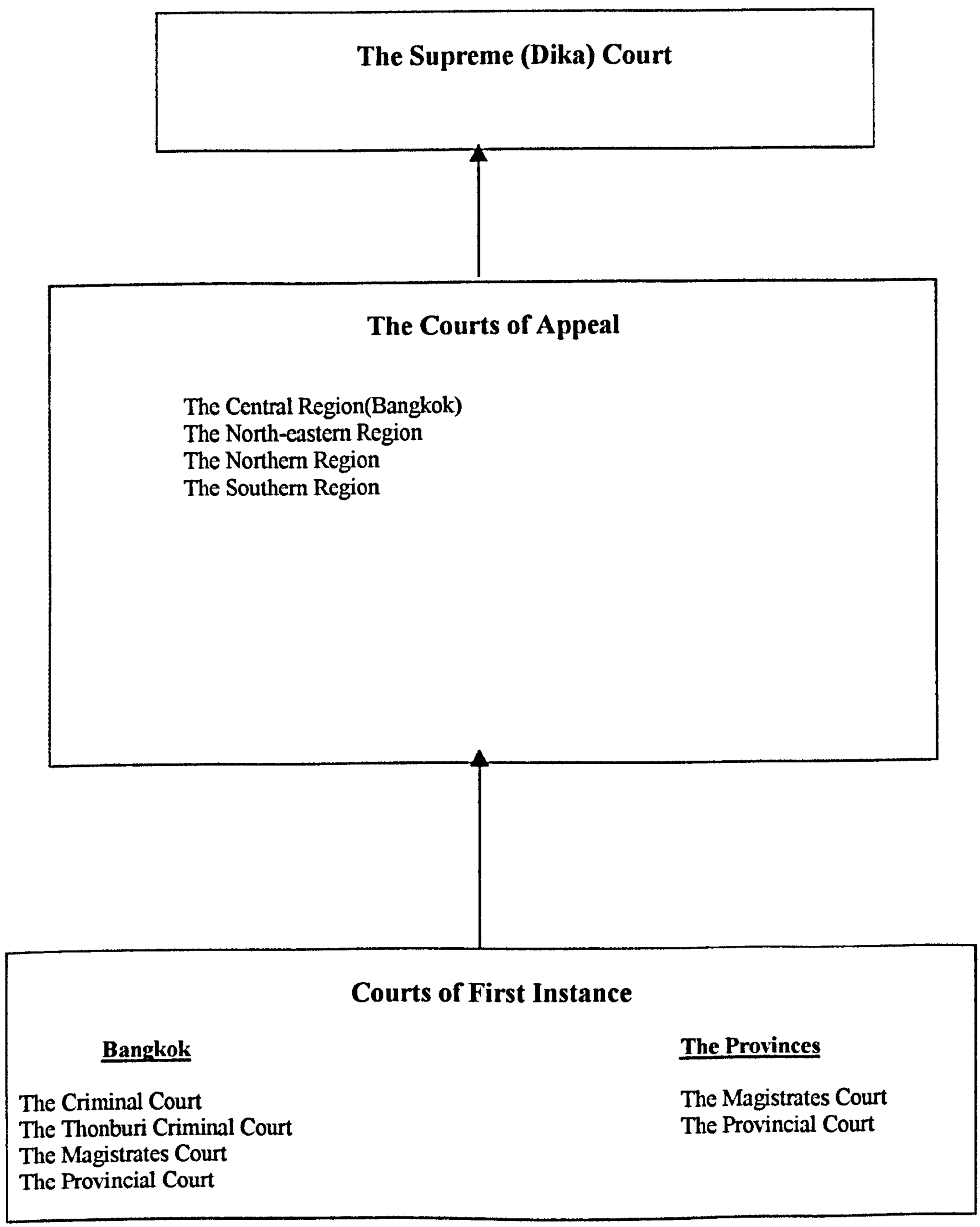


Figure 2. a *The Thai Criminal Court System*

* It should be noted that there is a limitation in filing the criminal case, for example, the Magistrates Court where the maximum rate of imprisonment does not exceed one year or fine not exceeding one thousand baht or both. If so, it must be filed at the Provincial Court in the provinces or the Criminal Court in Bangkok.

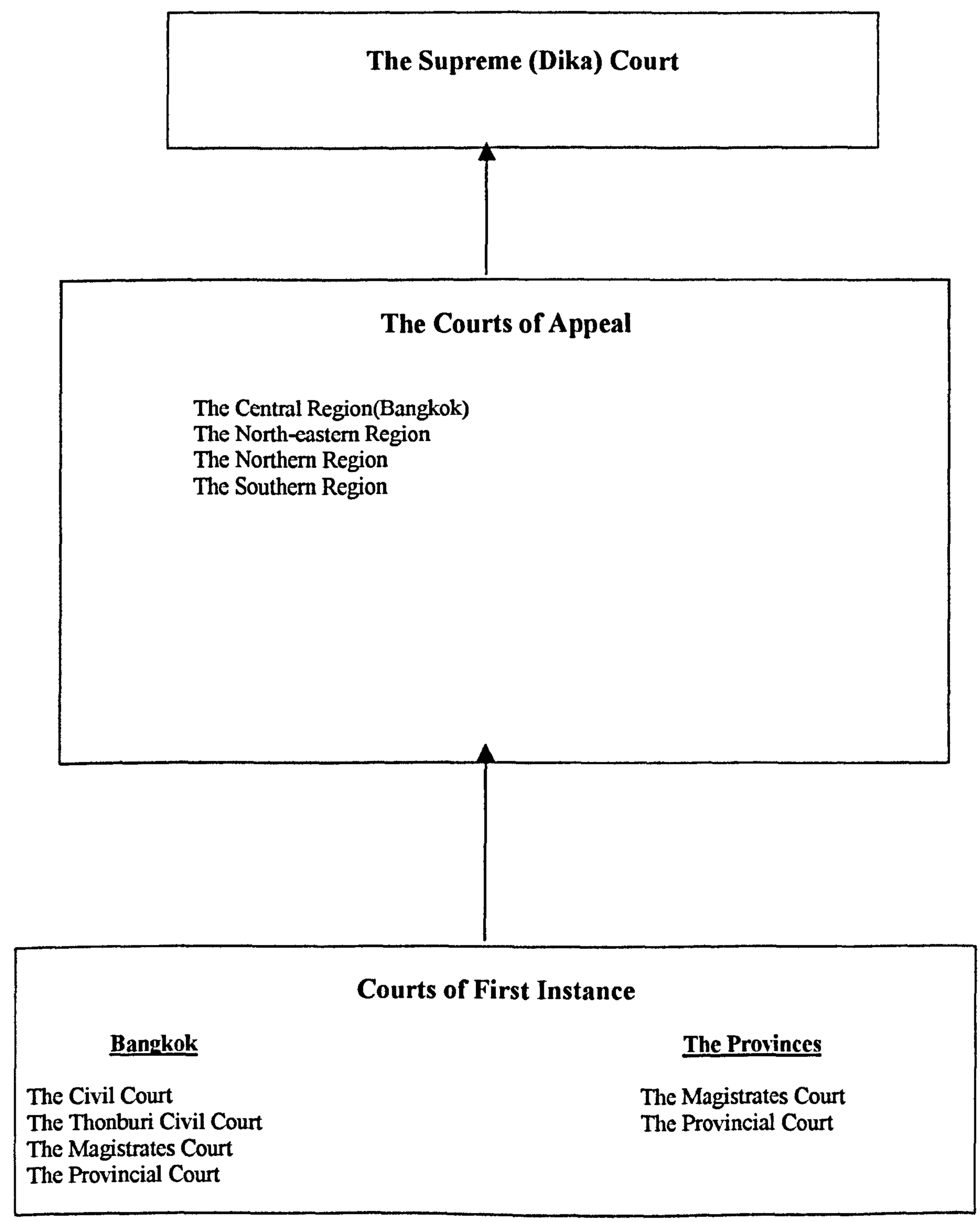


Figure 2. b *The Thai Civil Court System*

* It should be noted that both Magistrates and Provincial Court could be dealing with both criminal and civil cases, the different is only the limitation rate of imprisonment or value of the property or the amount in dispute. For example, in Court of First Instance, the maximum rate of imprisonment does not exceed one year or fine not exceeding one thousand bath or both in criminal cases, value of property or the amount in dispute does not exceed twenty thousand bath in civil cases.

THE THAI COURT SYSTEM (Special)

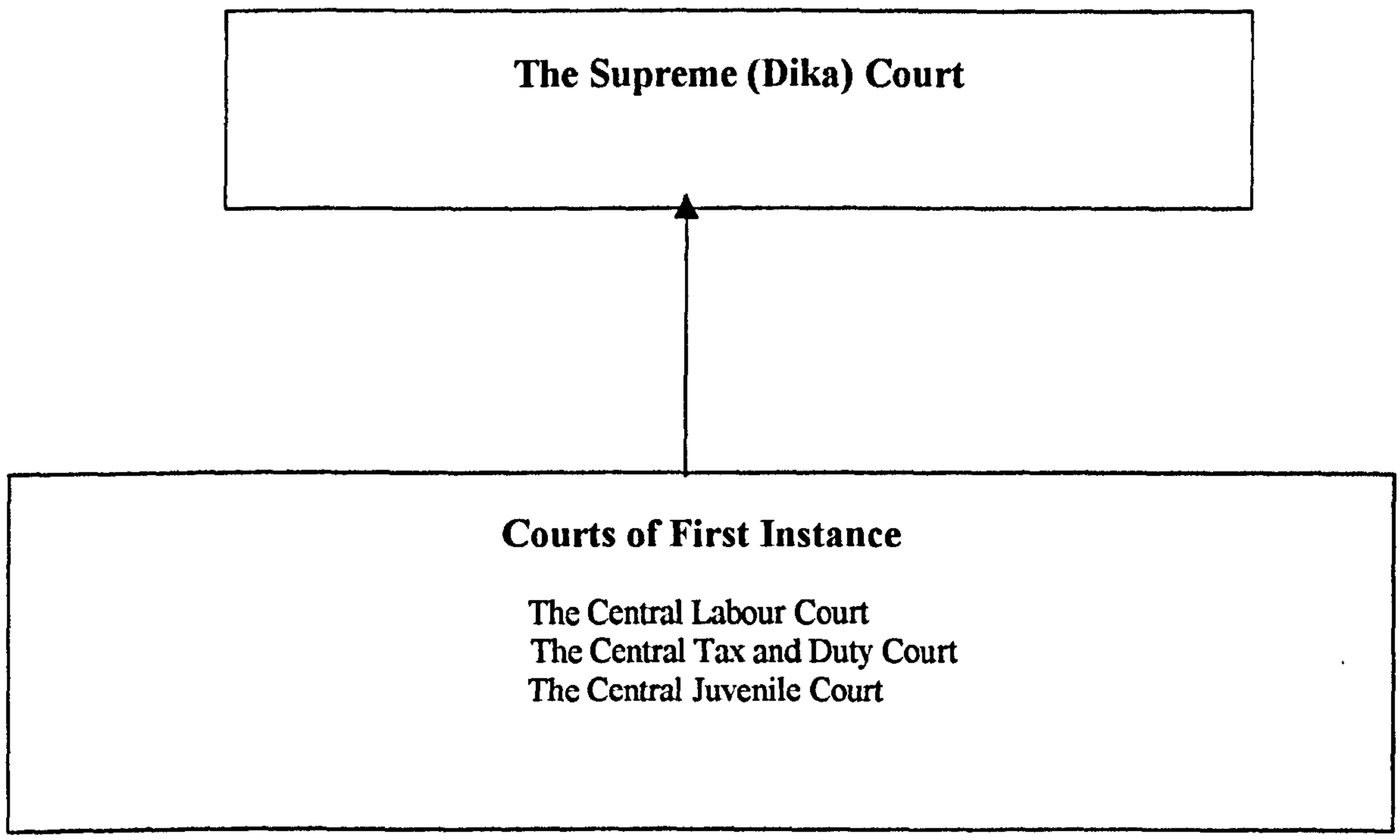


Figure 2. c *The Thai Court System(Special)*

* It should be noted that these special Courts could appeal directly to the Supreme Court.

There is the advantage and disadvantage of having the civil law tradition. The civil law tradition plays a key role in the Thai legal system. The strength of this Code System of Law (Civil Law System) is its simplicity, clarity and ease of organisation. It is well codified and very comparable to German Law or French Law or Japanese Law. The weakness is that it is inflexible and very rigid. It needs a lot of interpretation and clarification. This has significantly affected the enforcement of the Laws. Most Thai Laws, in particular environmental law are based on United States laws and European Law which are too strong to be implemented in Thailand given the difference in the level of development. Thai politics is another factor which put constraints on the enforcement of environmental law. Because Thai politics are often governed by coalitions of parties, the

environmental policy is uncertain and lacks continuity. Most government policies favour in economic development more than environmental protection. This occurs in poor drafts and ambiguous laws and many are often difficult to understand. Cultural consideration is another factor in the nature of Thai officials and politicians. The Thai cultures have much to do with enforcement problems of Thai environmental laws. The widespread corruption in Thailand and Thai character traits include a tendency to compromise over moral standards because modernisation and industrialisation came too quickly for Thai society. Most national legislation, in general, is fragmented, sectoral, out of date and revision or amendments are inchoate. The enforcement of environmental law will be discussed more in Chapter 5 and 6.

Finally, Thai's legal system is prone to bureaucratic inefficiencies. The delay of the Court decision is one of the main problems in Thai justice system. It will take at least 3-5 years to convict the offenders. The expense is another factor to consider when it comes to in term of lawsuit.

To sum up, Thai society is reluctant to resort to litigation. The so called *"Thai way"* is the attitude or the culture to addressing environmental issues in Thailand and may apply more generally to other Asian countries as well as following;[32]

(1) Thai culture avoids confrontation (2) lawsuits are practically non-existent (3) avid open questioning of public officials (4) when damages or injuries are incurred, no one is to blame but fate and (5) top-down authority and centralisation of power. These characteristics profoundly influence the role of law in the protection of the environment.

[32] See K. Kato,(1996), op cit., p. 34.

Civil and Criminal Proceedings and Environmental law

There are two kinds of legal proceedings in Thai law as following;

1. Civil Proceedings

Proceedings[33] in civil cases all Courts are governed by the Civil Procedure Code of 1934. The rules in the Code are practical giving the Court wide discretion in directing the proceedings of cases. All trials are held in an open court except where in the public interest or on any other justifiable grounds where the subject matter should not be disclosed to the general public.[34]The fundamental principles of civil procedure include the following. Both sides are given an equal opportunity to be heard and are entitled to legal representation. Witnesses are subjected to examination-in-chief, cross-examination and re-examination. Little weight is given to any evidence where there has been no opportunity of cross-examination. The judgement must state the grounds on which it is based. Subject to the right of appeal, the judgement is enforceable through the authority of the court against the losing party who may also have to pay the costs of the action to the winning party.

In environmental law the tort of nuisance is frequently the cause of action. This is where the plaintiff claims that there has been some unlawful interference with a person's rights involving the use or enjoyment of land. The strict liability rule is not being applied in this tort law. This means the plaintiff often finds it difficult to prove that the person committing the offence is guilty. These are unlikely in case of negligence in environmental law too. This may make pursuing a claim in negligence financially not worth while in Thailand because the compensation is rather a small amount of money

[33] There can be divided into 3 parts; (1) Procedures before the trial (2) Procedures during the trial (3) Procedures after trial.

[34] For example where national security is involved or in divorce, adultery, legitimacy proceedings. In such cases, the Court may sit in camera, i.e. the public and the press are excluded and no report of them may be published except with leave of the Court.(See T. Kravixien, Op.cit. p. 25.)

according to the Judge's discretion. This also applies in terms of remedies in environmental law. Civil actions normally result in damages for loss or an injunction. Damages are often claimed as the main remedy for any loss. Past losses may be compensated for by damages, but it is quite difficult to claim damages for the future. Traditionally, the Court will not award compensation in the future in Thailand. Injunctions are considered useful in the general area of environmental law. An injunction may be used requiring the abatement of a nuisance. Alternatively, an injunction may be used in the new 1992 Act by the government authorities.

2. Criminal Proceedings

In criminal cases, the prosecution of the case is mostly taken by the public prosecutor and is governed by the Criminal Procedure Code of 1935. Criminal proceedings in Thailand differ from those of some other countries in that here criminal prosecution may be instituted either by the public prosecutor or by the injured person himself. When the injured person himself prosecutes the offender, the matter will not go through the usual process, i.e. through the administrative official or police officer and the public prosecutor. In practice, however most of criminal cases are conducted by the public prosecutor.

After a prosecution order has been made, the public prosecutor will prosecute the alleged offender in court. In certain types of cases[35]if the injured person is entitled to claim the restitution of the property he has been deprived of through the offence or the value thereof, the public prosecutor when instituting the criminal prosecution may apply for restitution of the property or the value thereof on behalf of the injured person. In criminal case where the injured person is the prosecutor, the Court must hold a preliminary examination. The Court will admit the charge for trial only when there is a

[35] For example stealing, snatching, robbery, piracy, extortion, cheating, misappropriation and receiving stolen property.(See also U. Sankosik , ' Public Prosecution Service', in Thai Bar Association, The Administration of Justice in Thailand(Bangkok, Siva Phorn Ltd, 1967)pp. 28 - 40, at 38.

prima facie case for prosecution. In a case brought by the public prosecutor, the Court need not hold a preliminary examination because the public prosecutor is assumed to have examined the evidence before the prosecution but the Court may do so if it thinks fit. In a criminal trial, the Rule of Presumption of Innocence prevails the prosecutor therefore has the duty to prove to the satisfaction of the Court that the accused is guilty of the offence charged. If he can not do so the accused must be acquitted.

Before presenting evidence, the prosecutor may open the case for the purpose of stating to the Court the case for the prosecution. That is to say by setting forth the nature of the charge and the evidence which he proposes to present to the Court in order to prove the guilt of the accused. The prosecutor will then present the evidence for the prosecution. After that, the accused will present the evidence for the defence. He may, before that, open the case for the purpose of stating to the Court the case for the defence, by setting forth the facts or provisions of law upon which he proposes to rely, and the evidence which he proposes to present to the Court. After the evidence for the defence has been presented, the prosecutor and the accused may close their respective cases either orally or in writing or both. The Court will then deliver judgement.

In environmental cases criminal proceedings are rare and prosecutions are relatively uncommon. It should be noted that private prosecutions in criminal cases are also very rare in Thailand. Criminal prosecutions may arise from various legislations imposing criminal liability, such as the 1992 Act which provides the governmental agencies with a range of powers of entry and enforcement powers to carry out their duties under the Act. However, there is an area of considerable controversy regarding adequate criminal sanctions to protect the environment. The enforcement of environmental law by means of the criminal law is commonly undertaken by government authorities such as PCD(the Pollution Control Department), DIW(Department of Industrial Works). In recent years

there is trend in favour of bring criminal prosecution in cases involving environmental pollution that I will discuss in the later Chapter. It should also be noted that the rules of "strict liability" also apply to criminal offences in Thailand under the new 1992 Act.

Either or both parties may appeal against the judgement of the Court of First Instance to the Court of Appeal. The judgement of the Court of Appeal may also be further appealed to the Supreme Court but there are certain restrictions on the right of appeal to the Supreme Court. In a case where there are such restrictions the appeal may still be allowed if a judge who sat in on the case or signed the judgement or made a dissenting opinion either in the Court of First Instance or in the Appeal Court is of the opinion that the matter decided is so important as to justify its submission to the Supreme Court and gives leave to appeal thereto or if the Supreme-General of the Public Prosecution Office certifies by fixing his signature to the appeal that there are reasonable grounds for a decision by the Supreme Court.

There is also an important distinction between civil and criminal procedures. Disputes between private citizens or between the citizen and the state. In Thailand it is the same as in the UK[36] that in environmental law this may involve tort, property rights or the wrongful exercise of public powers. A tort is a civil wrong that may give rise to an action for damages. The civil action and procedure structure for civil cases is outlined in Fig.2.3. The criminal jurisdiction and appeal structure for criminal cases is outlined in Fig. 2.4.

[36] J. McEldowney and S. McEldowney, Environment and the Law (Dorchester, Henry Ling Ltd, 1996), p.20.

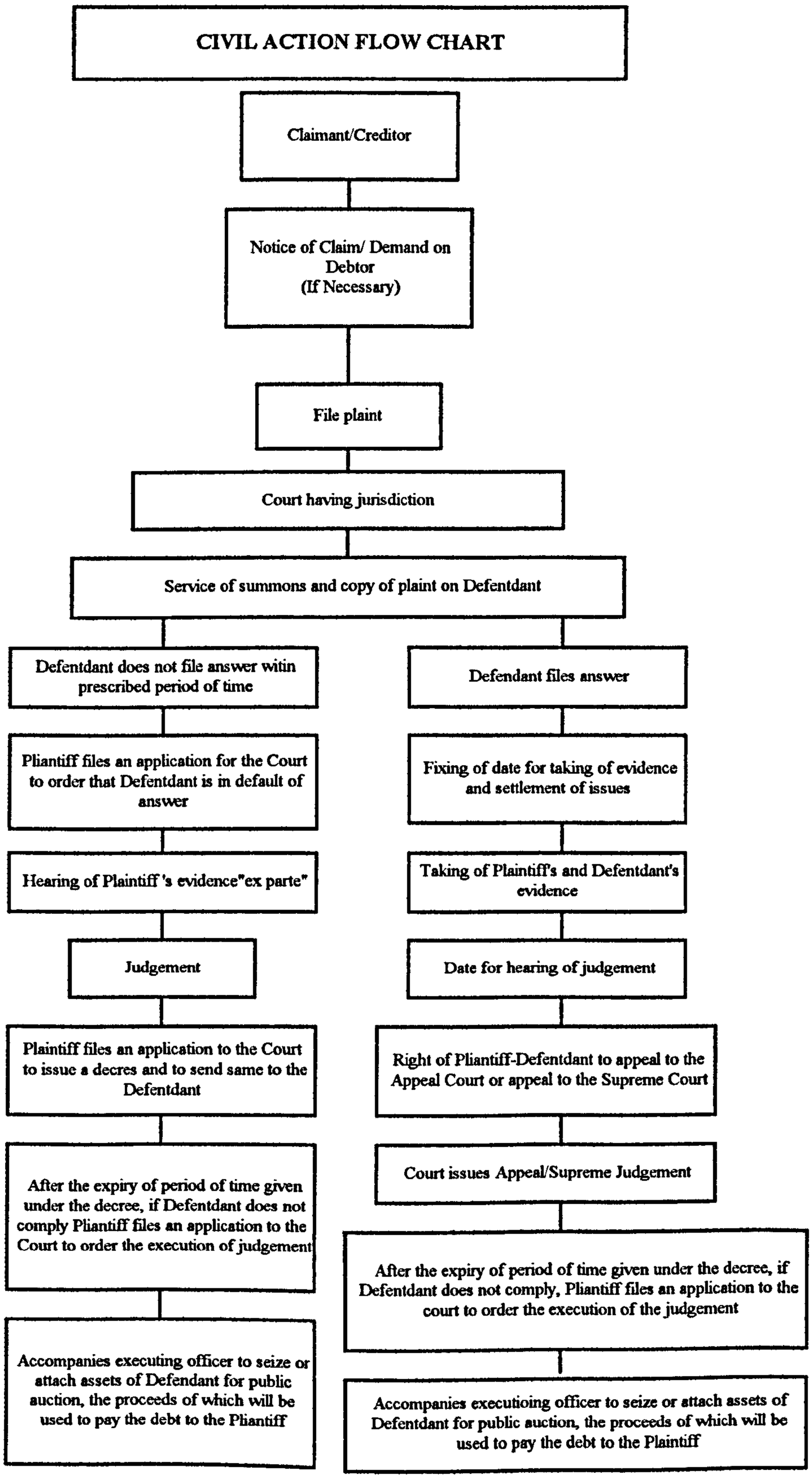


Fig. 2.3*Civil Action*

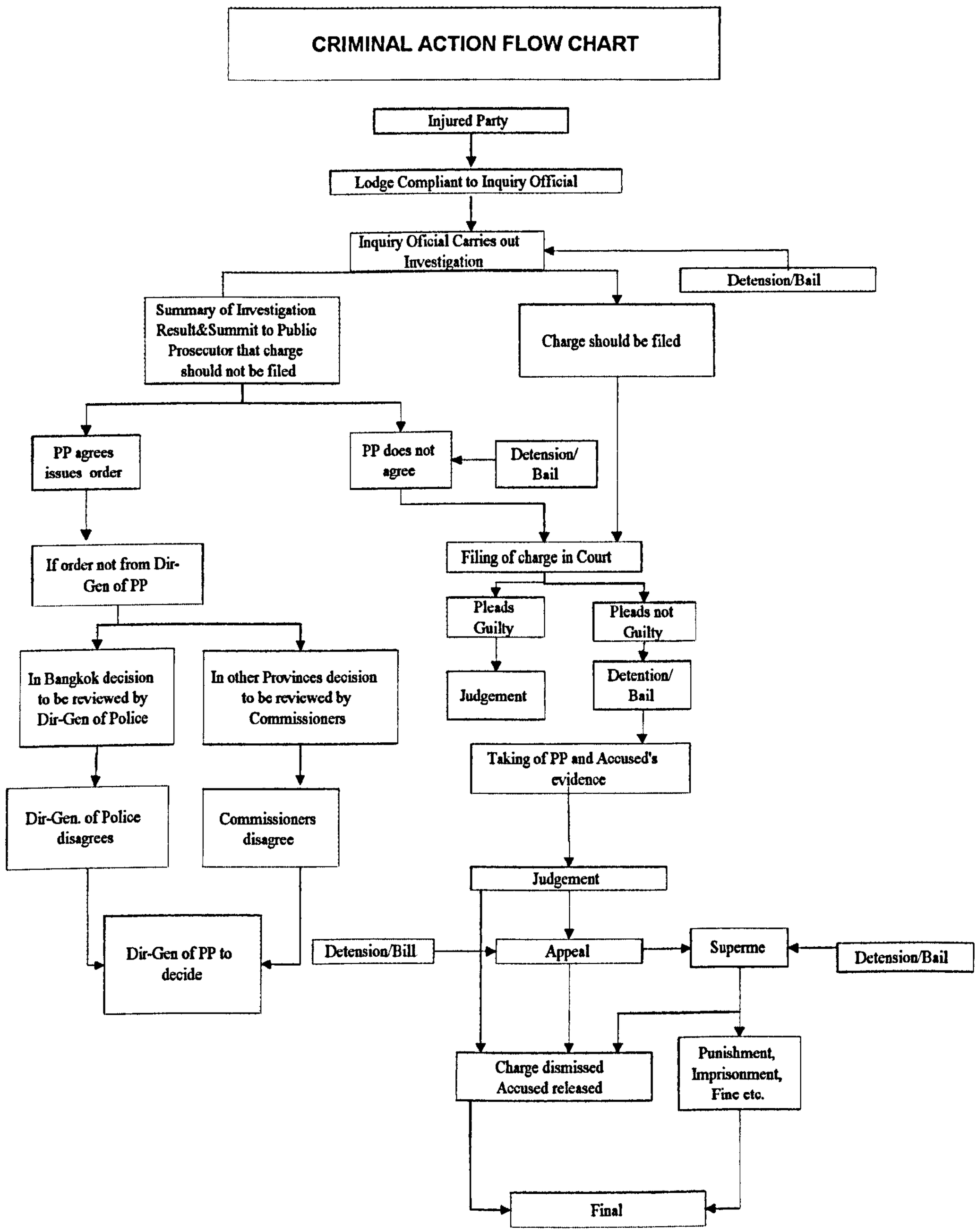


Fig 2.4. *Criminal Action Flow Chart*

Source: *Tilleke & Gibbins.*, ***Standard Chartered Bank**, (Bangkok, 1991).*

Conclusions

The primary attention given to legal rules and Constitutional protection of the environment in Thailand is a significant feature of the Thai legal system. In this chapter, the organisation of the courts including how to take a case to court and the procedures necessary to make an application for judicial review have been examined. As shown above, there is a difference between civil law and common law systems. It is also important to remember the role of the court in a Civil Law System that there is no judge-made law like the common law system. One other point is the limited use of courts, with the exception of Japan, in East and Southeast Asia, few lawsuits especially related to environmental issues are filed in court. In most cases, environmental disputes are resolved through government intervention in the form of friendly persuasion, administrative guidance, mediation, or arbitration. As there is no administrative court system in Thailand but as in Indonesia, these are other administrative mechanisms for pollution-related conflict resolution such as in Japan, Korea, Taiwan, and the Philippines, these are the preferred recourse compared to a full judicial review. In general, Asian societies are reluctant to resort to litigation. This reluctance to litigate is often based on a less individualised approach to problems and among many of the population poor education or knowledge about the legal system. There are other considerations that account for a reluctant to litigate. High costs, delays, technical and complex details of legal rules all contribute to act as a deterrent to litigation. Thailand is remarkably feudal in its attitudes to law. This gives rise to a cultural acceptance of norms and acquiescence in the status quo. Acceptance of the existing status gives rise to a sense of exclusion for the political process and from any way in the governmental process. The Thai

way[37]expresses perfectly the absence of enforcement and acceptance of existing institutes and rules without questioning Thai legislation or authorities. In the past decades, environment litigation is increasing in both number and scope, however because the level of awareness about environmental issues it is rising rapidly. A related factor is that government authorities have started to crack down on flagrant offenders of environmental laws and regulations. Lawsuits challenging government policies or decisions are also likely to increase in the future. Government pressure is seen as preferably to individual cases taken by private litigation. In this context Thailand faces a great challenge as one of the miraculous Asian Tigers[38] whose economies have gained success how can environmental issues be successfully addressed?

[37] See K. Kato,(1996), op cit., p. 34.

[38] T. Krider, 'Taking Another Look at the Regulation of Mutual Funds in the Aftermath of the Asian Financial Crisis', (1998) Pacific Rim Law and Policy Journal, Vol. 7, March, 427- 530, at 430.

Chapter 3 The Environment and Economic Development in Thailand

Introduction

As outlined in the previous two chapters the main context for an understanding of environmental problems in Thailand is in terms of the rapid economic developments undertaken in the 1960's. The Boom and Bust economy of the 1970's and 1990's left Thailand vulnerable to exploitation of its environmental resources. It is clear that Thailand's future economy and strategy for development depends on addressing the mistakes of the past. Environmental protection has today emerged as a response to rapid industrialisation which posed a serious threat to the Thai environment.

These economic matters are addressed in this chapter. It will be established that Thailand's environmental problems are linked to the phenomenal economic growth in the 1980s and 1990s. During this time severe damage was done to the aquatic ecosystems and water resources. This chapter focuses first on a country profile and an analysis of Thailand's economic development. Secondly, how the agricultural sector was replaced by the manufacturing sector and finally how rapid economic growth caused Thailand's environmental problems. The paradox is that without economic growth the economy would collapse, with economic growth the environment faces a crisis. It is submitted that this paradox is one which developing countries need to address. Sadly, the Thai example is full of missed opportunities. Finally, foreign investment has led to pollution, leaving the question about how foreign investment has contributed to Thai's environmental problems as a whole.

What emerges is a fundamental question about the impact of economic development being unplanned and unrestricted or unregulated? Thailand provides a remarkable country case study of how the environment may suffer as a result of ill considered economic planning.

Figure (3.1) Thailand as a State in South East Asia

Thailand's Country Profile

Thailand's geographical location is at the heart of Southeast Asia. At its north and north-east border is Laos PDR; at its eastern border is Cambodia; at its southern border is Malaysia; and at its western border is Myanmar.[1] Thailand's land area covers 198,114 square miles, and its geography can be divided into four regions.[2] The North is a mountainous region, made up of natural forests and deep alluvial valleys. The biggest city of this region is Chiang Mai. The Central region is a lush, fertile valley where most of the country's rice-production takes place. The Northeast region is arid, and the Southern region is hilly and mountainous with thick forests and rich mineral and ore deposits. This region is the centre for the production of rubber and cultivation of other tropical crops. Its capital, Bangkok is the major seaport and centre of government, the economy and industry.[3] Thailand has a tropical climate, with three seasons: hot (March to June), rainy (July to October), and cool (November to February).[4] The land is divided into four natural regions: the north, the central plain or the Chao Praya River basin, the Northeast or Korat Plateau and the south or Southern Peninsula.

The Northeast region or Korat Plateau is an arid region characterised by a rolling surface and undulating hills. Harsh climatic conditions often result in this region being subjected to flooding and drought. Thailand is a warm-humid tropical country. There are so many monsoons during the rainy season which lasts from May to September. The remainder of the year is the dry season. Temperatures are highest in March and April and lowest in December and January. The average temperature is 23.7 to 32.5 degrees Celsius.

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[1] ASEAN Thailand, Thailand in Brief (visited Feb. 11, 1999) <http://www.mfa.go.th/asean/data/brief.html>
[2] Ibid.
[3] The Hong Kong and Shanghai Banking Corp, Business Profiles Series: Thailand 3 (1981).
[4] Ibid.

Generations of historians have confidently assumed that the Thai originated in north-western Szechwan in China about 5,000 years ago[5] and later migrated to their present homeland.[6]Recently, this assumption has changed due to the discovery of remarkable prehistoric artefacts in Ban Chiang village, Nong Han district of Udon Thani Province in the Northeast. Painted pottery unearthed there testified to the fact that the Northeast of Thailand has been inhabited for over 4,000 years. There are indicators of a far more sophisticated culture than any previously suspected by archaeologists. It now appears that the Thais might have originated here[7] in Thailand and later scattered to other parts of Asia, including some parts of China.

Today, the population[8] of Thailand is approximately 60 million (1996) roughly comparable to the population size of the United Kingdom, with an annual population growth rate of approximately 1.3 percent. Thailand is composed of a wide variety of ethnic groups including Chinese, Malays, Cambodian, Vietnamese, Indians, and other immigrants controlled by a quota system. The largest ethnic minority is Chinese and other minority groups include Malays, Kampucheans, Mon, Lao as well as several indigenous hill tribes.[9] It is estimated that in Thailand there may be up to 20 different (hill tribes) whose total population is about 555,000.[10] Most of Thailand's population is

[5] M. Bunnag and B. J. Brafman, Thailand 1, (Bangkok, 1973).
[6] Bowring, Sir John, The Kingdom and People of Siam , (London: Oxford University Press, 1977).
[7] Wyatt, David K, Thailand: A Short History, (London: Oxford University Press, 1984).
[8] See National Economic and Social Development Board, Population Projections for Thailand 1980-2015 (Bangkok, Office of the Prime minister, 1991). By the year 2010, Thailand's population is expected to be approximately 71 million. See Bangkokpost Newspaper, October 1, 1997, at 2.
[9] See supra note 4, The term "Hill tribe" is used to refer to several highland minorities that are linguistically and culturally distinct from the Thai. The term includes Karen, Lua, Hmong(Meo), Yao, Akha, Lahu, Lisu, H'tin and Khamu. Many of these people are relative newcomers to Thailand, few have been granted Thai citizenship and most are registered aliens. See also M. S. Flaherty and V. R. Filipchuk, 'Forest Management in Northern Thailand: A Rural Thai Perspective', (1993) GEOFORUM Vol. 24, at 263-265. P. Dearden, 'Development, The Environment and Social Differentiation in Northern Thailand, in J. Rigg ed. Counting the Costs: Economic Growth and Environmental Change in Thailand (1995), at 111- 119.
[10] T. Chadchaidee, Essays on Thailand 70 (Bangkok, 1994). Out of these, the six dominant hill tribes include Yao, Karen, Akha, Lahu, Hmong and Lisu. These hill tribes usually grow rice, corn and other agricultural products on the mountainsides.

located in the countryside. The agricultural population accounted for 35.85 million in 1991, or 62% of the total population in the country. The active agricultural labour force was taken at 19.48 million in the same year, or approximately 67% of the total labour force. Thailand's economy has entered a number of phases development (1980-1990). There is a steady rise in migration from agriculture to the cities.

Between the First and the Fifth NESDP Plans(1980-1990), the agricultural population increased at a slower rate. A typical Thai farm family consisted of 5 persons and extends, beyond the nucleus of parents and their offspring, to include grandparents, cousins, or other relatives. Within the household, 67% of total family members are devoted to the active labour force, those remaining are the elderly and the young. About 50% of active labour are engaged in farming. Most of the family members finish their compulsory education only up to the sixth grade[11]. Thailand is considered to be an agricultural country, although a steady increase in industrialisation had been very evident for some decades. The poverty of many Thai people remains despite widespread industries in the country. This poverty leads to instability in the Thai family and the inevitable rise in exploitation of young people and children in the western tourist industry, which since the 1970s has been growing in importance and significance.[12]

As mentioned in chapter 1, the Thai government has been a constitutional monarchy since 1932, with the King as Head of State, and an elected Prime Minister who is Head of the Government. Thailand also has an elected national assembly with an upper and lower house; a Council of Ministers who assist the Prime Minister in administering state affairs; and a three-level court system that consists of courts of first instance, an appeals court,

[11] Ministry of Education, Secondary Education and Special Education in Thailand (Bangkok, 1993)
[12] P. Williamson and P. Hirch, 'Tourism development and social differentiation in Koh Samui', in M.J.G. Parnwell, Uneven Development in Thailand (Avebury, Ashgate Publishing Ltd., 1996), pp. 186-203.

and a supreme court.[13]There is a clear acceptance in the Constitution of the separation of power doctrine.

The Thai Economy (1960-1998)

Thailand's economy has made remarkable progress over the past ten years. Real GDP rose at an average rate of 9 percent per annum while inflation was limited to around 4 percent[14]. Exports of manufactured goods have grown very rapidly and now figure more prominently than do agricultural goods in Thai exports. Investment also surged and the flow of foreign investment from Japan and the newly industrialising economies helped in significant ways to ease the current account deficits that in recent years have become a conspicuous feature of Thai economy. At the beginning of the 1980s, Thailand's economy entered a new period of economic development during which the manufacturing sector increased more rapidly than the agricultural and mining sectors.[15]Thailand's economic development also included rapid urbanisation with a surge in migrants moving from rural to urban areas.[16] Major exports include textiles, computers and components, gems and footwear, and major imports include industrial machinery, electrical machinery, chemicals, and iron and steel.[17] In 1994, Thailand's

[13] F. M. Bunge, ed., Foreign Area Studies: Thailand A Country Study (American University, 1980), at 173-186.

[14] ADB, Asian Development Out Look 1996-1997, London: Oxford University Press, 1996, pp 103

[15] See K. Wongboonsin et al., Population, Environment and Resources Sustainability in Thailand (Bangkok, 1993), at 14.

[16] Ibid., p. 15. For a review of recent development proposals that include various efforts such as a US$ 9.5 billion proposal to develop Thailand's Southern Seaboard(Bangkokpost, September 11, 1997 at 1), efforts to extend gas fields in the Gulf of Thailand(Bangkokpost, July 1, 1997, at 12), and efforts to help improve Thailand's sugar cane plantation(Bangkokpost, September 20, 1997, at 2).

[17]See ASEAN Secretariat, Kingdom of Thailand (visited February 11, 1999) http://www.ascansec.org/history/pro_tha..html

gross domestic product growth rate was 8.8 percent, in 1995, 8.6 percent, and in 1996 it was 6.6 percent.[18] The economy is likely to continue its strong performance in 1996 and 1997. [19] However, containing inflation may prove difficult and the current account deficit may widen further. Although the medium-term outlook remains bright and the country is well positioned to take advantage of the newly emerging world trading environment, it needs to continue its efforts at stimulating structural change. To promote a shift to higher value-added products, it will be necessary to increase significantly the availability of skilled labour and the quality of the infrastructure. Liberation of the financial sector should be widened and deepened if the Government's hope of turning Thailand into a regional financial centre is to be realised. But the Thai economy is also faced with a number of serious policy and developmental issues, despite the rapid growth of the economy, the benefits of this growth have been far from equitably distributed among income groups and regions of the country, the increasing labour costs are already leading to a loss of competitiveness.[20]

Despite this remarkable growth, Thailand's economy has suffered a severe economic downturn in the 1997 period because of implications of the overhaul and "the bubble economy". The bubble economy refers to the phenomenon of economic growth of an unprecedented level followed by a sharp and often unpredictable collapse. Japan and other areas in the region have experienced this phenomenon over the past decades. It began in Thailand and then spread to Malaysia, Indonesia, South Korea and finally to Japan. What is this link and why has it extended over these countries? There are many reasons for this, but one reason is because each of these countries has changed its policy

[18]See ASEAN Secretariat, ASEAN GDP Growth Rates 1994-1996(visited February 11, 1999) http://www.aseansec.org/stat/table2..html From 1987 to 1990 foreign investment in Thailand rose from US$ 400 million to US$ 2.4 billion.

[19] See ASEAN Secretariat, Statistics, ASEAN Forecast for 1998 (visited February 11, 1999) http://www.ascansec.org/stat/table5..html

to export-oriented industries and all are depending only on foreign investment. However, today and as a result of the economic crisis, Thailand has problems with its value of currency and Thailand's financial reserves are depleted in an attempt to defend its monetary value in the international money market.

[20] ADB, Asian Development Out look 1996-1997, London: Oxford University Press, 1996, pp 107-108

Table 3.1 Chronology of major economic events

1930 Thai agriculture is characterised as a rice monoculture and is traditionally under the feudal systems. It has a kind of subsistence economy.

1950 Thailand entry into foreign markets and the main export items are rice, teakwood and rubber.

1954 Thai government promulgates the first Industrial Promotion Act.

1960 Thailand underwent substantial changes in its economic structure and output. It starts the Modern Industrialisation.

1961 The First National Development Plan (1961-1966).

1967 The Second National Development Plan (1967-1971).

1970 Industrialisation is a success and the Thai economy reaches the stage of producing exported-oriented items.

1972 Thai government shifts in its policy from an import-substitution to an exported-oriented economy.

1973 Oil price increases affect the balance of payments severely.

1984 Thailand devalued the baht because of the recession.

1985 Massive foreign direct investment flows into Thailand and most of it was Japanese investment because of the Plaza Accord.

1993 Real per capital income increases from 1000 baht to 11,000 baht per head. The manufactured exports are about 81 percent of total exports. The forest area is diminished to only 26 percent of the total land areas.

1996 GDP rises at an average 10 percent per annum over the last 5 years.

1997 Thailand depletes its financial reserves and the economy is in crisis.

1999 Thailand's economy struggle to perform and virtual collapse is prevented by massive aids from the World Bank and the IMF and foreign donors.

Thailand's Period of Industrialisation Since the 1960s

Thailand provided an interesting and a unique set of economic characteristics. The above chronology sets out the main events. It is a paradox that a successful economy in the 1980s created the necessary condition for environment problems. A number of economic facts underline this statement.

* In the three decades since the early 1960s, Thailand has been and is still the only net food exporter in East and Southeast Asia.
* Thailand in the past has not experienced a negative economic growth rate in the last 30 years of its modern economic development. However, in an unprecedented economic crisis in 1997, it suffered a dramatic depletion in its growth.
* Economic changes in Thailand took place in a situation where the labour force was still predominantly agricultural where the secondary school attainment was one of the lowest in Asia and where the primacy of its capital. The city of Bangkok increased in size with development effectively outpacing all other Thai cities in the kingdom.
* Massive foreign direct investment especially Japanese flowed into the country in the late 1980s, and lifted Thailand out of the recession of the mid 1980s and triggered the wave of prosperity that was to last till 1997.
* Voluntary family planning programmes in Thailand are regarded as one of the most successful in the world and helps explain the fast increase in its per capita GNP.

Thailand has been likened to the "tiger" economy of Japan and other fast growth countries likes Hong Kong. There are common similarities. The tiger economy phenomenon has its roots in the early 1960s at a time when Thailand began to industrialise. Industrialisation has important implications for the environment. The Thai economy may be divided into four periods; suggesting four periods of economic developments.

The First Period: Economic Development in the 1960s: Early Years for Agricultural and Modernisation

The 1960s saw the dominance of the public sector in Thailand. The first two national economic development plans[21] were the product of the work of Thai bureaucrats at the National Economic Development Board (NESDB).[22] After the relatively unstable economy of the 1950s and the unsuccessful attempts to convert to state capitalism in the late 1940s and the 1950s, the first two development plans called for the state to stop expanding its public-enterprise sector. At the time it was necessary to provide an economic environment in which the private sector could pursue its economic interests. The First Development Plan was to stimulate economic growth *via* an increase in private investment. To achieve this overall objective the government invested heavily in the basic infrastructure namely electricity-generating stations, highways, inland waterways and air-transport facilities as well as improving the telephone and postal services. The government also reactivated the Investment Promotion Act of 1954 with major improvements in incentive provisions. The revision of the Act served as an additional sign that the government was enthusiastic in promoting industrialisation. The incentive measures provided by the 1954 Act directly encouraged the expansion of production industries as a means to alleviate import substitution throughout the 1960s. The Second Development Plan also identified for the first time certain industries with growth potential. These industries included paper, chemical-fertiliser, iron and steel, automobile assembly, cement, gunny bag and textile industries. All became part of the programme that promoted growth. The Second Plan also encouraged the private sector to expand its exploitation of mineral resources and to explore new mineral deposits as well as

[21] The First Economic Development Plan(1961-66) and the Second Economic Development Plan (1967-1971).
[22] Perhaps influenced by the Japanese's model for placed economic growth.

developing the mining system. The foundations of economic prosperity were built in moving Thailand from an agricultural country to an industrial one.

Thus the industrialisation strategy was formulated within the bureaucracy and without the active participation of the private sector. The import-substitution strategy was a product of the then orthodox understanding of how to improve economic development. The strategy had a variable success. The exportation of agricultural products increased slowly. At the same time the importation of consumer products gained strength, creating increased tariff deficits. This would result in saving foreign exchange. The import-substitution strategy was also seen as an effective way of reducing Thailand's dependence on imports of foreign consumer goods. With import substitution, manufacturing became a new source of wealth. New capitalist groups emerged with their economic base in industry rather than agriculture.[23] Nevertheless, the 1960s maintained the public sector as the leading sector both as the formulator of industrial strategy and as an active investor in areas essential to industrialisation.

The Second Period: Economic Development in the 1970s

The strategy of import substitution industrialisation (ISI) began to flag in the late 1970s with the GDP growth rate running down. Thailand's foreign debt passed the $13 billion mark.[24] The 1970s saw instability in both the economic and the political sphere. The ingredients of the bubble economy had been formed. In the first year of the 1970's, the Thai economy experienced reductions in exported agricultural products and increases in imported capital and consumer goods. The trade balance was in the red. Thailand's international reserves decreased steadily. The first oil shock in 1973 rocked the world

[23] A. Suehiro, 'Capitalist Development in Post-War Thailand: Commercial Bankers, Industrial Elite and Agribusiness Groups', in R. McVey, ed., Southeast Asian Capitalists (Ithaca, New York, Cornell University, 1992), p. 53.
[24] K. Hewison, Power and Politics in Thailand (Manila: Journal of Contemporary Asia, 1989), p. 63.

economy. It had disastrous consequences in Thailand. The developed countries had to adjust their policies in the face of rising oil prices and cope with economic fluctuation and recession. Thailand was more fortunate in this instance. Through rising oil prices the costs of imports increased considerably. Thai agricultural exports also commanded higher prices, reducing the size of trade deficits. Rising prices of agricultural exports also raised the income of the agricultural sector. Prime increases sustained the expansion of import-substitution industries in face of the economic instability reflected in the world market. As a result, the government shifted economic policy to one of export-promotion. However, because of world-wide economic fluctuations, domestic investment also decreased. Political instability in the period created an atmosphere of economic uncertainty, making the domestic economy unstable and more unpredictable. Political changes in neighbouring countries to Thailand such as Burma, Laos, Vietnam, Cambodia etc. threatened the security of the Thai nation. Equally important was the instability within the political sphere. There were several changes in government and several coup attempts during the decade. There had been at least 23 coups since the overthrow of royal rule in 1932. On average between 1932 and 1973, there was one coup attempt every three years. Whether elections were allowed or not, military-bureaucratic officials overwhelmingly dominated the ranks of the cabinet ministers. These military-bureaucratic leaders usually rose to power through coups events which took place more frequently in Thailand than any nation

The Third Period: Economic Development in the 1980s

The early 1980s was a period of slow growth in the Thai economy. The world economy once more was experiencing instability as the result of a second oil price crisis. Additional, trade protection was observed in the leading industrial economies. Thailand's

exports were not growing as rapidly as had been expected. Agricultural exports during the 1980's actually experienced a decline in value. The economic situation created greater uncertainty in the export market for Thai manufactured and agricultural products. There was an increase in the trade deficit. The domestic budget moved into the red with rising external debt, resulting in high inflation. This negative aspect of the economy was reinforced by natural resources such as land, forest and river becoming depleted at an alarming rate. Moreover, in spite of the growth experience of the Thai economy, income inequality in terms of people and regions increased and certain areas of the country were still in extreme poverty. Industrial activities were still concentrated in the BMR (Bangkok Metropolitan Region), despite efforts by the government to regionalise industrial locations or zones. As a consequence traffic congestion was and still is a major problem in Bangkok and has produced a bottleneck in the movement of goods and people. The latter half of the 1980s saw an improvement in the Thai economy. From 1986 the growth rate was high generating a widespread feeling that the economy had finally reached a take off stage and that Thailand was about to join the ranks of the Asian NICs. Towards the end of the decade the economy registered double-digit growth for three consecutive years (1988-90). Continued growth created a shortage of skilled manpower, causing wage rates to creep upward. Under supply of infrastructure facilities became increasingly obvious in the late 1980s pushing up costs of production. The general directions of industrialisation policies were similar to those adopted in the 1970s. The export sector received the greatest attention while tourism as a principle component of the export sector received greater support from the government along with other export-manufacturing sector via monetary and fiscal measures. The 1980s also marked a new approach to Thai

industrialisation. The role of the private sector[25] was appreciated and the development policies of this decade called for greater participation of the private sector in the development effort, particularly in spreading economic benefits and location decisions to other parts of the country. The adoption of a 'privatisation' philosophy was more energetically expressed in the Sixth Development Plan(1987-1991). Although Thailand has always adopted a 'free-market' philosophy, it was not until the 1980s that the private sector was expected to participate in the expansion of activities (such as the telephone service, expressways or research and development in science and technology). They were formerly considered to be in the public domain. The private sector was considered broadly to include non-profit making private organisations (NGOs), was encouraged to participate in the prevention of economic and social problems and the identification of their solutions.

In the mid 1980s, Thailand was deep in a recession caused by the conjunction of the rising price of imported oil, plunging prices of its agricultural exports, onerous servicing of a $18 billion foreign debt and a current account deficit that had averaged 5.3 percent between 1981 and 1985.[26]These difficulties led the government to devalue the baht in 1984.[27] The IMF and the World Bank moved in to devise and implement a stabilisation and structural adjustment programme. By the late 1980s, however, the programme had stalled because tremendous amounts of foreign direct investment flowed into the country. Between 1985 and 1990, foreign direct investment coming into the country rose from

[25] The government's relationship with the private sector was consolidated in 1981 through the creation of Joint Public Private Consultative Committee (JPPCC) which linked the Prime Minister and economic bureaucracy directly with representatives of the largest business associations. See also H. S. Rowen, (eds.) Behind East Asian Growth: The Political and Social Foundations of Prosperity (London and New York, Routledge, 1998), pp. 90-92.

[26] World Bank, Thailand: Country Economic Memorandum: Building on Recent Success-A Policy Framework, (Washington D. C, World Bank, 1989), Vol. 1, p. 2.

[27] P. Phongphaichit and C. Baker, Thailand: Economy and Politics (Oxford, Oxford University Press, 1995), p. 151.

$178 million to $2.5 billion.[28] The bulk of this was Japanese investment which rose from $124 million in 1986 to $1.2 billion in 1990.[29] In 1990, total Japanese accumulated investment in Thailand stood at $5.2 billion 85 percent of which had been since 1986 because of the Plaza Accord of 1985.[30] This lifted Thailand out of the recession and triggered a wave of prosperity. It also brought with it ancillary investment from Hong Kong, Taiwan and South Korea as enterprises in these countries sought to relocate their labour intensive operations elsewhere to escape the rising wage demands of their workforces.

The Fourth Period: Economic Development in the 1990s: The Boom and Bust[31]Years (1997-1998)

There was no turning back for the Thai economy. Its march toward NIC status seems unstoppable, although it may take longer than anticipated due to the recent internal political instability and the increasing call for more redistribution measures. At the same time the Thai economy faces a greater degree of competition in its traditional export markets. The grouping of countries into trading areas represents a greater potential for, as well as a threat to, the growth of Thailand's export. The Thai economy in the 1990s is increasingly dependent on the export sector and is thus significantly affected by the world economy. Economic fluctuations in developed countries have an impact on Thailand's exports. With exports serving as the engine of the economy, Thailand grew by 10% per

[28] World Bank, Ibid., p. 71.
[29] Figures from Ministry of Finance, Japan.
[30] Ibid., The Plaza Accord of 1985 had forced the appreciation of the Japanese yen relative to the dollar and other hard currencies in an effort to solve the US trade deficit. What it did was to make production in Japan for the USA and other export markets extremely prohibitive forcing the Japanese to shift significant sectors of their industrial facilities particularly the more labour intensive sectors outside Japan especially to Southeast Asia. It estimated about $15 billion in Japanese direct investment during the period o 1986-1990. See W. Bello et al., A Siamese Tragedy: Development and Disintegration in Modern Thailand (London, Zed Books Ltd, 1998), p. 17.
[31] Executive Briefing, 'The Boom (1986-1996)' and the Bust (1997-?)', (1997) East Asian Executive Reports December 15, Vol. 19, No. 12. at 5.

annum in the decade 1985-95 the fastest in the world according to the World Bank. By the early 1990s, the country was being touted as Asia's 'fifth tiger' an accolade that was formally bestowed by the Bank at the World Bank-IMF Conference held in Bangkok in September 1991. The very upbeat mood at the Bank about the prospects of its Thai pupil was captured in an agency report asserting that the only potential macroeconomic problem on the horizon is the one that many developing countries would wish to have the problem of managing an economic boom.[32]

On July 2, 1997, Thailand abandoned the basket-pegged exchange rate system and replaced it with the managed floating exchange rate system, whereby the value of the Baht was to be determined by market forces to reflect economic fundamentals.[33] After that, Thailand asked for help and accepted a standby package from the International Monetary Fund (IMF)[34], which is an international organisation that monitors the balance of payments and exchange rate activities to maintain stability and restructure the economic system.[35] In August 1997, the International Monetary Fund (IMF) and the World Bank announced a US$ 16.7 billion financial rescue package for Thailand.[36] Prior to this bailout, the Thai government had suspended the operation of sixteen finance companies in June 1997, and another forty-two in August.[37] Although the government spent US$ 16 billion to prop up these troubled companies, and another US$ 24.4 billion

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[32] W. Easterly and P. Honohan, Financial Sector Policy in Thailand: A Macroeconomic Perspective (Washiton DC, World Bank, 1990), p.16.

[33] Executive Briefing, 'Thailand Devalues the Bath', (1997) East Asian Executive Reports May 15, Vol. 19, No. 5. at 4.

[34] Executive Briefing, 'Thailand Announces Restructuring Package but Crisis Continues...', (1997) East Asian Executive Reports Vol. 19, No. 8. at 4.

[35] Executive Briefing, 'Fifth Thai-IMF Letter of Intent: Lower GDP Forecasts, Accelerated Spending to Cushion Crisis Impact', (1998) East Asian Executive Reports May, 15, Vol. 20, No. 5. at 9.

[36] W. Bello, 'From Miracle to Meltdown: Thailand, the World Bank and the IMF', Watershed: People's Forum on Ecology, Nov. 1997-Feb. 1998, at 17

[37] S. Kuankachorn, 'The Roots of the Thai Crisis: A Failure of Development', Watershed: People's Forum on Ecology , Mar.- June 1998, at 37, 39 (highlighting that a major reason for the bankruptcy of firms and banks is bad performance and corruption among their senior executives and major shareholders.); cf. P. Phongpaichit, 'We Need a Crisis to Rethink Issues like Participation and Sustainable Development', Watershed: People's Forum on Ecology, Nov. 1997-Feb. 1998, at 22.

to defend the Thai baht in international currency exchange markets, the baht soon thereafter lost thirty percent of its value.[38] Foreign investors lost confidence in the economy and started to delay, reduce, or pull out their investments in Thailand.[39] The current economic crisis has revealed very quickly not only the weakness of the financial system, but the corruption inside it. It has also shown what happens when you have a system without transparency and popular participation. A lot of decisions are made without the public having any idea about how or why they are made. This is because in Thailand there is a framework of a democratic system, but in practice the decision-making system is very undemocratic and untransparent. Since 1997, the Thai economy has still faced severe difficulties, mainly as a result of the bubble economy which made the country highly dependent on short-term foreign capital and left the country overly exposed to unproductive and speculative investment.

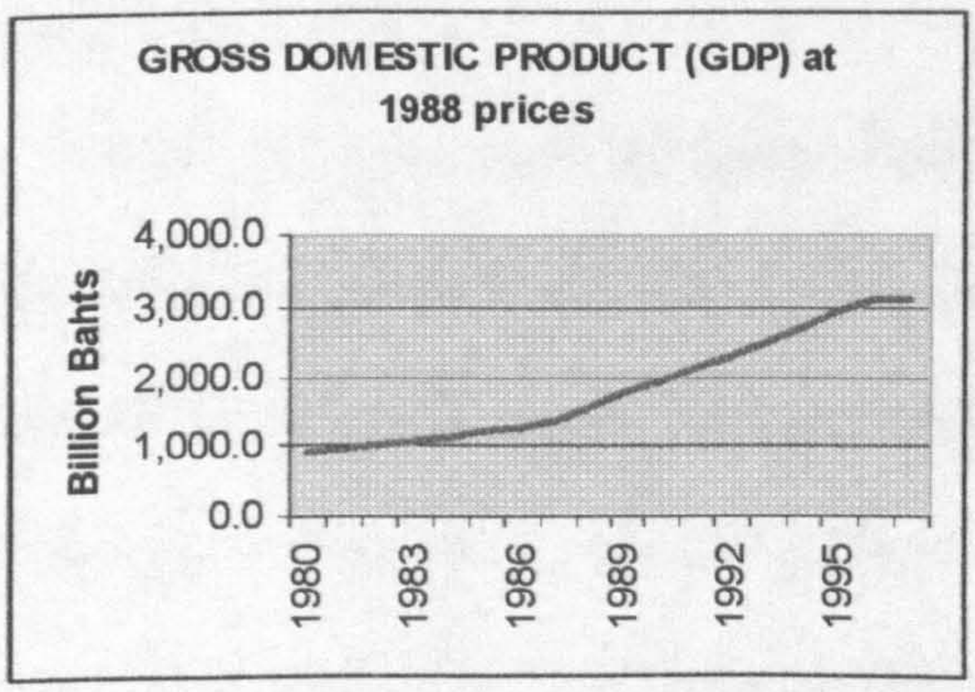

Figure 3.2 GDP1 Source:Bank of Thailand[40]

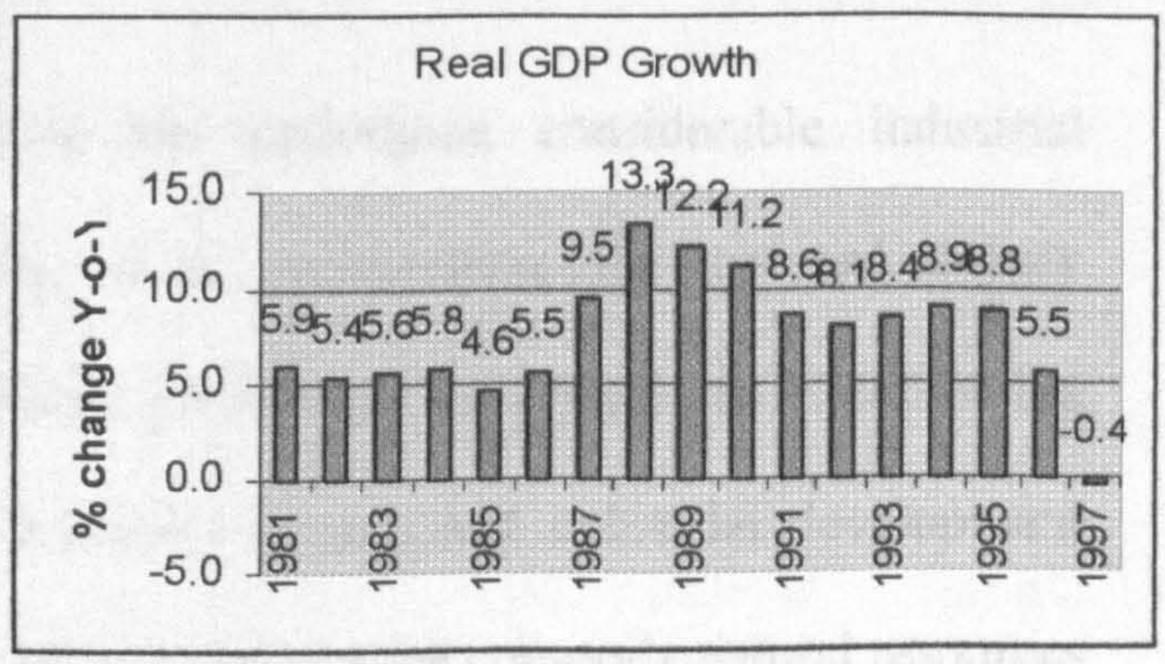

Figure 3.3 GDP2 Source:Bank of Thailand

Figure 3.2 and 3.3 show that real GDP growth is continually decreasing from year 1995 until finally in 1997 it becomes negative. This economic signal shows that the total

[38] See Bello, op cit., at 17, 19
[39] Ibid.,
[40] Bank of Thailand web site (http:// www. bot. or. th /research/public/databank/download/tab 5-8. xls)

domestic production of Thailand is shrinking. Thailand is on the economic down turn.[41] This is mainly, the result of devaluation of the Baht after changing the exchange rate system.[42]

The Relationship between Economic Growth and the Environment

Thailand has emerged from the 1980s as one of the most promising developing nations in the world. The double figure growth rates of 13 percent and 11 percent, it achieved in 1988 and 1990 were the highest rates of growth in its history. Thailand is in the midst of dramatic change in the nature and quality of the life of its people, in the structure of its communities and in the foundations of its economy. In the past, Thailand was a rural society in which local communities were dependent on the natural resources which surrounded them and the national economy relied on the export of a small number of native crops. The sustainable use of resources was a fundamental aspect of rural life, people understood the inter-relationships between the different components of their local environment and their activities were defined by the need to protect their surrounding resources.

Over the last two decades, Thailand has undergone considerable industrial development and urbanisation such that it is approaching the coveted Newly Industrialised Country (NICs) status. Economic growth has been rapid and is continuing although it declined in 1997. However, economic growth and industrial development have been achieved at the expense of the environment and the country's natural resources base. This can be seen at national, regional and global levels. At national level, the

[41] K. Cunningham, 'Fallen Tiger: the Story of Thailand's Currency Devaluation in 1997', in Houston Journal of International Law, No. 21, 1999, pp. 451- 484.

[42] There were some of the warning signs included (1) large external deficits along with property and stock market bubbles (2) pegged exchange rates which required large amounts of foreign reserve to maintain and (3) lax prudential rules and financial oversight of the banking industries. See also T. Krider, 'Taking Another Look at the Regulation of Mutual Funds in the Aftermath of the Asian Financial Crisis', Pacific Rim Law and Policy Journal March, Vol. 7, 427- 449, at 430.

migration of large numbers of people to the cities and the growth in industrial activities with the accompanying increases in energy consumption and transportation have resulted in air and water pollution in Bangkok and other major cities.[43] In Thailand's rural areas, the expansion in agricultural production has taken place through the clearance of vast areas of virgin forest one of the country's most precious and vulnerable resources. This has led to a self-perpetuating cycle of poverty and environmental degradation, which brings no benefits to rural communities or the forest.

Thailand's forests are also part of a regional system, the management of Thai forests affects Thailand's neighbours and vice versa.[44] When Thailand set an example in late 1988 by imposing a national ban on logging, the decision affected forest management practices throughout the region. At the global level, Thailand contributes albeit in a small way to the problems of global climate change and depletion of the ozone layer. Thailand's emission of greenhouse gases is small at present accounting for less than 1 percent of global emissions.

The way forward for Thailand therefore is to manage the changes taking place in the country in such way that the well being of the people is enhanced without sacrificing the national, regional or global environment. According to the Thailand National Report to UNCED 1992[45], in the philosophy of Thailand toward sustainable development, it said

"Thailand has great potential to achieve sustainable development. It is one of the few developing countries, which has shown an impressive and sustained economic performance over the last decade. This economic growth has generated financial resources, which can be invested in projects to improve and protect the environment and ultimately to establish the policies and incentives to achieve sustainable development."

[43] W. Bello et al., A Siamese Tragedy: Development and Disintegration in Modern Thailand(London, Zed Books Ltd, 1998), pp. 116-130.
[44] Ibid., pp. 175-202.
[45] UNCED, Thailand National Report to UNCED 1992, pp. 2-3.

But, on the other hand, Thailand must be aware of the dominant economic interests of national and multinational groups. Because it has been proved in the past that far from being *'neutral' or 'ecologically-friendly'*, the Thai government actually was one of the main agents in the process of environmental destruction. The truth is that the conditions through which the Thai economy is linked to the international market and the role played by the country in the contemporary stage of world-wide capitalist accumulation have been characterised by a complete disrespect for environmental values. Despite its remarkable industrial growth, Thailand is still an important supplier of cheap raw materials to developed countries and this exploitation has been intensive and predatory. As for the increasing industrialisation in the country be it export-oriented or import substitution oriented the same phenomenon of maximisation of profits has taken place. In addition, apart from the government sector the significant role of the private sector in Thailand must be stressed for they have also been determined by this same 'profit-at-any-cost' logic.

Moreover, Thailand was quite unprepared for the massive surge of foreign investment in the late 1980s, particularly from Japan. In 1987 alone, Japanese investment approvals by Thailand's Board of Investments (BOI) exceeded the cumulative Japanese investment for the preceding 20 years.[46]Thailand drew not only Japanese corporations seeking to escape high labour costs but also significant investment from Taiwanese, Hong Kong and South Korean firms. Nevertheless the Japanese were dominant, accounting for over half of the total foreign investment inflow by the end of the 1980s.[47]The Thais probably did not expect that the BOI's efforts to attract investment would elicit such a response. In any event, they were unprepared particularly in terms of planning the infrastructure that

[46] TDRI, Thailand's Economic Structure: Summary Report (Bangkok, TDRI, 1992), pp.2-26).
[47] NESDB, National Urban Development Policy Framework (Bangkok, NESDB, 1992), Chapter 1, Area I, Vol. 1, p. 72.

would accommodate the massively stepped up investment. Location of investment was left up to foreign investors which meant they set up shop in the Bangkok Metropolitan Region(BMR) in large numbers. Indeed, 70 percent of all foreign investment was in the inner ring of the BMR.[48]The total number of factories in Thailand grew from 600 for the whole kingdom in 1969 to 20, 000 by 1979 and 50,000 by 1989.[49]The BMR and the adjoin Central Region accounted for close to 75 percent of value-added in manufacturing and 52 percent of industries (27, 000 out 0f 50,000).[50] The BMR faced massive environmental problems, as did the rest of Thailand due to this rapid industrialisation. First, the lack of planing of the infrastructure and the congestion of the BMR, one result has been a massive addition of freight traffic to BMR's already unbearable traffic problems. Second, water shortages and water pollution is another aspect of the problems. The failure to anticipate the water needs of rapid industrialisation has led to industries relying excessively on pumping up groundwater to make up for their lack of access to piped water especially in the BMR. Industrial waste accounts for 25 to 30 percent of the BOD(biological oxygen demand) load released into the Chao Phraya River significantly amounting to 20, 000 tons a year.[51] Third, air pollution, the BMR now ranks as the worst city in terms of air pollution of 70 capital cities which have been studied. Fourth, hazardous waste, the number of waste producing industries increased from 211 in 1969 to 7,0 30 in 1979 and 26, 235 by the end of the 1980s.[52] In 1986, Thailand produced some 1, 149, 234 metric tons of hazardous waste.[53] At that time there was no systematic plan for the disposal of toxic waste with companies left to their own

[48] Ibid., p. 22.
[49] P. Kritiporn et al., The Greening of Thai Industry (Bangkok, TDRI, 1990), pp. 8-11.
[50] NESDB, Ibid.
[51] P. Kritiporn et al, Ibid., p. 11.
[52] Ibid., p. 12.
[53] Ibid., pp. 61-63.

devices which meant a large part of it was deposited within ordinary garbage or dumped with little care for site. A favourite means of disposal was simply dumping it in waterways. A 1991 study showed that 25 of Thailand's 43 rivers were contaminated with heavy metal.[54] The Gulf of Thailand was heavily polluted by hazardous wastes like mercury absorbed by crabs, clams, lobsters and fish thus entering the food chain and eventually the bodies of human beings.[55]

There was the notion that foreign investors were more likely than local firms to comply with wastewater and other environmental regulations. This has been disputed by a number of experts. One foreign expert with a great deal of experience with government environmental monitoring agencies stated at interview[56];

"They're all the same whether Australian, Japanese, Chinese, and American. If they can do it, they would make zero investment in environmental control... and they can do it in a much better fashion but they choose not to."

Another example quotes a German firm making refrigerators as saying that they used a lower-grade more environmentally harmful technology than the mother firm did in Europe.[57]As for Japanese firms another expert claims that Japan has managed to clean up its environment to a great extent by exporting its dirty industry, textile factories which discharge harmful acetate dyes these have been moved to Thailand.[58] The Japanese food-processing industry which has taken the form of joint ventures in Thailand has substandard waste treatment facilities according to a Japanese firm specialising in

[54] P. Eamsakulrat et all., 'Hazardous waste management in Thailand', Quarterly Review (Bangkok, TDRI, 1994), September, p. 10.
[55] Ibid.
[56] W. Bello et al., p. 126.
[57] Ibid.
[58] J. Ui, 'Pollution Export', in S. Tsuru et al., Environmental Policy in Japan (Berlin, WZB, 1989), pp. 395-412.

wastewater equipment. As for Taiwanese firms, they are among the worst violators of environmental regulation.[59]

Furthermore, some of the most harmful interventions in the environment have been promoted by the state itself through the undertaking of massive engineering works (not always useful) which often were conceived to benefit sectors of capital linked to private business or multinational groups. Roads, buildings, airports, dams, reactors and hydro-electric projects etc. have been implemented throughout the country very often sponsored by international finance organisations like the World bank at the expense of environmental values. Meanwhile, the ideology of 'developmentalism[60]' is still very strong and appealing and therefore preservation proposals are often said to be anti-economic, romantic or against the priority of economic growth.

Nevertheless, it is obvious, that any development undertaken at great speed and on a vast scale is bound to have an impact on the environment. Thailand is certainly aware of these problems and efforts are being made to find appropriate solutions. The effects of the rapid development is, what finally seems to be a matter for increasing public concern. Lessons must be learnt from the past and measures taken to ensure that the environment will not be sacrificed to any form of development or modernisation.

Thailand today is facing an economic crisis. After years of pegging its currency to the U.S. dollar, the Thai government was no longer willing or able to purchase enough Thai baht to maintain its exchange value. Once the devaluation of the currency occurred, Thailand was left without sufficient resources to pay its bills. This deficiency forced the government to seek financial protection against its creditors through loans from the

[59] W. Bello et al., Ibid.

[60] P. F. Bell, 'Development or maldevelopment? The contractions of Thailand's economic growth', in M. J. G. Parnwell, Uneven Development in Thailand (England, Avebury Ashgate Publishing Limited, 1996), pp. 49-62.

international community.[61] Thailand and the miraculous Asia Tigers whose economies raced and roared impressively over the course of many years have collapsed to the ground, they may take a long time to recover. Thailand's economic expansion had been lauded throughout the 1990s as the blueprint for the economic salvation of developing nations such as Vietnam Laos, Cambodia etc. A severe financial crisis led to the collapse of several Asian economies at the end of 1997. The whole region of Southeast Asia namely Malaysia, the Philippines, Korea, Indonesia and Japan has suffered many of the same problems as Thailand. It is believed that this was the worst economic recession since the Second World War. This is the so called *'boom and bust'* or *'the bubble economy'*, it is interesting to see how this can happen in such a very short period of time.

An over-extended financial sector, a manufacturing sector too dependent on electronics and textiles, industries with too much variety (auto manufacturing, private healthcare, housing, steel, petrochemicals), an over- inflated property market, and a rising standard of living which priced the country out of the low-end export market all contributed to the Thai economic crisis.[62] Due to this dire economic situation, 300,000 to two million people may have lost their jobs.[63] Thailand has worked hard to adhere to the conditions required under the IMF bailout, and the economy seems to be taking steps towards recovery.[64]

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[61] T. Krider, 'Taking Another Look at the Regulation of Mutual Funds in the Aftermath of the Asian Financial Crisis', (1998) Pacific Rim Law and Policy Journal Vol. 7, 427-449, at 431.

[62] S. Barth, 'Trouble In Bangkok', World Trade, Dec. 1997, at 20, 21

[63] See A. Achakulwisut, 'Making Ends Meet', Bangkok Post, Oct. 8, 1997, at 1 (discussing effects of economic crisis on workplace, emphasising that many schoolchildren may have to leave school to help support their families); S. Chawla, Heaviest Mass Layoffs in Decades Predicted, Bangkok Post , Sept. 26, 1997, at 2 (also discussing effects of economic crisis on workplace, and estimating that total unemployment could be around 140,000 by the end of 1997)

[64] See, e.g., B. Einhorn, 'Can Chuan Turn Thailand Around?', Business News Weekly, Apr. 6, 1998, at 56, 58 (arguing that the Thai Prime Minister has started down the right track to economic recovery); South-East 'Asia: Fusion Confusion', The Economist, Apr. 4, 1998, at 81 (describing how Thailand's central bank is honouring its commitment to the IMF to set out tougher regulations on how banks should account for bad loans and looks to be getting serious about reform); M. Vatikiotis et al., 'Thailand on Course', Far Eastern Economic Review, Feb. 26, 1998, at 18 (reporting that Thai Prime Minister Chuan Leekpai is confident the country is moving in the right direction)

There are concerns, however, that in addition to its domestic economic crisis, a regional economic crisis may hit Thailand. Some commentators believe the recent Indonesian economic crisis may adversely affect the Southeast Asian region which is seen as the main exported-factories base for industrialisation.[65] In May 1998, political and social unrest in Indonesia came to a head when President Suharto resigned over widespread criticism of his handling of the economy. In the months prior to his resignation, unemployment soared, gasoline prices rose sharply, and the value of the Indonesian rupiah plunged, resulting in an US$ 43 billion bailout by the IMF. Regardless of how all these regional events unfold, Thailand's agreement with the IMF requires the central government to cut funding in several areas including the budget of MOSTE[66], which may mean that staff positions for environmental inspectors and programs for environmental education may be reduced or eliminated. At risk, then, are various environmental programs that address conservation and pollution control. Given that even in the best of times the Thai government has needed a jumpstart in some of its environmental efforts, the consequences of Thailand's current economic situation are alarming.[67] The Thai government must have the political will to ensure that financial means are available for these programs The attempt to develop environmental education and awareness through domestic or international support was not effective because it created a short period of enthusiasm and attention. There was no further advance when the financial support was over. Some programmes are valid only when policy makers are

[65] See, e.g., Indonesia: Fighting for the Future, The Oregonian, May 22, 1998, at A6 (discussing events leading to Suharto's May 1998 resignation); G. Spencer, 'Suharto Rose, Fell on Economy's Health', , The Oregonian , May 21, 1998, at A5 (detailing circumstances behind Suharto's resignation).

[66] Kuankachorn, op cit., at 38; see also Bello, op cit., at 20 (noting that in addition to the radical changes to the monetary and banking systems other reforms include a rise in the value added tax from seven to 10 percent(now reduced to 5 %), significant cuts in government spending, an increase in utility prices for water and electricity, a more rapid privatisation of state enterprises, a reduction in corporate income taxes, and a balanced budget.).

[67] Kaosa-ard and Pednekar, op cit., p. 45.

in office whereas some are eliminated because of financial pressures inadequate budgets and poorly prioritised allocation of resources.

To sum up, it may truly be said that Thailand is out of control. Today, there are so many crises. For example, the political crisis, the economic crisis and the environmental crisis all show how an extremely dynamic private sector has subverted government regulation and leadership leading to a situation very different from the classical bureaucratic polity model where business was thoroughly under the thumb of the state. It could be said that Thailand is one place where the pendulum has swung too far in favour of the private sector and government has to assume a stronger role in the economic decision making. As the NESDB report[68] stated:

"The underlying cause of most urban fringe development problems confronting Thailand today is not urban land development **per se** but failure to achieve adequate co-ordination between private development and investment in infrastructure particularly environmentally related infrastructure. Land speculation and loss of agricultural land appear to be symptoms of the problem rather than true causes. When landowners and the beneficiaries of land development are not held responsible for protecting the environment and paying for the necessary infrastructure, sprawling, environmentally unsound development is a predicable consequence."

Interestingly, also in agreement was the World Bank[69] which over the past few years had been one of the main advocates of less government regulation. It reported that:

"Economic growth in Thailand over the past few years has been very rapid but in a private enterprise system where few controls are imposed, increased material standards and private gains have been secured at an observable communal expanse. This is especially evident in the BMR where a promotional **laissez-faire** policy of industrial location and development has been associated with a relatively uncontrolled proliferation of factories in and around the capital."

Even more weakening of state regulatory mechanisms is likely to be one the consequences of the financial crisis that hit Thailand in the middle of 1997. Almost

[68] NESDB, Ibid., vol. 1,p. 40.
[69] World Bank, Thailand: Country Economic Memorandum (Washington Dc, World Bank, 1991), 10 October, p. 6.

certainly, one of the first casualties will be pollution controls which will be loosened to cut costs. Further deregulation as required by the IMF rescue package would see a worsening of the transportation, housing and environmental crises in the city. Among other things required by the IMFs structural adjustment measures are the privatisation of state enterprises and a reduction in government spending.[70]This is bad news for government agencies which need resources both human and material more urgently now than ever as the urban population faces unemployment. The possibility of implementing an activist urban and environmental policy may be remote at the moment but a future of even greater government deregulation and more freedom for the private sector is no future at all.

Conclusions

It is clear from the above analyse covering the four periods identified in that Thailand's economic development that despite the sharp downturn in the 1970s the economy had made remarkably progress. Rapid change and modernisation has moved Thailand's feudal and agricultural economy into a phase of unpredictable and unplanned modernisation. This exponential growth was occasioned by a shift from import-substitution manufacturing to export-oriented industrialisation in the 1970s followed by the great migration of Japanese manufacturing into the country in the 1980s following the appreciation of the yen after the Plaza Accord of 1985. Many Thais have benefited from these developments. Many sectors however remained poor. It is hard to see how the growth in economic wealth has benefited the majority of its people, most of whom still live in poverty in the rural areas. The rapid structural shift towards an industrialised

[70] 'Thailand Announces Restructuring Package but Crisis Continues', in East Asian Excessive Reports August 15, 1997. No. 19. And 'Fifth Thai-IMF Letter of Intent: Lower GDP Forecasts, Accelerated Spending to Cushion Crisis Impact', in East Asian Executive Reports, May 15, 1998. No. 20.

economy is not reflected in the employment and population structure.[71]The problems of unbalanced distribution can be seen from the systems such as the bankrupting of rural society as a result of permanently falling prices of agricultural produce which results in migration to off-farm employment in cities and prostitution. All of which exacerbate both developmental and environmental problems. The benefits of rapid industrialisation have yet to be fully calculated.

Thailand is recognised for its cultural richness and natural diversity. The country is gradually transforming from an agrarian to an industrialised economy. While the economy is flourishing, the environmental resources are receding. Thailand's economic development has raised the standard of living of the Thai people. In the process of development, environmental quality and natural resources have been damaged. There are clear lessons to be learned. Rapid economic growth even when well planned can create conditions, which challenge the environment, and without proper care and attention this can overwhelm natural resources. A concerted effort is being made to improve the quality of the environment and to restore depleted resources. The ultimate object is to ensure that environmental protection and economic development in Thailand can proceed hand in hand. Although, the consequences of Thailand's current economic situation are appalling, there is a high level of public consciousness regarding environmental issues in Thailand. Thailand is caught in a crossroads between rapid economic development and the deterioration of environmental resources. The timing is opportune for Thailand to take significant steps towards a comprehensive approach to environmental law and policy. The challenge is to provide a system that allows Thailand to improve its efforts to eliminate pollution and advance conservation.

[71] In 1961, 77 percent of population was in the agricultural sector. But in 1989, despite the industrialisation period over 60 percent was still engaged in agriculture. See T. Panayotou and C. Parasuk, Land and Forest: Projecting Demand and Managing Encroachment (Bangkok, TDRI, 1990), p. 13.

Chapter 4 Current Environmental Problems in Thailand

Introduction

The economic growth outlined in the previous chapter explains how rapid economic developments have taken place in Thailand during the 1980's and 1990's. Thailand's environmental problems are linked to its phenomenal economic growth in the 1980's and 1990's. A cynical view might be that Thailand was prepared to sacrifice its environment in return for rapid economic growth. Poor regulation, weak enforcement and elements of corruption make Thailand an attractive infrastructure to seek fortunes. Western environmental laws with tough standards of enforcement regimes prove expensive compared to the Thai's system of weak regulations and cheap labour. With this view Thailand proved exploitable and the environmental consequences were conveniently overlooked. Privatisation also had a major impact on environmental deterioration. In Thailand during the 1980's and 1990's severe damage to the aquatic ecosystems and water resources was a result of largely unplanned and unprecedented industrial expansion. Even today the full realisation of the extent of damage to Thailand's environmental ecosystem is not fully researched or understood. The lessons or learning experiences of other industrialised societies were not adequately incorporated into Thailand's policy making and economic development. Indeed the lessons learned in western societies were ignored or overlooked too often. One explanation lies in the short-sighted policy that operated in the rush for rapid economic growth in industrial cities with little account for villages, towns or agricultural development.

In this chapter, the delicate ecosystem in Thailand and Thailand's major environmental problems with a substantial focus on water resources are explained. It is not possible writing the thesis to be expansive and cover all aspects of the environment.

Instead chapter 4 offers the reader a glimpse of how water is a pivotal element to the Thai environment, economy and energy users. The full importance of the protection of the water system is clear for the foregoing analysis in the thesis. The chapter is divided into three parts. It begins with an overview of the state of the environment, an analysis of current environmental problems, how water resources are affecting individual rights and ownership, problems of water supply and water pollution.

An Overview of the State of the Environment

Thailand's environment problems might best be classified as rural and urban. Rural environmental problems include deforestation, loss of biological diversity, soil erosion, flooding, water shortages and other natural resource related problems. Urban environmental problems include over crowding, poor housing conditions, traffic congestion, and water and air pollution from domestic and industrial sources and hazardous wastes from industry. Each may be examined as follows:

Rural Environmental Problems

The rural environmental problems are like those of most developing countries and relate to the deteriorating state of natural resources such as forests, water and land rather than the reduction in environmental quality **per se**. The following analysis relates to individual parts of the rural ecosystem.

Forests

Thailand's forests have suffered from overuse and mismanagement. Forests, which covered over 50 percent of Thailand's total land area only 30 years ago, are now reduced to 28 percent of land areas.[1]Uncontrolled logging and clearance for farming have been the two main forces driving deforestation in Thailand. While logging has been officially

banned since 1988, land clearance for agriculture continues but at a much reduced rate. Destruction of watersheds and loss of biological diversity are increasingly recognised as more serious than the mere shortage of timber and fuelwood.[2]

Land

Thailand has relatively abundant land resources. Nevertheless, there are problems of reduced natural resources. The average agricultural land holding is 4.32 hectare per family.[3] However, land is of variable quality, only one quarter of the agriculture land is irrigated and some of the remaining land, which is not irrigated, suffers from perennial flooding. Soil erosion, acidity and salinity affect about half of the country's agricultural land. Another fundamental problem affecting land resources in Thailand is insecurity of land ownership, which deprives farmers of both the access to credit and the incentive to improve and properly manage their land. Over 40 percent of agricultural land is occupied and farmed without any legal land title.[4]The remaining 60% is feudal and state ownership.

Water

Water resources are under increasing pressure. High demands for water from urban areas (for domestic, industrial and commercial use) is competing with demands in rural areas for agriculture and irrigation. Deforestation in the watershed zone is causing the supply of water to become more irregular, leading to a greater incidence of water shortages in rural areas. At the same time, the quality of surface water resources is

[1] Office of Environmental Policy and Planning, Ministry of Science, Technology and Environment, 'Report of Environmental Quality Situations,(Bangkok, Thailand, 1992-1993).
[2] S. Ramitanondh, 'Forests and Deforestation in Thailand: A Pan- Disciplinary Approach', in Culture and Environment in Thailand: A Symposium of the Siam Society (Bangkok, Siam Society, 1989),p. 32.
[3] L. Lohmann, 'Thailand: land, power and colonisation', in M. Colchester and L. Lohmann, eds., The Struggle for Land and the Fate of the Forests (London, Zed, 1993), p.206.
[4] C. Sutthi, 'Highland agriculture: from better to worse', in J. MaKinnon and B. Vienne., eds., Hill Tribes Today (Bangkok, White Lotus, 1989), p. 109.

declining in some areas due to discharges of agro-chemicals, untreated sewage, and industrial wastes. Extraction of groundwater has led to depletion of water levels in some underground aquifers, with consequent problems of saline water intrusion. The failure to anticipate the water needs of rapid industrialisation has led to industries relying excessively on pumping up groundwater to make up for their lack of access to piped water.[5] Groundwater quality deteriorates particular in urban areas without a sewage system and industrial areas through leaching of wastes.[6]Moreover, over pumping of groundwater has caused land subsidence of up to one meter in some parts of Bangkok and salinity intrusion at coastal aquifers.[7]

Urban Environmental Problems

There are acute urban environmental problems especially in Bangkok, the capital of Thailand. Bangkok currently has a population of nine million inhabitants or 11 percent of the total population of Thailand in 1990.[8] This is one of the most dense populations for a city in the region. Many are housed in poor accommodation. The poor are living below subsistence levels. Since the increasing economic disparity between Bangkok and the countryside, migrants were streaming into Bangkok. There were some 1, 100 slums and 2000 squatter settlements in Bangkok. These settlements encompassed some 1.1 million

[5] In Samut Prakan, for example, of the 52, 895 cubic metres of water used daily by a sample of 59 factories, only one-half of one percent came from piped water with most of the rest 95 percent coming from groundwater pumping. See NESDB, Ibid., p. 32.

[6] Groundwater pollution especially chronic pollution was experience in Rayong Province, where it was that five out of ten patients who died in 1979 had extremely high levels of lead in their blood. Excess levels of lead were found in well waters near the house where the patients had died. It was concluded that the lead contamination had been caused by leachate from a garbage dump. (United Nations, Ground Water Quality and Monitoring in Asia and the Pacific. Water Resources Series No. 70, Bangkok, Thailand, 1991).

[7] In 1959, the deepest level record was 12 meters below ground surface in central Bangkok. By 1981, the lowest level was about 52 meters below ground surface. One of the consequences has been Bangkok's famous problem of land subsidence which ranged from 5 centimetres to 10 centimetres the most critical areas being eastern Bangkok parts of which are now below seas level. See R. Srivardhana, 'Water resources management and issues', paper presented at the Ninth Biennial Conferences of the Agricultural Economics Society of Southeast Asia, Asia Hotel, Bangkok, 21-24 June 1993, p. 11.

[8] P. C. Koanantakool, Urban Life and Urban People in Transition (Bangkok, TDRI, 1993), p. 25.

of Bangkok's population[9]. Most of these settlements are poor people and inhabitants lived below the standard poverty line.

Rapid economic development has contributed to a deterioration of the ambient environment. The inability of the public infrastructure to meet the demands imposed by a rapidly growing urban population is most acute. Transportation is a chronic problem. This is especially so in urban industrial areas such as Bangkok. There is almost total reliance on the private car for transport. In the 1980s, the number of motor vehicles rose by 25 per cent a year, with the number of registered vehicles hitting two million by 1990[10] a million of which were private cars. This is an example where inadequate advanced planning and poor strategies have failed to address environmental problems. Bangkok is typical of most urban environments in Thailand. High-density population, air pollution from increasing levels of industrial and vehicle emissions, water pollution arising from untreated wastewater from industries and household, hazardous and toxic waste from industries and hospitals and household refuse.[11]

Industrialisation, urbanisation, and energy consumption are closely related. Industries are attracted to urban centres, especially Bangkok and its satellite provinces, because of the availability of a good infrastructure and services and the proximity to markets and ports. The rural population is attracted to the urban centres because of the availability of employment in industry and services. Since industry is far more energy intensive than agriculture and urban centres, more energy intensive than rural communities,

[9] M. Krongkaew and P. Tonggudai, 'The Growth of Bangkok: the Economics of Unbalanced Urbanisation and Development', Discussion Paper Series No. 90, Faculty of Economics, Thammasat University, May 1984, p. 13.
[10] A. Poungsomlee and H. Ross, Impacts of Modernisation and Urbanisation in Bangkok: An Integrative Ecological and Bio-social Study (Bangkok, Institute for Population and Social Research, Mahidol University, 1992), p. 19.
[11] P. Kritporn et al., Ibid., p. 34.

industrialisation and urbanisation translates into greatly increased demand for energy and by implication a greater generation of pollution.

Industrial pollution is mainly concentrated in the Bangkok Metropolitan Region. Pollution is likely to continue for the foreseeable future. Although at the time of writing, there are signs that some of the worst polluters are moving out of the inner city districts into the satellite provinces which continue to receive by far the largest number of new industries. Bangkok, as the most densely populated area, accounts for over 50 percent of the 52,000 factories and 23 industrial estates in the country; it generates 75 percent of industrial waste. The manufacturing sector is by far the largest generator of hazardous waste, accounting for 90 percent of all such waste in the country.[12]The future is bleak given the extent of planned developments.

The modernisation of the Thai industrial sector is increasing with the use of chemical products used in production processes. Many of the waste products from such processes contain toxic chemicals, which could pose a threat to human health if released into the environment. Approximately 2 million metric tons of hazardous waste was produced in Thailand in 1991 and by 1996, it was expected to reach 3.5 million tons.[13] Over 72 percent of hazardous waste is in the form of heavy metal sludge and solids. Ninety percent of this heavy metal is generated by the basic metals industry. Oil residues account for 11 percent of all hazardous wastes and acid wastes make up to 6 percent (Table 4.1).

[12] TDRI, The Management and Control of Hazardous Waste: Hazardous Waste management in Thailand (Bangkok, TDRI, 1995), p. V.
[13] TDRI Quarterly Review, September 1994, p. 8.

Table 4.1 Type and Volume of Hazardous Waste per tons

Waste	1986	1991	1996*	2001**
Oil residues	106,372	188,254	332,779	589,508
Liquid organic waste	187	311	522	876
Inorganic sludge	3,737	6,674	11,951	21,533
PCB	0	0	0	0
Heavy metal sludge	823,869	536,322	946,565	1,658,192
Solvent	19,783	36,163	66,532	214,306
Acid Waste	18,505	31,432	53,973	46,105
Alkaline Waste	5,679	9,839	16,846	29,909
Off-spec products	12	25	52	107
Aqueous organic waste	116	242	499	1,037
Photographic waste	8,820	16,348	30,398	57,809
Municipal waste	7,231	11,787	19,090	31,093
Infectious waste	46,674	76,078	123,219	200,699
TOTAL	**1,151,729**	**1,993,602**	**1,634,104**	**2,813,980**

*Note: * = projected*

Sources: Department of Pollution Control, Ministry of Science, Technology and Environment, cited in P. Eamsakulrat, D. Patmasiriwat and P. Huidobro, 'Hazardous waste management in Thailand', TDRI Quarterly Review, Vol. 9, No. 3(September 1994), p. 9.

The type and volume of hazard waste is indicative of the development of a modern and complex economy. Sadly, the experience of the west has not assisted the development of clean strategies. Little seems to have been gained from the western experiences and sadly the opportunity to learn has been missed.

Prioritising Current Environmental Problems

Air quality, surface and coastal water quality, solid waste, noise, and hazardous wastes and materials all present formidable challenges to pollution control in Thailand. The Thai Ministry of Science, Technology and Environment Pollution Control Department's 1999 Annual Report[14] discusses increasing air pollution in Bangkok and

[14] This is the most recent report currently available.

some provinces, rising noise pollution, deteriorating surface water quality, concerns about coastal water quality, rising solid waste, and alarm about hazardous materials, as well as the environmental problems caused by hazardous wastes.[15]

A researcher at one of Thailand's main environmental non-governmental organisations, *Towards Ecological Recovery and Regional Alliances* (TERRA), lists Thailand's primary pollution problems as: (1) pollution of rivers, waterways and coastal ecosystems; (2) air and noise pollution; (3) agro- industry and chemical pollution; (4) industrial pollution; and (5) hazardous wastes.[16] It is further noted that: Thailand's rivers are increasingly contaminated from agricultural, domestic and industrial sources. Many industries rely on drainage into rivers as a means of disposing of the by-products of industrial processes.[17] The increasing number of vehicles and industrial expansion is resulting in noise and air pollution.[18] The increased use of chemical fertilisers and pesticides is causing environmental hazards.[19] In general the evidence is clear to support the conclusion that Thailand's economic expansion has resulted in industrial pollution[20] and large amounts of hazardous wastes are generated in Thailand or brought into the country.[21]

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[15] Pollution Control Department, MOSTE Pollution Thailand 1995, (Bangkok, PCD, 1996). For a discussion on the specific types of pollution problems in Thailand, such as air, see at 5-12; noise, see at 16-20; surface water, see at 22-36; coastal water, see at 40-46; solid waste, see at 50-55; and hazardous materials, see at 56-60, 62-70. See also Office of Environmental Policy and Planing, MOSTE Summary of Thailand State of the Environmental Report 1994 (Bangkok, OEPP, 1995), at 11-13.

[16] N. Rajesh, Thailand Country Report on Pollution (Bangkok, 1995), at 10 –40.

[17] Ibid., p. 10.

[18] Ibid., p. 18. One study conducted by Japanese scientist now ranks Bangkok as the worst in terms of air pollution of 70 capital cities studied. The transportation sector has been a leading cause of emissions of sulphur dioxide, nitrogen oxide, carbon monoxide and carbon dioxide. 'Exhaust, dust pollution at dangerous levels', Naoe Na, 29 July 1993, p. 2 and 'Poor Bangkok air quality discussed', The Nation 9 September 1993,p. 16.

[19] Ibid., p. 21-22.

[20] Ibid., p. 24.

[21] Ibid., p. 34. In 1989, for instance some 161, 937 kilograms of toxic waste were estimated to be housed at the port of Klong Toey either unclaimed by local consignees or sent to consignees who did not even exist. In 3,000 tons of waste imported from USA for storage in the Mab Ta Phut industrial estate, there were 4.5 kg of thallium and 2 kg of uranium, which were not disclosed to DIW when it approved the shipment.

The other side of pollution is the absence of appropriate conservation policies. Conservation policies are regrettably weak. Conservation of Thailand's natural resources pose a significant problem. For several decades Thailand has enjoyed an abundance of natural resources without considering their long-term sustainability and, as a result, there are signs of ecological stresses throughout the country.[22] Conservation matters range in diversity from declining land quality, soil degradation and poor management, deforestation due to shifting cultivation and illegal logging, declining water resources, to overfished waters.[23] Much of Thailand's land suitable for paddy fields has already been put to other use, and forestland has been cultivated for agricultural use.[24] Land titling problems make land ownership a difficult proposition for many farmers which means that farmers are unable to make investments in land or equipment, which in turn affects productivity and further degrades the land.[25] Thailand's forests decreased by fifty percent of the total land area in 1960 to twenty-six percent in 1993.[26] Rapid industrialisation, increased use of irrigated agricultural land, and urban growth has created problems of groundwater depletion.[27] Thailand's rich marine fisheries in the Gulf of Thailand and the Andaman Sea have been overexploited since 1977 due to catches that have been two to three times larger than the estimated sustainable yields.[28]

Other conservation matters include threats to endangered wildlife, such as crocodiles, gibbons, sea turtles and tigers, both from illegal wildlife hunting and trafficking and

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Thailand also accepted industrial waste from around the region from countries such as Malaysia and Singapore. The Nation, 12 February 1992, p. 19.

[22] D. Phantumvanit and S. Sathirathai, 'Thailand: Degradation and Development in a Resources Rich Land', (1988) The Environmentalist, Vol. 10, pp. 1-30, at 13.

[23] Ibid., pp. 13-15, 30 –31.

[24] Ibid. p. 14.

[25] M. Kaosa-Ard et al., Natural Resources Management in Mainland Southeast Asia (1995), pp. 31-32.

[26] Ibid., p. 29.

[27] Ibid., p. 33.

[28] Ibid., p. 36-37.

destruction of habitats, including mangrove forests, coral reefs, and seagrass and seaweed.[29] Thailand's different ecosystems include mountain forests, limestone forests, peat swamps, teak forests, bamboo forests and beach forests all of which play host to approximately 7 percent of the world's plants and animal species.[30]

In short, the main causes of environmental problems are the expansion of industrial development and increasing urbanisation. As Thailand has moved to join the newly industrialised countries (NICs) and along with the benefits that the miracle economic growth brings, Thailand is now facing increasing environmental problems. If not properly managed and regulated this may be detrimental to the quality of life of Thai people or even the economic growth itself. There is a phenomenon of a "boom and bust" economy. In order to promote economic development, the government is conscious of the fact that the Thai economy should not be highly regulated by the imposition of a heavy environmental burden. Political decision making policy is in the hands of companies with vested interests leaving the environmental agenda weak and in some confusion. Throughout the public sector in Thailand, there is evidence of corruption and corrupt officials or agents render law enforcement and regulation almost an impossibility.

[29] See supra note 9, State of the Environment Report, pp. 9-11. Thailand's wildlife population has rapidly decreased and many species may already be extinct.
[30] M. Kaosa-Ard and S. Pedneker, Environmental Strategy for Thailand (1996), p. 19.

The Challenges of Adequate and Clean Water Resources

At the heart of the Thai eco-system is water and its management. In the context outlined above, it is necessary to focus on the problems of water resources in Thailand. Three problems may be identified and examined as follows:

1. Water ownership and water rights;[31]
2. Adequate water supply;
3. The challenges posed by sewers polluting water.

Water Ownership and Water Rights

The question of whether water resources belong to the State or a private individual is closely connected to what extent the State can or should control, manage or conserve water resources? In Thailand the mechanisms for assigning ownership of water resources may be divided into 3 categories namely the public domain, state ownership, specific governmental power as of rights.[32]

Public domain

The concept of public domain has its roots in the French legal system and Roman Law[33] (Laitos, 1985; Sax and Adrams, 1986). After the French Revolution in 1789, all

[31] A water rights can be widely defined as the right to use or enjoy the flowing water in a steam. It may emerge form a person's ownership of land on the banks of the stream(riparian ownership) or from a person's actual use of the stream. It may be administered and controlled by a government agency or it may not be administered at all and be subject to enforcement only in the courts. A water right can also be crested indirectly through a contract with a rights holder. Some water rights are quantitative applying to a fixed amount of water measured by rate of flow. Others set no limits so long as the holder does reduce or pollute the flow available to other water right holders on the stream. Some continue only as long as the holder continues his specific water use while others continue whether he uses the water or not. In different parts of the world even among countries which have the same system of law(for example, the common law countries) and even within a single country, the regimes of water rights can be found to be very different. See A. Scott, 'The Evolution of Water Rights' (1995) Natural Resources Journal, 35, pp. 821- 858.

[32] See National Research Council, Study Report on Water Laws, Unpublished, 24-28(1993).(In Thai)

[33] The important features of Roman water law are the following: 1) All perennial rivers were publicly owned and administered by the state. 2) The banks of such perennial rivers were publicly owned as was the riverbed. 3) Running water itself belonged to no one and to everyone and the only interest a person could acquire in it was a temporary right which lasted only as long as the specific use continued. 4) Damage law stated that one must not impeded another's use of the water. 5) A prescriptive right to divert a certain quantity of water from one year to the next could be acquired by prolonged and unchallenged action over a

the common use property belonged to the state. In this system water resources are regarded as property for common use. No one can freely use water as his private property unless such use is authorised by the acquisition of permission or concession from the State. Such pressure on concession is assigned for the public interest. This principle helps to increase the State's role in managing water resources since the State has exclusive rights to authorise or enact laws or regulations for water control. Under this system, water rights[34]are not transferable between private individuals and cannot be obtained by prescription.

State ownership system

The Philippines, Peru, and El Salvador have adopted the State ownership system[35]. Under such a system, water is clearly specified as State property, the definition of which is still controversial. It is not clear whether "State property" means that State has ownership over water is similar to private ownership or the State holds water for the benefit of the public at large.

period of years. 6) It was permissible to transport water out of the stream land. 7) Rights to divert in a temporary or torrential river were private belonging to those who owned the land on either side. See A. Scott, opcit., pp. 834-837.

[34] It is interesting to address related ideas as the right to water as a human right and the right of one state to receive water from co-riparian sate. Much attention has been given to the right to health as human right and as a means of implementing that entitlement, the right to food. It cannot be said that the ideal of such rights is entirely unfounded or that it has only recently been conceived. Article 25 of the Universal Declaration of Human Rights adopted by the United Nations General Assembly in 1948 provides "Everyone has the right to a standard of living adequate for the health and well-being of himself and his family including food...". Surprising little attention has been given, however, to the question of whether there is a right to water and if so what the contours of such a right might be. Such a right could be envisaged as part and parcel of the right to food or sustenance, the right to health or most fundamentally the right to life. The right would have to be defined carefully so as to take into account all too prevalent instances of region wide water shortage. See S.C. McCaffrey, 'A Human Right to Water: Domestic and International Implications' (1992) Georgetown International Environmental Law Review 5, pp. 1- 24.

[35] For more details, see National Research Council, Study Report on Water Laws, unpublished, pp.24-28(1993).(In Thai)

Declaration of specific governmental power of right

Under this system[36], private individuals may own water resources provided that such private ownership is subject to State intervention for the public interest as provided by law. If such intervention causes damage to any person, he or she is entitled to compensation. Between private water users, each person is entitled to use water in such a manner as not to injure the right to use of water of another.

According to Thai law, it does not define who owns the use of water. Nevertheless, if appears that everyone has the right to use water as recognised by the Civil and Commercial Code, article 1304 provides a form of wording to confer water rights.[37] This indicates that water in rivers, canals, lagoons or waterways in the public domain is subject to public use under the supervision and protection of the State. Section 1304 omits to state directly that such water belongs to the State. It is possible through one interpreter to take this view. (Wongbandit, 1992).

It may be argued that water resources in general are subject to State control and private persons cannot own the title to water resources but only have the right to use water as specified by law. On the other hand, the State according to this system cannot control the private use of water unless it is clearly authorised by law.

However, under the three systems of water ownership, the State in one way or another is able to control water use. These rights of ownership may extend to rights of use. The only difference in these systems is the degree of control. Therefore, water resources in

[36] It was called "Determination of power and right" in A Study Report on Water Laws. Ibid., p. 25.
[37] "The public domain of state includes every kind of state property which is in use for the public interest or reserved for the common benefit, such as
(1).....Property for the common use of the people. e.g., foreshores, water ways, highways, lakes;....."

Thailand should be deemed as State property except those legally appropriated by private persons.

Water Supply

Problems of ownership appear insignificant when contrasted to the problems of water supply in Thailand. Increasing demands for water use includes water needed for domestic, agriculture, industry and related services. This gives rise to a severe potential for social conflict in Thailand. There are conflicting demands for increased access for water consumers. Pressure on water resources is likely to intensify as water supply and other natural resources continue to grow more scarce relative to the growth in the population and the economy. Particularly acute water problems are experienced in Bangkok because much of the industrialisation process has thus far taken place in the provinces constituting the Bangkok Metropolitan Region (BMR). On average, each year in Thailand water requirements total 52, 600 million m3. In specific sectors this demand includes the following: the agricultural sector 48, 170 million m3, the domestic sector (household) 3,120 million m3, the industrial and tourist sector 1,310 million m3. Thailand manages to maintain waters resources through irrigation and dams system of only 37, 740 million m3.[38] Demand is greater than supply. Management of water supply has failed to cope with increases in demands. The problem is that there are at least 38 governmental authorities working on water management involving 9 different ministries. Each authority works independently. There is little or no co-ordination between each authority. This leads to inefficiency and poor control.

Water supply problems in Thailand arise in three district regions. First, the central region where the basis of the problems are taken up with rice farming located in the

[38] Matichol magazine, June 1999, Vol. 981. pp. 29-30.

central plain near Bangkok. Irrigation farming has vied for water availability with other sectoral users. This has given rise to conflicts between the different needs of the users. Farmers and industrial urban users of Bangkok, all compete over the supply. The central region study by Thitinan (1994)[39] examines conflicts within and between river basins. Thitinan has identified two types: a) conflicts over water from a single or interconnected supply source, and b) inter-basin conflicts arising from the possibility of linking different supply sources.

The second region is the northern region. A study by Thanet (1994)[40] examines water conflicts in irrigation systems in this region. Issues here concern both the allocation of water among competing users and the maintenance of the systems themselves. Rapid urban developments in highland cities have led to increase upstream in the use of water that feeds into agricultural irrigation systems. There are with no legal or administrative mechanisms for resolving conflicts.

Third, the north-eastern region. This is a classic example of conflict between the salt miners and farmers, fishermen and household water users. The north-eastern region covers the Nam Siaw basin in north-eastern Thailand. Two questions arise: first, who should pay for improved water quality? Secondly, who are the main beneficiaries of water supply? Resolving both questions goes to the heart of the problem of the proper management of water supplies. Economic growth has its costs. The benefits need to be assessed against the shortcomings. Thailand must consider and assess the environmental costs of industrial growth.

[39] T. Pongsudhirak, 'Water Allocation Conflicts in the Central Region', in Water Conflicts (Bangkok, TDRI, 1994)pp. 238-258.

Water Pollution

Water supply must also be considered in the context of problems of water pollution. Water quality has deteriorated as a result of waste or wastewater discharges from agriculture, industry, and urban communities and pressure from water transport. In the case of water pollution, rapid industrial growth[41] has resulted in increasing pollution loads at sources of pollution. Intensification of agriculture and the expansion of pig, poultry and cattle raising has also contributed to non- source pollution loading.

Table 4.3 Water Quality in Major River

Chao Phraya	Standard(a)	1997	1998	1999
Upper	1.5	1.6	1.7	1
Middle	2	1.8	1.8	2.4
Lower	4	4	3.8	2.8
Tachin				
Upper	1.5	2.7	2	2.9
Middle	2	2.4	2.8	2.6
Lower	4	4	3.6	2.7
Mae Klong	2	2.2	1.8	2
Bang Pakong	2	1.3	1.7	1.2

(a) The standard water quality of river is regulary designed by Office of the National Environmental Board(NEB).
(b) BOD is Biological Oxygen Demand in the water.

Thailand has had the most serious problems with sources of biological oxygen demand (BOD). Discharges of untreated wastewater degrades the quality of the freshwater in a variety of ways depending on the waste (McEldowney & McEldowney, 1996). For example, studies undertaken into the sources of pollution indicate that BOD

[40] T. Charoenmuang, 'Resource Conflict and Conflict Resolution: The Governance of Water Allocation Problems in Thailand', in Water Conflicts, (Bangkok, TDRI, 1994) pp. 111-140.
[41] Three phases of industrial development can be delineated. In the first, growth comes largely from light industries like textiles and clothing, food and beverages which rank low in pollution intensity. In a second phase, certain heavily polluting industries take on importance(e.g. petrochemicals, cement, glass). In a third phase, electronic/electrical equipment, general machinery and transport equipment. Thailand is at phases one which most serious industrial pollution problem is usually water pollution from BOD/COD releases. See D. O'Connor, Managing the Environment with Rapid Industrialisation: Lessons from the East Asian Experience (Paris, OECD Development Centre, 1994), p.27.

releases in the food industry have risen almost as fast as sectoral value added: from 1980 to 1989, when the food industry grew by 124 percent, BOD releases rose by 111 percent. In the case of beverages, BOD releases actually grew faster than sector value added and the same was true for the paper industry. As for the textiles sector, value added grew by 120 percent and BOD releases by 95 percent.[42] The contamination of the rivers is not caused solely by industrial wastewater, domestic and agricultural waste waters are also significant sources of water pollution. Ninety- three percent of the total BOD load to the Mae Klong River in 1990 and 75 percent of the total BOD load to Chao Phraya River in 1988 arose from residential sources (Table 4.3) Agriculture contributes significant BOD loads to rivers in rural areas, e.g. the Tachin River and the Bang Pakong River (Table. 4.3).

In Thailand there are inadequate laws controlling waste discharges. There is no modern legislation or comprehensive code. Unlike many Western Countries Thailand has yet to confront the problems of waste management and the regulation of pollution thought discharges.[43]

Economic arguments are implied in that legislation has failed to confront these important problems. As a result, Thailand has a deregulated structure over discharges with a heavy cost to the environment. The study of the water quality in four major rivers of Thailand, namely Chao Phraya River, Thachin River, Bangprakong River and Maeklong River during the year 1981-1990 has provided evidence to show the extent of the environmental problems in Thailand. The quality of water in Chao Phraya[44] and

[42] The sectoral value-added growth figures are based on NESDB, Thailand (1992) and the BOD release figures are from Table 14, R. Sachasinh., et al., Thailand: Challenges and Response in Environmental Management (PARIS, OECD Development Centre, 1992),

[43] For example, see also at Sec. 69,water pollution of the 1992 Act.

[44] Please see also National Economic and Social Development Board, Office of the Prime Minister, Proposed Policy Plan for the Chao Phraya River(Bangkok, Office of the Prime Minister,1991).

Thachin River, particularly at their lower reaches is below standard and continues to deteriorate. The quality of water in Bangprakong and Maeklong River is close to the standard.[45]The studies also indicate that increasing drainage of waste contaminated all four major rivers. The sources of the waste include pollution from industrial factories comprising of toxic substances and heavy metals harmful to the public heath. Pollution was identified from metal factories, metal plating factories, repair and assembly factories, electronics factories and chemical factories. There is also evidence of pollution from household communities.[46] Deterioration in water quality over the last decades or more is evidence from the studies in 1991. In another report of the Office of National Environmental Board(ONEB(1992)) identified an increases in industrial releases of BOD these were shown to have increased by 48 percent in 1978-84 and by another 43 percent in 1984-89(to 800,000 metric tonnes). Projections for the period 1991-2001 show another doubling of industrial BOD release with the major contributors being the sugar, pulp and paper, rubber and beverages industries. (Ambient Dissolved Oxygen(DO) and BOD levels).

Thailand's modern evolving environmental problems are in sharp contrast to the past. Once surrounded by harmonious rivers and covered by green forests Thailand is today a country burdened by ecological deterioration and environmental pollution. Forests originally covered more than 50 % of the country. Between 1961 and 1988 more than half of the original extension was deforested mostly to expand the agricultural frontier.

[45] See Water Quality section, Environmental Quality Standard Division.(1992)Water Quality of Main Rivers in Thailand in the last Decade(1981-1990),Bangkok, Office of National Environment Board.(In Thai)

[46] The research said industrial factories contributed approximately 25% of water pollution while the remaining 75% were caused by wastewater from household community. See Panthumvanich, Theera, et al.,(1990) Industrial Development and Current Environment, paper presented at Seminar on Policy and Guidelines for Wastewater Management in Thailand, held by the office of National Environment Board.(In Thai)

The remaining forests cover only 28% of the total national territory according to a recent study carried out by the Royal Forestry Department.[47]Catastrophic landslides and heavy flooding occurred in the South of Thailand in 1989. The country's cultural history flourishes along the banks of the Chao Phraya River. For Thai people, rivers have a spiritual dimension symbolised by the Goddess Phra Mae Kongka. Many popular and royal rituals are ceremonially developed around water.[48]Nevertheless, this cultural heritage has not transcended into Thailand's policies for the conservation of its water resources. Water pollution is most serious in the great Chao Phraya, Tha Chin, Mae Klong and Bang Pakong Rivers as well as in the Gulf of Thailand and the southeastern coastal areas. The major sources of pollution are wastewater of domestic and industrial origin, agricultural run off and biocides. Information gathered by the National Environmental Board, NEB suggests that the water of the Chao Phraya and Tha Chin Rivers are completely polluted particularly the deeper waters where dissolved oxygen (DO) descends to zero during the summer. The most polluted part of the river flows through Bangkok, 75% of this pollution is of domestic origin and the remaining 25% from industry. Sugar mills, paper mills, distilleries and food processing plants all contribute to pollution.

[47] P. Tasneeyanond and D. Nifosi, 'Implementing the Asean Agreement on the Conservation of Nature and Natural Resources', A Report on the Sufficiency of the Thai Law , Bangkok, Preliminary Draft, 1992.
[48] T. Piyakarnchana, 'A long Struggle for a clean Environment Protection in Asia and the Pacific', Water Management and Environmental Protection in Asia and The Pacific, (Japan, University of Tokyo press, 1983), p.51.

Conclusions

The environmental problems currently facing Thailand present serious constraints to future economic growth and sustainability. Immediate policy measure and actions are required to mitigate adverse environmental impacts and to rehabilitate degraded natural resources especially water resources and water pollution, in order to avert the possibility of the future economic decline. Thailand is a country in the midst of dramatic changes; changes in the nature and quality of life of its people, in the structure of its communities and in the foundations of its economy. In the past, Thailand was a rural society in which local communities were dependent on the natural resources which surrounded them and the national economy relied on the export of a small number of native crops. The sustainable use of resources was a fundamental aspect of rural life; people understood the inter-relationships between the different components of their local environment and their activities were defined by the need to protect their surrounding resources.[49] Over the last two decades, Thailand has undergone considerable industrial development and urbanisation such that it is approaching the coveted Newly Industrialised Country status(NICs).

However, economic growth and industrial development have been achieved at the expense of the environment and the country's natural resources base. The challenge for Thailand is to manage the changes taking place in the country in such a way that the well being of the people is enhanced without sacrificing the national, regional or global

[49] There are also various religious beliefs that exert significant on the people's way of life. The beliefs are influenced from the knowledge of Buddhism, Hinduism (Brahmin), and animistic spirit. "Spirits" is a general term that includes the dead, ghosts, benevolent spirits and malevolent spirits. These spirits are believed to exist virtually everywhere: in forests, hills, water, trees, paddy fields, animals, the earth, etc. The spirits are to be respected and mistreating them can result in disaster. See P.Vityakon, The Traditional Trees-in-Paddy Fields Agro-ecosystem of Northeast Thailand: its Potential for Agro-forestry Development, (Hawaii, East-West Center, 1993), p. 9.

environment. The bulk of natural resources is now depleted or deteriorated and environmental problems have emerged. In the future, economic development will need to concentrate on improving and increasing efficiency in the use of the remaining natural resources for the greatest benefit. The conflict between utilising and conserving national resources must be contained in order to facilitate both further use and future conservation of the environment.

PART II WATER RESOURCES AND THE LAW IN THAILAND

Part II of the thesis is focused on the problems of water resources. It is divided into three chapters. Chapter 5 provides general information and details about water resources and water quality in Thailand. Chapter 6 provides a critique of the Enhancement and Conservation of the National Environmental Quality Act of 1992 (hereafter the 1992 Act) Thailand's legislative regime on environmental protection. In particular it outlines the policy background and governmental administrative framework behind this regime; it also gives a detailed analysis and discussion about regulating the environment and water resources and the law in Thailand. Chapter 7 presents the water case studies from different regions in Thailand identifying many environmental problems.

Chapter 5 Regulating Water Resources and Water Quality in Thailand

Introduction

Thailand's fast economic development has left many agricultural parts of the country unaffected while city and urban dwellers were affected and the Bangkok area especially experienced unprecedented wealth and prosperity. The distinction between the poor and the wealthy; between the agricultural and industrial sectors; between adequate water resources and inadequate water quality is inadequately addressed in current environmental legislation.

We now turn to examine in more detail water resources in Thailand and how water quality is regulated. This point becomes clear when we analyse the Thai system of environmental protection. The chapter is divided into three parts. Part I begins by providing the technical and geographical background necessary to understand Thailand's complex and unique water resources situation. Part II examines the major legislation on water resources and industry and finally Part III examines the current challenges facing Thailand.

Part I Thailand's Water Resources Realities: Physical Constraints, Multiple Uses and Environmental Impact

During a period of rapid development water resources are fundamental to success and economic development.[1]The pressures on the Thai government over water supply and its effective management are considerable. The Thai economy requires an adequate quantity and quality of water to meet the demands for these changes. Considerable investments were made in Thailand's water resources infrastructure. For example, between 1970 to

[1] See P. Pasuk and B. Chris, Thailand Economy and politics, (Kuala Lumpur, Oxford University Press, 1995); W. Peter G. and N. Bhanupong, Thailand's Macroeconomic Miracle: Stable Adjustment and

1991 only 26 dams[2] were built for public water supply, hydropower, irrigation and flood protection. The life of some existing reservoirs was reduced by heavy loads of sediment from soil erosion. Groundwater aquifers in the Bangkok Metropolitan areas had been overused in the last decade due to increasing industrial demands and an increase in the local population. Water pollution in many major rivers in Thailand caused increased contamination of water for use for human consumption. Thailand faced a serious problem of water resources. To meet the potential demand, it requires adequate quantity and quality of water for agriculture and other uses, but especially for industry. It means that appropriate water control and management must be ensured to preserve water resources for future generations.[3]

Some encouragement may be taken from Thailand's enactment of laws concerning environmental protection, water allocation and use, and the prevention and control of water pollution. Also encouraging has been a general increase in environmental awareness among the leadership and general public, as well as some recognition of the need to balance economic development and environmental quality. In actual practice, however, no real balance has been achieved to date, as the national desire for economic expansion and the individual pursuit of greater material well-being have overshadowed the difficult choices required to improve the quality of Thailand's environment. Given Thailand's preoccupation with rapid economic development, it remains unclear whether its government possess the political will to proceed with the country's modernisation program in a manner that makes wise or efficient use of Thailand's precious water

Sustained Growth, (Kuala Lumpur, Oxford University Press, 1996): K. Medhi, Thailand's Industrialisation and its Consequences, (New York, St. Martin's Press, 1995).

[2] M.Tylor, Richard, Handbook 1994; International Water Power&Dam Construction, (UK, Reed Business Publishing Group, 1994).

resources and protects water quality through widespread enforcement of legally mandated pollution control measures.

In more detail, prioritising the problem of focusing water resources management requires considerable skill and technical expertise. The highest need is divided into two categories:**(a)** Water supply and distribution including water quality, use of water and instream uses of water. **(b)** Energy and power.

(a) Water Supply and Distribution

As explained in the previous chapter the problem of water supply and shortages of water resources are among Thailand's most significant natural resource problems. At first glance, this may seem surprising, since Thailand's water resources appear to be relatively plentiful in absolute terms. As of December 1, 1999 Thailand has water reserves of 4.1 billion cubic meters at the Bhumibol and Sirikit dams, these are down from the normal levels of 8.6 billion cubic metres because the rainfall in the Northeast and Central Plains this year had been 16% lower than the average[4]. In order to appreciate Thailand's water supply and its associated problems, one must understand several unique characteristics: large geographical differences in the distribution of moisture, strong seasonal periods of precipitation, high probabilities of prolonged droughts, and recurrent fluctuations between droughts and floods.

Thailand's water situation cannot be understood simply by looking at nation-wide totals. The distribution of water resources in Thailand is extremely unbalanced geographically, with large amounts of water in the central area and relatively little in the Northeast. This necessitates the need for planned water conservation. Thailand has

[3] For more information concerning Thailand's widespread water supply shortages, see at http/www.bangkokpost.net. (Bangkokpost Dec 31, 1998, 'Consumer told to save water now' and Bangkokpost Jan 2,1999,'Water shortage leaves key sectors needing help')

around 15 rivers with a drainage area exceeding 100 square kilometres each. Most streams flow into the great rivers of central and Northern Thailand. As a result, eighty-two percent of the country's surface water is in the central area, while the Northeast contains a mere eighteen percent. This highly unequal distribution of water has substantial practical implications for the people of Thailand. For example, the densely populated area of north-eastern Thailand which contains sixty-two percent of the nation's farmland, produces forty percent of its food, and accounts for nearly fifty percent of its industrial output--must make do with a much smaller water supply than the south. North-Eastern cities frequently experience water shortages. Thailand's water situation is also heavily influenced by high seasonal periods of precipitation.

The primary source of water resources in Thailand is rain. As a result of Thailand's monsoon climate, seasons vary substantially in precipitation, with light rainfall in the winter and spring and frequent rains in the summer and autumn. The four-month period from June through to September brings eighty-five percent of annual precipitation in the north and sixty to seventy percent of annual precipitation in the Southeast. Precipitation in Thailand can vary significantly from year to year, and the country's rivers commonly sustain periods of several years of drought or flood. Contending with drought has been an ongoing struggle for many of Thailand's cities, provinces, and regions. The fluctuations in Thailand's precipitation also increases the danger of periodic flooding, a major hazard throughout the nation's history. Severe floods typically result from prolonged monsoon storms and are sometimes exacerbated by typhoons. Floods have major impacts upon the Thai people, given the amount of settlement along major river courses; about one-tenth of Thailand's territory, inhabited by almost two-thirds of its

[4] Bangkok Post Jan 2, 1999, 'Water shortage leaves key sectors needing help', http//www.bangkokpost.net-

population and producing approximately seventy percent of all agricultural and industrial output, is below the flood level of major rivers. Because water resources are not evenly dispersed geographically, seasonally, or annually in Thailand, the disparity between water supply and use can be critical. The seasonal imbalance of precipitation, the frequent droughts attributable to wide annual disparities in precipitation, and the location of major population centres in the relatively arid Northeast create a great need for an increased water storage capacity in Thailand. Many existing storage facilities were constructed as part of an extravagant program of dam building during 1980-1990, this program was initiated by the government to radically accelerate the pace of Thailand's industrialisation. Thailand had only three dams of appreciable size in 1970, by 1980 there were ten large dams. By 1991, there were 26 dams in all.[5] Thailand's plans for modernisation and economic expansion require enormous amounts of water for purposes such as thermal electricity generation, further intensification of farming, and expanded urban housing. It has been estimated that in order to support Thailand's projected economic expansion in the 1990s, the nation's additional water needs will be between sixty and ninety trillion metric tons. Moreover, as people's living standards rise through Thailand's modernisation program, per capita demand for water can likewise be expected to increase.

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access to internet on Jan 2, 1999.

[5] The hydropower potential is 17,750 GWh/year (Giga Watt Hour per Year)5 and small hydropower is 109 Gwh/year. See United Nations, Assessment of Water Resources and Water Demand by User Sectors in Thailand, Op. cit. and The International Committee on Large Dams,World Register of Dams(Paris, 1989).And R. M.Tylor, , Handbook 1994; International Water Power&Dam Construction, (UK, Reed Business Publishing Group, 1994). And United Nations, Groundwater in Continental Asia, Op. cit. W. Bello, 'Damming the Countryside', in A Siamese Tragedy: Development and Disintegration in Modern Thailand (1998), op cit., pp. 206-218..

Thailand is already utilising a large proportion of its usable surface water resources. Annual withdrawals of water for agricultural, industrial, and household uses during the late 1980s were almost one-half of the potentially usable stream flow. The addition of groundwater to the water supply equation does not improve the situation in the heavily populated north-east, where the use of surface water is currently forty-three to sixty-eight percent and use of groundwater ranges from forty to eighty percent of total extractable supply. Thus, this region is already utilising most of its usable extractable groundwater.[6] Thailand's plans for modernisation and economic expansion will have to be adjusted to these stark realities of its water supply situation. Current supplies are strained, while substantial new supplies do not appear to be readily available. Some observers have taken the view that social and economic development in the north-east provinces has already surpassed what water resources in that region can sustainable support, as evidenced by successive water crises after periods of drought. In the very least, it is clear that providing water for expanded use in Thailand's area of greatest need, the semi-dry and dry northern provinces, will be increasingly difficult in the future.

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[6] Because owing to lack of data, it is not possible to ascertain the expect amount of water reaching the groundwater. Tentative hydrological balance studies of different regions in the country indicate that only about 12.5 top 18 percent of the total rainfall infiltrates the soils. It is estimated that direct percolation through the soil and seepage from streams that becomes groundwater constitutes only 70 percent of the total infiltration. This amount of water comprises only 8.75 percent of the total rainfall. The estimate is only valid for basins with favourable hydro-geological conditions such as those of Northern Highland, the Upper Central Plain, and the Guff coastal plain. The Lower Central Plain where about half of the total area is covered by thick marine clay is estimated as only 6 percent of the total rainfall. In Khorat Plateau more or less impenetrable soft shallow cover the central part it is estimated that about 5 percent of the total rainfall reaches the aquifers. United Nations, Groundwater in Continental Asia, Op. cit.

Water Quality

One of the main problems in Thailand is the question of water pollution as explained in the previous chapter. Water pollution in Thailand's rivers and lakes has historically been a serious problem, affecting fish and wildlife populations as well as human health and safety. Between eighty and ninety percent of Thailand's wastewater is discharged directly into waterways without treatment, contaminating ninety percent of the waterways around cities. Industrial sources are responsible for seventy-five percent of these discharges, with the remaining twenty-five percent of such discharges attributable to households.[7] The results of this water pollution have been dramatic, as fish and shellfish have completely disappeared from some rivers, human populations have suffered serious health problems, and a few heavily polluted river surfaces have even caught fire.

Most of the seriously polluted water in Thailand is in big and medium- size cities or neighbouring areas. Rivers in sixty-nine percent of these cities are contaminated to varying degrees. Eighty-five percent of Thai cities do not have enough clean water to meet demands.[8] Supply conditions are also poor in many rural areas, as only one Thai person in seven in the countryside has safe drinking water. High concentrations of small manufacturers in rural areas release heavy metals and other untreated wastes into Thailand's waterways, resulting in contamination that threatens fish production.[9] In addition, an average of 3.5 billion tons of silt annually block Thailand's rivers, due in part to erosion from deforestation in upper watershed areas.[10] The consequences for human health is grave. Uncontrolled human waste dumping from residences along the river has

[7] M. Unkulvasapul et al., Thailand: Urban Sewage and Wastewater Management in Sector Development Vol. 1, Summary and Main Report, (Bangkok, UNDP/World Bank, 1991), p. 86.
[8] P. Eamsakulrat et al., 'Hazardous waste management in Thailand', TDRI Quarterly Review, September 1994, p. 9
[9] P. Kritiporn et al., The Greening of Thai Industry (Bangkok, TDRI, 1990), pp. 8-11.
[10] Bangkok Post, 15 September 1993.

raised the coliform bacteria (from human waste) count to extraordinary levels. For instance, in the Bangkok area at the entrance to Klong Phra Khanong, the count is over 1.3 million MPN(most probable number) per 100 millilitres compared to a standard of 50, 000 per millilitres.[11]Also alarming is the fact that at Sam Lae where the Metropolitan Water Authority draws its water for use in Bangkok, the water has reached critical pollution levels. As of 1991, the BOD level which by the official standard should, not exceed 2 milligrams per litre had shot up to 4.6 mg/l. Moreover, the volume of bacteria in 100 millilitres of water stood at 700, 000 colonies way past the standard of 20, 000 set for the river at the Sam Lae area.[12]It is not surprising that one of Thailand's booming industries is the bottled water business at least the illusion of clean drinking water.[13]

A cleanup of Thailand's severe water pollution, which will of necessity be gradual, given the extent of the problem, is a critical part of improving environmental quality as Thailand proceeds with its modernisation plans. Recent statistics and future projections are not encouraging: discharges of wastewater have increased from 1, 149,324 metric tons of hazardous wastes in 1986 to 2 million metric tons in 1996, it is expected to reach 3.5 million tons.[14] Clearly, Thailand has a daunting task in front of it to clean up its rivers and lakes as it moves forward with economic expansion.

[11] Bangkok Post, 'Growing pollution problems in Chao Phya river surveyed', 26 June 1991.
[12] Ibid.,
[13] W. Bello, A Siamese Tragedy: Development and Disintegration in Modern Thailand (1998), op cit., p. 125.

Water Use

Water use in Thailand falls into in two categories as set out below:

Agriculture Water Use

The average annual growth rate of irrigated areas between 1980 and 1990 was 3.6 per cent. This growth declined to 2.5 per cent per year between 1987 and 1990. It should be noted that the average annual increase in irrigation water use between 1980 and 1989 was 0.84 km^3 per year. Therefore, the estimate for water use for irrigation in 1990 is in the order of 30 km^3. The central region is a main agricultural area in Thailand. At present, about 83 percent of the total water in this area is used for agriculture of which 54 percent is used for irrigation, 29 percent for aquaculture and 1 percent for livestock farming. Water for aquaculture is drawn from groundwater because of the serious river pollution. The over drawing of groundwater has caused the water table to fall and the land to subside. About 10 percent of agricultural water has been affected by the pollution of water from factories and from agriculture (excessive use of pesticides and fertilisers and discharges by livestock). It is estimated that agricultural production has been reduced by 10 to 30 percent because of water pollution. The annual per capita consumption of rice in Thailand has fallen drastically in the past decades because it produced too much rice to export. This situation led the government in 1984 to change its traditional food policy to a nation-wide paddy land conversion programme to reduce simultaneously the total production of rice and raise the income of rice farmers. The cultivated area of paddy rice in the central region is expected to reduce by more than 25 percent over the next 10 years. It was hoped that this land conversion programme would also conserve water.[15] Farmers were encouraged to plant crops such as maize, sorghum and wheat which used water less

[14] TDRI, Quarterly Review, September 1994, p. 10.

intensively than rice production. However, the government failed to map out a plan for saving water, so the amount of water used for agriculture has not decreased. In addition, this conversion programme has faced problems, many farmers still use traditional ways of growing rice and they will never change their attitudes towards agriculture. Thailand's monsoon climate, in which seventy percent of all precipitation falls from June to September, does not naturally accommodate the needs of agriculture, where demand for water is greatest in the spring and early summer. Consequently, irrigation is necessary for successful food production. Agriculture is by far the largest demand on water resources in Thailand, accounting for eighty-eight percent of total water consumption. Thailand irrigates approximately one-half of its currently cultivated land, a much larger proportion than in the UK. This high dependence on irrigation is of a relatively recent origin, with much of it developing after 1950. Thailand's irrigation works currently have the capacity to store 426 billion cubic meters of water. Irrigation water is made available from large and medium-size reservoirs (twenty-nine percent), smaller reservoirs (twenty-five percent), and diversions from rivers (forty-six percent). Thailand has been able to support her own population, and has even started to move its people beyond mere subsistence, by expanding its cultivated land base. However, while cultivated area has increased rapidly in the past two decades, this increase has failed to keep pace with Thailand's huge population growth, resulting in a steady decline of the amount of cultivated land per capita. Because of this inability to keep up with population growth, the principal strategy of Thailand's agricultural development is intensification in farming, and the two most important factors to successfully implementing this strategy are irrigation and fertilisation.

[15] S. Christensen et al., 'Better water management needed', The Nation, 17 September 1993.

Irrigation is highly inefficient in Thailand. Only twenty-five to forty percent of irrigation water being used effectively. As a result of this inefficiency, the volume of water used in agriculture is unusually large. Irrigation systems are often poorly built and plagued by seepage. In addition, many irrigation systems are incomplete, as large- and medium-scale projects irrigate less than seventy percent of designated areas. Moreover, unsophisticated irrigation methods predominate, such as flooding, which uses up to twice the amount of actual water requirements, thirty percent more than spray irrigation, and fifty percent more than trickle irrigation. In a quest for self-sufficiency in agricultural production, Thailand's agricultural policy has focused on expanding irrigation, despite substantial economic and environmental costs. The enormous amount of water used by Thai agriculture is not available for other uses, including expanding municipal and industrial demands, which must get by with constrained supplies. In addition, use of water for irrigated agriculture has adversely affected water quality. Declining water quality has affected food production potential for the country as a whole. Surface irrigation on the North Thailand Plain has also had the detrimental environmental effect of elevating the bed of the Ping River, as diversions have reduced the transport of silt and resulted in its deposition on the riverbed. Since the magnitude of these detrimental impacts increases with the amount of water used by irrigated agriculture, one can reasonably expect that more efficient use of water will lead to a reduction in agricultural consumption and thus environmental degradation.

Municipal and Industrial Water Use

Although the agricultural sector consumes the vast majority of water in Thailand, rapid growth in the use of water for municipal and industrial purposes further exacerbates the demand for Thailand's limited water supplies. Consumption of water in Thailand's

large cities averages a modest 100 to 150 litres per day per person, compared to consumption of 200 to 300 litres per day by people in large cities of other countries. Underlying this modest use, however, is a trend that should cause some anxiety. In the two decades between 1967 and 1987, water consumption doubled in all Thai cities with increased urban development and improved living standards, with the consumption rate continuing to increase by an average of four percent annually.

In the heavily populated north-east areas of Thailand, people generally use less water per capita per day than in other areas of the country due to their relatively constricted supply. Nevertheless, in this north-east region, where most water is used by agriculture, increasing concern developed during the 1980s regarding the adequacy of the region's urban water supplies. A basic problem with Thailand's north-east urban water supply is the inadequacy of local streams and reservoirs to satisfy rising municipal demand. Water shortage problems have become particularly serious in these areas which roughly eight million inhabitants. In these areas, water shortages have also increasingly jeopardised economic development. In the big cities like Nakonrachaseema, for example, over eighty percent of surface water and groundwater recycle is already used. Overall demand for water in this area is expected to more than double with the projected economic development between 1980 and 2000. Thai industries use inordinate amounts of water, largely because their water use is highly inefficient. Paper, steel, and other major industries consume five to ten times as much water per unit of output as their counterparts in developed countries. Thai industries not only consume excessive amounts of water, but they are also poor recyclers of water, recycling only about one-fifth of their extraordinarily high water use. This poor recycling of industrial wastewater obviously contributes to water shortages in urban areas.

Increased water consumption in urban areas of Thailand is partially attributable to inefficiency as well as to increases in economic activity and rising standards of living. Underground water distribution systems in Thailand's urban areas are in serious disrepair and consequently waste considerable amounts of water. Most water pipes in Thai cities were laid before the 1950s and have had only patchwork repair in subsequent years, with the result that seepage rates are generally five to ten percent and as high as fifteen percent in some areas. Poor pricing policies also encourage inefficient water use. Thailand's urban population and industries pay only a fraction of water's real cost. Because the cost of water is so low, there is very little incentive to use water sparingly. Many industrial enterprises are more willing to pay higher prices for water than they are to build water-recycling facilities that would conserve water and save money in the long run.

While these examples suggest that improvement of Thailand's north-east water shortage situation could be realised through more efficient and rational use of existing supplies, the Thais have instead moved closer to a more expedient but potentially environmentally risky solution inter basin water transfers. In an attempt to reduce Thailand's urban and regional water supply shortages, increasing attention has been given in recent years to large inter basin water transfers to the Northeast. The most ambitious of the inter basin water transfer proposals[16] has been referred to as the Kong-Chi-Mun Project[17]. It was proposed, the project would transfer as much as 26,600 million m3 per year of water from the Mekong river into the Chi and Mun rivers flows without its

[16] P. Hirsch, 'Thailand and the new geopolitics of Southeast Asia: resources and environmental issues', paper presented to Fifth International Conferences on Thai studies, School of Oriental and African Studies, University of London, London, 1-10 July 1993, p. 5.
[17] K. Rayanakorn, 'Public Participation' in Environmental Management in Thailand (Bangkok, TDRI Working Paper, 1997), pp. 7-16.

optimum use.[18] It is appropriate to dam up some of the water for better utilisation within the country as well as diverting more from the Mekong river for such purpose if needed. The project would divert and transport water from the Mekong River at the point where it flows past Loei and Nong Khai provinces into basins. While the idea of water transfer has a long history, its recent revival in 1989[19] brought about Thailand's first substantial expert and public challenge to a central government decision on the basis of environmental sustainability. The project has been criticised on the grounds that it would lead to a number of detrimental environmental effects, including sea water intrusion at the mouth and in the estuary of the Mekong River, salinisation and alkalisation of newly irrigated fields in the north-east, and the introduction of undesirable aquatic species into the river ecosystem. Whether Thailand chooses to meet its increased municipal and industrial water requirements in the future through such large inter basin transfer schemes or through more efficient use of already developed water resources remains to be seen. Given the scope, magnitude, and geographical impact of the choices, these decisions will have ramifications for the entire country.

In-stream Uses of Water

At the same time that Thailand faces the prospect of increasing its water withdrawals and consumption at a substantial rate in the future, it faces a growing need and demand for non-consumption in-stream use to protect ecological values and water quality. In-stream uses of water are of direct economic importance, hydroelectric power, navigation, and fishing, are targeted for major expansion in Thailand's modernisation plans. Other in-

[18] D. Hubbell, 'Environmental and social impacts of large dams: experiences from around the world', Thai Development Newsletter, no. 25(1994), p. 23.

[19] The project was approved as an urgent agenda at a mobile Cabinet Meeting of Chartchai government in Khon Khaen on 8 April 1989. The project is a gigantic water development project divided into three phases spanning over a 42 -year period from 1992-2033. It would require a budget of 228,000 million baht(US$ 9,120 million).

stream uses of indirect economic benefit are dilution of waste in rivers, prevention of saline intrusion where rivers empty into the sea, and minimisation of silt build-up at mouths of large streams such as the Chao Praya River. As Thailand's standard of living and leisure time increase, in-stream uses such as recreation and wildlife habitat preservation will continue to assume increasing importance. More active river recreation, for example, is already becoming of greater importance. Commercial and other organised white water trips are currently run on a number of rivers, including the Mekong. Much potential exists for future white water expeditions, commercial white water river ventures, and recreational boating, on Thailand's magnificent rivers.

Water and aquatic environments serve as crucial wildlife habitat throughout Thailand. Thailand is one of the world's richest countries in wildlife resources, with ten percent of all wildlife species in the world. Historically, wildlife has not been well protected in Thailand. The main reason for most species becoming endangered or extinct in Thailand, as has been the case elsewhere, is the alteration and destruction of natural habitat. Impacts upon wildlife habitat have occurred through a variety of activities involving Thailand's water resources, such as the construction of water projects, industrial pollution, and agricultural production. Thailand has many unique aquatic species, some of which are in jeopardy due to water resource impacts. In 1987, the Environmental Protection Committee published a notice listing more than 200 species of animals requiring special protection. The impact on animal life in the rivers has been drastic with the fish species in the Chao Phraya dropping from 121 in 1967 to 31 in recent times.[20] Thailand's water resources serve a critical role in providing habitat to its increasingly imperilled wildlife population, especially threatened aquatic species.

[20] Daily New, 28 September 1994.

General speaking, in Thailand water has traditionally been an abundant resource, unlimited in supply and renewed annually by nature, free of charge. But today the situation has changed dramatically. As mentioned above, water use in major sectors is increasing rapidly while the supply of water is becoming ever more scarce. It is easy to understand why the demand for water is rising so rapidly. Population growth in urban centres, increasing numbers of tourists, higher incomes and the subsequent changes in lifestyles and the rapid spread of industrialisation are all factors that induce an increase in water consumption.

The situation poses a management problem for the government especially concerning the public sector, aggravated by the fact that new sources of water in urban areas are increasingly difficult and costly to obtain. By tradition, water management in Thailand tends to be supply-oriented; far less attention is given to demand management and appropriate pricing. These are similar problems with water pollution, it is obvious the government alone could not tackle these problems as water resources deteriorated very fast in recent years. At present, governments provide water and wastewater services because both are for the public good. Historically, however, governments have failed to provide a service that is financially sustainable and economically efficient. A common cause of these problems is supply planning in which officials consider neither the full costs nor the benefits of these services when making investments, production and pricing decisions. Like many other developing countries, demand for water and wastewater services exceeds the government's current supply capacity. In the present situation how might a public sector like water management be privatised? By tradition, water provision in Thai cities is all that is undertaken by the public sector (The Water Metropolitan Authority of Thailand) and a number of small-scale vendors fill the gaps in the areas

outside the range of the public sector service. New forms of private participation in water supply may induce new dimensions in water management such as advanced technology, improved service quality and the ability to respond to the needs of people.

(b) Energy and Power and Impact on Water Resources

Thailand's energy resources will play a major role in its future plans for economic expansion and modernisation. Unlike many developing countries seeking to achieve economic modernisation and improved quality of life without an adequate resource base to supply the energy necessary for industrialisation, Thailand is relatively well-endowed with energy resources. Indeed, Thailand has in the past undertaken extensive development of its substantial energy resources for economic advancement. Despite this extensive past energy resource development, however, Thailand's current estimated electricity supply falls twenty percent short of requirements. Rural energy shortages are particularly problematic. Electrification of Thailand's rural areas is still quite rudimentary, as more than 10 percent of all peasant households still do not have any electricity at all.

Thailand's energy needs are projected to grow substantially during the next generation. Such growth is due both to the country's continuing large population increases. The ambitious goals for economic modernisation are bound to increase levels of per capita energy consumption which are already well below that of other countries with higher standards of living. This growth in energy production will have substantial implications for Thailand's water resources, both with respect to water use and water quality and the nation's overall environmental health.

Hydroelectric Power: Present Development and Prospects for the Future

Thailand's energy production has perhaps the most direct effect on its water resources with respect to the generation of hydroelectric power. Thailand has one of the largest hydropower resources. There is significant expansion potential for at least the next two to three generations. Currently, however, hydropower accounts for only 4.9 percent of Thailand's energy production. By 1970 three large dams had been constructed, by 1980 there were ten and by 1991 there were 26 with an installed capacity of 2, 427 MW.[21] In an effort to achieve a sustainable level of energy growth, Thailand has adopted a policy of active development of renewable energy sources such as hydropower wind, solar, and nuclear power, which would allow a reduction of fossil fuel consumption. Development of these renewable resources is not to be undertaken without consideration of environmental impacts, however, as the policy provision in building and planning hydropower stations, give high priority to reducing damage to the biological and natural environment. Small-scale hydroelectric projects built primarily with local labour and funding are one of Thailand's most notable accomplishments in the energy field. Most of the power generated by small hydroelectric projects is used by rural enterprises for water pumping and crop processing. While further construction of small-scale hydroelectric projects may appear to be a desirable localised option for easing rural energy shortages, such projects face significant environmental limitations.

Large-scale hydroelectric projects also figure prominently in Thailand's energy development plans. Thailand's post-1980s modernisation plans include a massive construction program of large hydropower facilities. Originally, this program was planned to quadruple the installed capacity in only twenty years. The installation of 50

billion watts of new hydropower capacity during the 1990s would require the flooding of 60,000 to 90,000 hectares of land in riparian corridors and resettling an estimated 1 million people.[22] Thailand's large hydroelectric projects have generated a great deal of environmental controversy, especially recently. With industrial and urban growth continuing as predicted but with local water supplies becoming more and more unpredictable, partly due to depletion of watersheds and deforestation, Thailand through EGAT(the Electricity Generating Authority of Thailand), has sought to harness the water resources of neighbouring countries especially in Burma and Laos for its own use.[23] But perhaps the most ambitious and potentially most ecologically disruptive is the plan to dam the Mekong river put forward by the international governmental Interim committee.[24] Some eight dams making up the so-called 'Mekong Cascade' would be built on the Mekong river itself. Another plan is to divert water from the Mekong river to the Khong, Chi and Mun rivers in Thailand to boost electricity generation at the Uborat and Lam Pao reservoirs and provide a new water supply for irrigation.[25] Critics claim that the economic benefits expected from the energy these projects generate do not outweigh the environmental costs.[26]

Reliance on Coal, Impact on Water Resources, and Environment

An alternative to Thailand's expanded development of hydroelectric resources as a means of supplying its future energy needs is continued heavy reliance on coal. Thailand's continued reliance on coal in the future will significantly impact its water

[21] D. Murrey, 'Dam(ned) conflicts in Thailand', Occasional Paper No. 21, Indian Ocean Center for Peace Studies (Perth, 1992), pp. 4-5.
[22] M. Trasawasdichai, 'Largw dams Versus Common Good of People', The Nation, 25 January 1994.
[23] 'Three Thai companies submit bids for building dams on Salween river', The Nation, 9 September 1996, A6.
[24] B. Shanahan, 'Agreement for the Sustainable Development of the Mekong River Basin', in Georgetown International Environmental Law Review Summer 1996, Vol. 8.
[25] D. Murray, Ibid., pp. 33-34.
[26] 'Dam and reservoir projects studied', Thai Development Newsletter , No. 25 ,1994, p. 2.

supply situation, particularly in the north. Less than one-fifth of Thai coal is washed and sorted before marketing, thus causing excessive particulate and sulphurous air pollution when burned and adversely affecting human and ecosystem health. Expansion of coal-washing facilities because of high-energy demand will further stress inadequate northern water supplies. Water needs for expanded coal extraction and coal-fired electricity generation in northern Thailand is particularly problematic, since these needs are disproportionately concentrated in Lampang, the northern province which has the greatest water shortages. Thailand's dependence on coal has substantial environmental implications in addition to excessive water use. Thai high-sulphur coal, largely unclean and burned with minimal or no air pollution controls results in very serious air pollution and acid rain. Thailand also contributes significantly to global warming through its burning of coal, which releases carbon dioxide, viewed as the most prominent and destructive of the greenhouse gases. The increasing rate of production of carbon dioxide will likely make Thailand the highest emitter of greenhouse gases during the second decade of the next century, this will further increase international pressure on Thailand with regard to global warming.

Part II The Legal Framework for Thailand's Water Industry

Thailand's water industry consists of a number of companies and privatised utilities. Thailand's current legal framework for water companies' regulation and pollution control has on impact on a plethora of bodies. The water industry has been a public enterprise in Thailand from the beginning. There are many reasons for this, first the water industry is considered as a 'national asset' or one of the public utilities so it should be owned and operated only by the state. Secondly, the problems of investment, private sectors had no funds to invest in this kind of enterprise. Between 1961 and 1986, strikingly many Thai

public enterprises were privatised but this did not extend to the Water Authority. The privatisation programme was achieved on a piece meal basis and the result is a complex system of water industry. There are 14 "authorities", four banks and five "offices of institutes" created by *statute*, 21 "organisations" set up by *royal decree*, 12 companies under *civil or commercial code* and four factories created by cabinet resolution.[27] Thirdly, the difficulties of the law because of these differences in legal status, some PEs must receive Cabinet approval of their investments while others need not. The two Water Authorities require approval before any changes are made. This is why the private sector was excluded from the beginning. In practice, however, the PEs are controlled more strictly if they are profitable and less strictly if they are not.

Now, we turn back to the history of the water industry, the Metropolitan Waterworks Authority of Thailand (MWA) and the Provincial Waterworks Authority (PWA) have been in operation for over 90 years and are certainly one of the oldest Thai public enterprises in the country. The main reason why there are no private sectors in these enterprises is because all the utilities (water, electricity, gas etc.) in Thailand are protected as an asset for all Thai people. This is 'for security reasons' according to the government. Therefore, they should not belong to any private companies or sectors. The water industry is probably one of the largest among the 60 public enterprises in Thailand with over 15,000 employees, ownership of high value properties and all water services both in Bangkok and all other Thai cities. The main duties of both MWA and PWA are responsibility for water supply and sewage services. Management such as the planning and control of water resources, control of river quality and other services including flood protection and land and highway drainage is the responsibility of at least three ministries.

[27] S. Siengthai and V. Priebjrivat, Op.cit., p.136.

Each of these ministries has subordinate departments or agencies that work within different level for regulation and provision of water management. It is remarkable to think that this kind of, water management has never been reorganised since 1984 and the entire water industry has been the hands of the public sector since the beginning. Another factor that makes both MWA and PWA one of the largest public enterprises is that it has received the most recipient of government subsidies since 1963 when it started to incur losses.

As of mid-1988, the number of PEs in Thailand has been reduced to 60 from 69 in 1984. Public enterprises (PEs) include entities such as MWA and PWA. They are clearly set up with a welfare-oriented goal to provide cheap and good quality water for Thai people more than 80% of whom live below the poverty line. The two PEs water suppliers (MWA and PWA) are among 16 larger enterprises which dominate the non-profit making PE sector. These 16 enterprises determine the performance of the non-profit making PE sector. They are responsible for 92 percent of the non-financial PE investment and receive about 60 percent of government subsidies and transfers.[28]They are primarily responsible for providing basic services like power, water, telecommunication, road, rail, and air transport that gives the PE sector its economic importance. Among these 16 PEs, the MWA and the PWA are the larger money losers. Although these two enterprises are relatively well managed according to World Bank evaluation, they have incurred losses. This has been largely due to the government's pricing policies and pursuit of social objectives.

Water provision in Thailand tends to be supply-oriented and far less attention is given to demand management and the appropriate pricing of water. The rapid growth in

demand of water is beyond the current capacity of both PE's water suppliers. Due to insufficient financial sustainability, the two PE's water suppliers fail to provide good standards of drinking water because of poor maintenance in the piped water supply. Furthermore, huge investment is needed to provide a new reservoir and a fundamental infrastructure including a good system of piped water.

Other constraints faced by the MWA and PWA are the labour unions which are very strong and active in both PEs. They have been very influential on government policy towards the organisation throughout. This was demonstrated when they organised many strikes during the past few years demanding wage increases and protection against the privatisation of the PEs. Overstaffed they are like most other state enterprises, the two PEs now employ more than 15,000 employees about 10 percent of whom are literally idle. Rigid regulations make it difficult to transfer or dismiss them. With the existing personnel and with the management neglecting to invest in their human resources, it is not surprising that there is a strong resistance to the privatisation plan of the two Authorities. The fear of job insecurity leads to distrust between labour and management.

The appointment of the Minister of Interior is another fiat that shows political influence over the organisation. The two Water Authorities are under the control of the Ministry of Interior. The Governor of the Water Authorities is appointed by the Minister and is approved by the cabinet. In past years, there have been changes of the Governors of the Water Authorities who came from different political parties. As explicit broad objectives are set up, there always exists an implicit goal of creating channels by which

[28] S. Siengthai and V. Priebjrivat, Op.cit., p.125.

high ranking and influential military and civilian bureaucrats and politicians are given positions to increase their income.[29]

The legislative approach to privatisation in Thailand has been a case by case approach. Between 1961 and 1986(the first-fifth national economic and social development plan), 31 state enterprises were liquidated, 23 were sold to private investors, two were leased long-term, three were transformed into a joint venture, 16 were rehabilitated and many were contracted out. Thus, the number of PEs was reduced from over 100 to around 60. Because almost all the PEs sold or transformed into joint ventures were relatively small commercial entities under the Civil and Commercial Code, there was not much legal complexity involved in their privatisation. But since the economic crisis began in Thailand, the present government(Chuan Leekpai) has an agreement with the IMF and the World Bank to privatise more large PEs in return for the packed loan such as PAT (Petroleum Authority of Thailand), EGAT(Electricity Generating Authority of Thailand)etc.

From 1982 till now, one state enterprise, the Thai Airways Co.,Ltd., was liquidated and merged with the Thai Airways International Co.,Ltd., and two other state enterprises were sold and one leased to private investors. Four major cases of selling shares through the Stock Exchange took place: the North-East Jute Mill (the government currently holds less than 50 percent of the stock), the Krung Thai Bank, Thai Airways International Ltd. and PTT Exploration and Production Public Company Ltd. The EGAT has also set up a subsidiary with the intention of selling its shares on the stock market. Many concessions and BOT projects were set up such as the State Railway's elevated commuter train and

[29] K. Dhiratayakinant, Public Enterprises in Thailand Paper presented at the International Conference on Thai Studies, organised by the Australian National University, Canberra, 3-6 July 1987. 67 PP.

elevated expressway projects, the 2nd stage Expressway System of the Expressway and Rapid Transit Authority of Thailand, three million telephone lines of the telephone Organisation of Thailand, and certain bus routes of the Bangkok Mass Transit Authority. Furthermore, the Duty Free Shop, the Limousine bus of the Airport Authority of Thailand and the Laem Chabang Seaport of the Port Authority of Thailand were privatised by allowing private firms to take over their management. Finally, the contracting-out of small projects has become common in many state enterprises.

Thus, the Thai government with pressure from IMF and World Bank chooses different method of privatisation, according to the suitability of each case. If the enterprise in question is small and commercially orientated, it is either sold directly to private investors or a joint venture with the private sector is formed. If the enterprise is big and profitable, the government prefers to float it on the Stock Market since various objectives of reducing external borrowing, increasing efficiency, strengthening the capital market as well as ensuring transparency can be achieved that way. If the enterprise is large but not profitable or not legally a corporation other methods are used such as contracting out, joint ventures, granting of a concession or setting up a subsidiary (whose shares are sold instead).

Back to the two Water Authorities, according to Thai government's policy, it seems that these two Authorities fit in with the category above. Because PEs in the commercial sector are considered to be the first priority for privatisation. Nevertheless, all public utility state enterprises are expected to increase private participation in their activities as much as possible in accordance with the conditions of the IMF. In addition, once the relevant laws and regulations are amended or established, they may be partly or fully privatised themselves. State enterprises in the non-profit seeking sector are likely to

remain in public hands. Thus, in my opinion a suitable framework such as corporation law would be useful in preparing state enterprises for future privatisation. However, such law is a political issue in Thailand. A careful study of its every aspect would be necessary, drawing from the experience of other countries. With technical assistance from the World Bank, and the IMF, the Thai government is now in the process of preparing to submit such law. I also consider infrastructure privatisation as sensitive since our infrastructure related state enterprises are large and powerful monopolies. It would be preferable to have suitable legal and regulatory systems in place before a major privatisation programme takes place to prevent the establishment of large and powerful private monopolies. The best example of a regulatory body is the OFWAT (The Office of the Director General of Water Services) in the UK. It was established to regulate the activities of the privatised water industry. However, in my opinion, since the privatisation took place, the establishment of individual public utilities, which happened in the UK such as OFWAT for water, OFGAS for gas, OFTEL for telecommunication and OFFER for electricity is very successful. Each regulator has specific regulatory powers under the relevant privatisation. The UK government has introduced independent regulation to last until a fully competitive market has developed. Broadly, the aim of a regulatory a regime is to put in place a framework of regulation that is explicit and transparent in nature and which operates through incentives for managers of the business rather than through the complex administrative arrangements which had characterised control under public ownership. However, it would be better if all regulators had a single regularity body. Various duties are commonly enjoyed by regulators and are almost the same such as; ensuring that all reasonable demands for utility services are satisfied; ensuring license holders have financial probity; to promote competition; to safeguard the interests of

consumers; and to regulate prices.[30]Moreover, an independent regulator distances privatised utility industries from political pressures and differentiates ownership and regulation in cases where the government continues to hold a minority stake in the company. Where competition cannot be introduced or will take some time to develop, the regulator's role has been to protect consumers from abuses of monopoly power. This requires control both on the price and the quality of output.

In Thailand, the best current example of a regularity body is the National Energy Policy Committee, chaired by the Prime Minister, which is supposed to regulate the energy sector. However, its secretariat, the National Energy Policy office is not independent since it reports to the Office of the Prime Minister. Setting up independent regulatory bodies for the strategic sector: electricity, telecommunications, transport, and water would be ideal.

Part III An Analysis of Thailand's Legal Regime for Water Resources

It is clear not much has been achieved in Thailand's modernisation process in terms of water quality and protection. The lessons that remain are acute. Industrialisation and economic growth give rise to increasing demands for water and energy (In Thailand energy provided by waterpower is significant). Against these demands for the industrial and economic user domestic water supply is a important element in future development.

The gap between the rich and poor in Thailand creates inevitable problems of how to regulate the water industry. How can the law fairly provide for the needs of industrial and domestic users ?

Thailand has several primary laws controlling the allocation, use, and protection of its water resources. This part of the thesis surveys the major laws affecting the use of

[30] McEldowney and McEldowney, opcit., p.70.

Thailand's water resources and associated environmental impacts. Surprisingly, as will be seen throughout this discussion, when the legal mechanism is taken into consideration it is found that the State does not have adequate powers to effectively control water use on the following issues:

First, not all types of use and water sources are subject to legal control. Although several pieces of legislation have been passed to control water utilisation their application is limited to certain water sources or cases. For example, the agricultural use of water, the industrial use of water, hydropower production, navigation use and water used in protected areas, despite all the laws which apply to the sources, no law so far has clearly empowered the government to maintain water level for navigation. As a result, water in certain rivers or canals is from time to time withdrawn so much so that it affects navigation. All these legislations have limited application.

Secondly, there is no legal control of large-scale water use. According to the Civil and Commercial Code, Section 1355 stipulates that a riparian land-owner is entitled to utilise water in a waterway only for the reasonable need of his land which means that the amount of water allowed for use depends on the size of land and activities thereon. This approach nowadays seems unable to cope with the problem of competing use between upstream and downstream riparian, the rich and the poor, the golf-club and the farmer or the industrial and agricultural sectors since any particular use of water is used to satisfy the need of a particular piece of land.

Thirdly, there is no priority of water use. For the time being, no law has determined priority of water use. The upstream water users therefore seem to be in a better position than their downstream counterparts during water shortages. With regard to the water pollution problems, in the past there was no law protecting water sources from pollution

in general but a particular problem of water resources was handled by a specific piece of legislation. For instance, the control of public waterways and irrigation canals was carried out separately under different acts for each matter. The relevant legislation at present is the Enhancement and Conservation of National Environmental Quality Act. (the 1992 Act). It provides a criteria for control of water pollution in general and authorises the government authorities as well. The 1992 Act is an important source of authority to help Thailand achieve rational use and sustainable development of its water resources. On paper, it does much more than just protect water quality per se. The law also provides for efficiency of water use, minimum in-stream flows, and the safeguarding of aquatic environments in protected zones. Its implementation and enforcement are crucial to Thailand's ability to attain long-term, sustainable development. Thai laws with respect to pollution control are fairly comprehensive especially since the 1992 Act, which provides for both protective and curative measures of pollution. There are other problems. For instance, several legislations are involved with respect to control of pollution many of which overlap, the problem of co-ordination between different Ministries, the lack of subordinate laws which produce obstacles to the control of water pollution, effective enforcement of laws, corruption on the part of government officials etc[31].

Fourth, enforcement of environmental laws is of crucial importance in maintaining a balance between use and protection of natural resources and in maintaining overall environmental quality in Thailand. Policy makers and commentators in Thailand generally admit that enforcement of environmental laws has not been adequate. Therefore, in order to ensure that future natural resource development is sustainable and

[31] See more information, A. Wongbandit et al., The Compilation and Revision of Water Resource Laws (Bangkok, Thammasat University, 1993), the Research Project presented to Pollution Control Department, Ministry of Science, Technology and Environment, August 1993, at pp.8-22.

does not unduly impact the environment, Thailand should concentrate on enforcing its existing environmental and natural resource laws. Although additional legislation could also be enacted and a new Water Act is on the way, the enforcement of existing environmental laws should remain the highest priority. Enforcing environmental laws is more difficult than the enforcement of other laws in Thailand for a number of reasons. The Thai people are generally unfamiliar with environmental laws, most of which have been in place a relatively short time. In addition, although criminal laws are rigidly followed, compliance with civil, economic, and environmental laws are often seen as discretionary. Finally, because Thailand is a developing country with limited economy and technology, and because it lacks the financial and technical foundation of more developed countries to put environmental law into practice, protection measures are met with material restrictions.

Nevertheless, a government with the foresight and vision to enact laws protecting the environment and providing for rational use of natural resources should be willing to take necessary actions to ensure their enforcement. Enforcement can occur on two fronts: through administrative agencies and through the judiciary. Each of these enforcement bodies is considered below.

Administrative Enforcement

In 1995[32], the governmental report published in the newspaper an acknowledgement of the country's environmental problems and addressed enforcement of environmental laws. With respect to administrative enforcement of environmental law in particular, government officials and experts within Thailand generally appeared to be pleased with its implementation. Implementation of the 1992 Act have been facilitated by the

[32] Bangkok Business, Bangkok, 4 September 1995, p.3

promulgation of regulations at local and national levels. The central government has also hired more than 200 employees[33] and other local water administrators to supervise enforcement of the law. Thai officials investigated and dealt with 4,783 cases of people violating the laws in 1993, air and noise pollution 3,091, water pollution 646, waste and hazard 661, others 385[34]. And recovered 1 million baht (US$40 million) from the law suite against the Thai Central Chemical Ltd[35]. According to statistics from the Ministry of Science, Technology and Environment authorities have also used the law to control the widespread damage to state-run water conservancy facilities by farmers who steal equipment and sell it for profit. It is perhaps noteworthy that reports of enforcement of the law focus upon the collection of revenues and the prevention of theft of or damage to water facilities. What is not reported is the extent to which the law's provisions on efficient use and environmental protection have been enforced. Admittedly, the end results of environmental protection and ecosystem maintenance efforts are sometimes difficult to quantify. However, if the environmental law's efficiency and environmental provisions are indeed taken seriously and enforced accordingly, then one would hope to see some discussion of successes in these areas in articles or reports describing enforcement of the Law. To the extent that better administrative enforcement is facilitating rational use and sustainable development of Thailand's water resources, this is an accomplishment of which Thai officials should be proud. This is not yet occurring, it is something toward which they should strive.

[33] Because the lack of budget cut due to economic crisis, the PCD lacks the necessary resources to conduct all the work itself. There are more than 500,000 now in Thailand.(The DIW report of 1993)
[34] The Thailand Environmental Situation Report 1993, Department of Pollution Control, MOSTE
[35] The District Court of Samutprakarn decision on October 1, 1993. (Department of Irrigation V Thai Central Chemical Ltd.

Judicial Enforcement

Another difficulty with enforcement, which is perhaps the most basic problem with the role of law in the policy process in Thailand is generally simply the weakness of the courts and the shortage of manpower and resources in the judicial system. Thailand lacks lawyers and the experts necessary for effective judicial enforcement of its laws. Environmental judicial work is still at a relatively early stage as well. In some places, the judiciary and their staff are not fully aware of the need for environmental protection and enforcement and do not take the initiative to apply relevant laws.

The judicial system is becoming increasingly important as a conflict resolution and policy enforcement mechanism. However, most conflicts continue to be resolved through less formal mediation techniques guided by custom and historical practices. In such processes, a precise determination of rights and liabilities is less important than achieving a solution acceptable to all parties within a general context structured by law, social custom, and economic reality.

An understanding of the relationship of the judicial and political systems in Thailand is important in assessing judicial enforcement of environmental laws. Thailand has traditionally been ruled by men (King or military) rather than by law. The judiciary remains subordinate to the will of the ruling elite, and courts tend to act only after they have received orders to that effect. Therefore, the priority placed upon environmental protection, rational use, and sustainable development by Thai's top leaders is crucial not just to administrative enforcement of Thailand's environmental and natural resource laws but to their judicial enforcement as well. It may be somewhat encouraging that political support for environmental protection has remained consistent at the elite level, regardless of shifts in political influence between reformers and more conservative leadership

groups. In light of this elite support, judges may come to perceive over time that they have greater autonomy for strengthened enforcement of Thailand's environmental laws. A strong judiciary has proven to be a key element of successful environmental protection efforts in other countries, including the UK, and should prove to be a key element in Thailand's environmental future as well

Finally, the Water Bill that has been drafted by the National Resources Committee is now three years old and is still awaiting Cabinet approval and comments from other agencies. If approved by the Cabinet, this will be Thailand's first water legislation bill, which concentrates on the treatment of the country's water resourses. There are about 32 legislation on water resourses development, conservation, irrigation and water pollution. This will also empower agencies with authority to implement changes, carry out projects and provide guiding principles for government agencies. It is hoped that these Water bills will lead to big changes with regard to legal problems and other obstacles.

Thailand's ambitious plans for modernisation will require more energy for both rural and industrial development as well as better diet and more food to feed an increasing population. Both of these future requirements will have implications for Thailand's water resources and environmental quality. These modernisation plans, with their additional demand for water, energy, timber, minerals, and other natural resources, will accelerate the degradation of Thailand's ecosystem and reduce the per capita availability of natural resources which are already in short supply. Fortunately, there is some recognition within Thailand that if the nation does not give enough attention to the protection of its environment and natural resources, in the course of modernisation, then modernisation in turn will not be possible.

A commonly expressed view in Thailand is that the country's best strategy is to address its environmental problems in the course of economic development. Although maintaining a link between the economy and the environment is an indispensable element of sustainable development, it must be kept in mind that the economy alone cannot be relied upon to ensure that environmental degradation does not occur concomitant with economic development. The more complex issue is how to strike an appropriate balance between the economy and the environment. While it is unrealistic to expect that economic development should completely stop for the sake of a clean environment, the environment cannot be completely sacrificed for the sake of the economy either. At the very least, it must be acknowledged that environmental problems cannot be solved without addressing them at the time of economic development rather than after the fact. Achieving environmental quality is a much more difficult, and perhaps even impossible, task if one follows a philosophy of develop and pollute first, then clean up later.

The implementation of economic reform in Thailand after the crisis in 1997 presents a valuable opportunity to reassess the balance between economic development and environmental protection. A guiding principle for this reassessment can be found in the concept of sustainable development, under which economic development and environmental protection are not mutually exclusive. A sustainable development strategy can harmonise the relationship between economic development and environmental quality by providing a suitable development pace, in which the economy is developed in an incremental manner, while the environment is protected, stabilised, and ultimately improved along the way. A new code of environmental ethics should be modelled upon gradual, sustainable development, which can provide for both economic development and

environmental quality. An integral component of such a sustainable development strategy is increased spending on environmental protection, including water quality.

To ensure such a strategy increased spending on environmental protection is essential. Expenditure for environmental protection can actually create jobs and thus benefit the economy. With respect to water quantity, Thailand should invest in measures that improve the efficiency of water utilisation, promoting the rational use of its water resources. Thailand's current financial state and its limited investment capacity make it improbable that the country's water supply will expand substantially through construction of expensive new projects. Thus, reforms in existing operations, management, and policies that focus upon increasing efficiency are a more realistic solution to Thailand's immediate water resource problems. An important step that Thailand could take to move toward sustainable development and rational use of water is to enhance public awareness of water quantity and quality issues. Thailand's senior leaders may have finally begun to realise the country's dependence on limited natural resources and the wisdom of conserving and managing these resources in a responsible manner. It is a much larger task, however, to get the public to understand the reasons that they should change their inefficient and wasteful habits, much less actually convince them to do so. In this regard, public awareness is an important prerequisite to collective action.

The government could further educate the public on water issues by initiating a campaign that encourages ordinary people to make efficient use of water. The environmental benefits of efficient, rational use of water including the protection of water quality, fisheries, wildlife habitat, and aquatic ecosystems--should be emphasised as part of this public education campaign. Water management authorities should also educate the public about water quality in Thailand's major river systems. People should understand

current conditions and realise that they are responsible for choices, both individually and collectively, regarding whether Thailand's streams and lakes are clean. Increased public awareness and understanding of what is at stake will promote the rational use of water. A crucial part of a sustainable development strategy for Thailand must be greater emphasis on consistent enforcement of environmental laws. Environmental protection standards and policies should allow for reasonable economic development, but environmental protections that are in place should be consistently enforced. Economic reform and modernisation will undermine Thailand's environmental protection policy without effective enforcement of appropriate environmental standards.

Water laws and Water bills were submitted to Parliament more than two years ago. This means that this is what Thailand currently has in place governing the use and allocation of its water resources, the prevention and control of water pollution, and the environmental impact of water resources. This appears to be more than adequate, at least on paper. The principles of rational use and sustainable development of water resources have a solid foundation in the Thailand Constitution and its environmental laws. However, laws are only meaningful if they are enforced. Therefore, the provisions in Thailand's environmental and natural resources laws that codify the principles of rational use and sustainable development should either be consistently enforced, or the relevant laws should be amended to include provisions that can be realistically enforced. Having strong laws in place that are not enforced may actually be worse, in terms of breeding disrespect for the law, than having less stringent laws that could at least be taken seriously by the Thai public.

As Thailand continues to modernise and increase its standard of living, it will face increasing conflicts over the use of water and other natural resources. The Thai people

will ultimately have to decide how much economic development they are willing to forego for the sake of environmental quality. Western industrial societies, including those in the UK, have made such difficult choices, but often only after such significant environmental degradation has occurred that the task of restoring environmental quality was made much more difficult and costly. In the area of water resources policy, the UK is now acknowledging that some of its water development policies were short-sighted and caused undue environmental degradation. For example, policy makers in the UK are now rethinking, and in some cases even reversing, decisions to operate dams primarily for hydroelectric power generation at the expense of the environment.

Thailand is in the advantageous position of being able to learn from the mistakes and environmental failures of the UK and other developed countries with respect to water resources policy. As one of the developing countries in the world, it is also in a position to set an example for other developing countries. Thai leaders and citizens have important choices confronting them as they proceed with development and modernisation, while seeking to be responsible stewards of their water and other natural resources for the benefit of future generations. How Thailand makes these choices in the coming decades will have a crucial impact upon its water resources and environment, as well as on the global ecosystem. The remarkably rapid expansion of the economy accompanied by the population growth has not only raised the standard of living of the people but has also created in its wake problems of sustainability of water resources development.

Thailand has reached the end of an era when water was considered an unlimited resource and is entering another era when water is to be recognised as an economic commodity and must be used more rationally. Moreover, Thailand is already approaching a water crisis in some cities with serious seasonal water shortages and heavily

contaminated and depleted surface water and groundwater resources. In recent years pressure has been growing on water resources with increasing demand from the domestic, industrial and agriculture sectors as well as for the disposal of industrial effluent and sewage. Water use in major cites and tourist towns is increasing rapidly while the supply of water is becoming ever more scarce. It is easy to understand why the demand for water is rising so rapidly. Population growth in urban centres increasing numbers of tourists, higher incomes and the subsequent changes in lifestyles and the rapid spread of industrialisation are all factors that induce an increase in water consumption.[36]

The situation poses a management problem for the public sector, aggravated by the fact that new sources of water in urban areas are increasingly difficult and costly to obtain. As discussed earlier, by tradition, water management in Thailand tends to be supply-oriented; far less attention is given to demand-management and the appropriate pricing of water. Water provision in Thai cities is normally undertaken by the public sector (The Water Metropolitan Authority of Thailand) which is operated by the government or state-enterprise and a number of small-scale vendors fill the gap in the areas outside the range of the public sector service. There has been a study[37] that shows that that new forms of private participation in water supply may induce new dimensions in water management, such as advanced technology, improved service quality and the ability to respond to the needs of people. The question arises whether Thailand should privatised the water utilities or not. There is no general answer. It should be noted

[36] For example see A. Dinar and L.T. Edna, Water Quantity/Quality Management and Conflict Resolution, (Connecticut, Praeger Publishers, 1995).
[37]Patmasiriwat, Direk et al , Full-Cost Water and Wastewater Pricing: A Case Study of Phuket, Thailand, (Bangkok, Thailand Development Research Institute, 1995).

nevertheless that amongst the many possible and successful models for institutional development, there is no single successful blueprint.[38]

"Many types of institutions have been successful; indeed, there is no universally suitable model that can be prescribed. Institutions are the products of a country's history, society and economy. The choice of which institutions are developed is local prerogative."[39]

Conclusion

This chapter has indicted an urgent need for a drastic change in the way we view and use water in Thailand. This implies radical shifts in attitudes, policies, institutions, and technology. This chapter has also proposed and developed the question of how to apply water utilities[40]in Thailand. There are several suggestions made which recommend changes in policy. This includes suggestions for institutional changes for water and wastewater management such as establishing an independent water authority and improving the role of the environmental organisation. It remains to be seen if there is the political will to introduce changes.

Thailand's growing population and its requirements for development and modernisation have placed increasing pressures on its limited resources and fragile environment. The country's environmental quality has declined seriously in recent decades, and any substantial further decline could have global repercussions by turning Thailand into the world's leading environmental offender. Environmental quality has declined due both to over exploitation of resources and pollution. Both of these factors have come to characterise Thailand's water resources situation in order for Thailand to

[38] Winpenny, James, Managing Water as an Economic Resources,(London, Routlege, 1994), pp. 32-34.
[39] Okun, Daniel A, 'A Water and Sanitation strategy for the developing world', (1991) Environment 33(8), October.
[40] See W. James, Managing Water as an Economic Resources, (London, Rouledge, 1994); Feldman L. David, Water Resources Management: In Search of an Environmental Ethic, (Baltimore, The Johns Hopkins University Press, 1991).

continue along a stable path of social and economic development, it must bring its water shortages under control. If the country wishes to address its water shortages in a rational and sustainable manner, it will have to do so in a way that does not cause a significantly further decline in its environmental quality. Thailand would do well to recognise that water quantity and quality are inextricably intertwined and should therefore be addressed simultaneously. With respect to water quality and quantity, if Thailand hopes to develop a modernised economy without destroying its river environments and aquatic ecosystems. It must control water pollution to a much greater degree than it is doing now and ensure that adequate flows remain in its streams so that they can continue to perform their important cleansing and life-sustaining functions. These are the formidable challenges faced by Thai's leaders in the twenty-first century. Thailand can meet these challenges by adopting and implementing a strategy of rational use and protection of water resources, based on efficiency in use, comprehensive prevention of pollution, and improved management and legal control over water resources. The nation is in a good position to do this from the standpoint of legal authority, as existing laws governing water allocation, water pollution, and environmental quality are surprisingly comprehensive and strong. With a relatively adequate legal structure in place, Thailand can make rational use of its water resources a reality largely by focusing on doing things better than it has in the past.

Chapter 6 The Enhancement and Conservation of National Environmental Quality Act 1992 and the Law Relating to Water Resource and Water Pollution Control in Thailand

Introduction

This chapter provides an analysis of the main principles and the sources of environmental law in Thailand. The main law on environmental protection is contained in the Enhancement and Conservation of National Environment Quality Act of 1992 (hereinafter the 1992 Act). The 1992 Act applies across all areas of the environment including water pollution control.

The chapter outlines the historical background and governmental administrative framework behind the Act; it gives a detailed analysis of the inherent principles of the concept of sustainable development in this Act such as the polluter pays principle (PPP), public participation, the rights of citizens etc. Also the work of the National Environmental Board (NEB) created under the 1992 Act responsible for setting national ambient water quality. The NEB has the power to approve emission standards from the sources as proposed by Ministry of Sciences, Technology and Environment (MOSTE). This chapter aims to answer the question why Thailand has decided to modernise the law and establish the new NEB. It also provides an assessment of how effective the law is when economic development is rapid and sustained.

The 1992 Act is the product of a modernisation drive to bring Thailand's laws into line with the latest Western models of environmental protection. The question arises as to whether Thailand is ready to accept the challenges of modernisation. This is a question that raises factors such as the culture inter-dependence in Thailand. The question needs to be reviewed in the light of the fact that Thailand also experiences excessive bureaucracy.

There is also a lack of adequate funding. There are problems of enforcement, and weakness inadequate manpower. The 1992 Act is said to be the most advanced and complicated law to protect the environment to be found in any developing country.

Historical Background (1975-1992)

In Thailand concern for environmental degradation and the government's adoption of environmental policies that address the problem may be traced back to 1975. Prior to that time, there was no governmental body directly responsible for the environment. Prompted by international and global recession after 1975, a series of strategy documents and research papers on the environment were drawn up. These provided the basis for the implementation of a framework for environmental protection and conservation in Thailand.

Broadly defined the documentation follows the model of western environmental law. We have seen in the previous chapter how Thailand's economy entered a new period of economic development (the Modernisation Period (1970s-1990s); the manufacturing sector increasing more rapidly than the agricultural and mining sector. Environmental concerns led to the enactment of the Enhancement and Conservation of National Environmental Quality Act of 1975 to facilitate the setting up and operation of the National Environment Board, created out of an existing departmental unit, the Office of the National Environment Board. The main objective of the 1975 Act was to oversee and manage the role of the Board whose powers of advising on environmental policy were direct to the Prime Minister. The Board did not have the authority or autonomy to implement any strategies for environmental management. The Board depended on co-operation and co-ordination from other agencies. However, in practise, the agencies themselves were so over burdened with their main responsibilities, they seldom had the

time or inclination to help. The 1975 Act was amended many times. It was commonly accepted that its powers were inefficient and ineffective in its enforcement strategies. The weaknesses of regulation left environmental problems continue to grow in severity at a major cost to the economy and the government. As a result it was recognised that much expenditure was required to eliminate and solve environmental problems. From 1975 to 1992 despite frequent amendments to the 1975 Act little was achieved. Eventually, new legislation was introduced in 1992, known as the Enhancement and Conservation of National Environmental Quality Act of 1992(hereafter the 1992 Act). The rationale of the 1992 Act requires elaboration.

The main ideas and influences that led to the 1992 Act came after the 1992 Earth Summit in Rio, (the United Nations Conference on Environment and Development (UNCED). Since Thailand has ratified many international environmental conventions, for example the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1973, the Convention on Climate Change in 1992 etc, it appears that Thailand came under an obligation to protect the environment under pressure from developed countries. This obligation was taken seriously in Thailand. As a result, many countries in East and Southeast Asia including Thailand experience a spate of new environmental legislation. The Rio Summit prompted a re-thinking of environmental law in Thailand. The result of influences from the Rio Summit was the application of environmental principles such as "sustainable development[1]", the polluter pays principle (PPP) and the precautionary principle etc. Also the introductions of intra-generational

[1] See Ruchirawat, Mathuros. Human Resource Development to Support Sustainable Development, A paper presented at National Symposium on Thailand's Preparation for the UNCED 1992, 4 November 1991, Bangkok.

equity, the adoption of mandatory environment impact assessment (EIA)[2], the integration of "green" (ecological) and "brown"(pollution) aspects of the environment. At the same time, Thailand's Constitution recognised as part of the Constitution, human rights including the protection of environmental rights. Significantly, the adoption of these general principles took place without any detailed consideration of their sustainability for Thailand. As O'Connor (1993) noted, the revised environmental law in many countries had little actual direct connection with the Rio Summit. Rather, they were stimulated by the internal dynamics of socio-economic development, including a growing recognition of the need to integrate the environment with development in a sustainable manner. An additional influence perhaps in the end the most significant was the impact of the funding bodies such as the World Bank and the International Monetary Fund (IMF). Perhaps the most plausible explanation is that few nations wanted to be left out or identified as excluded from the setting of international norms. In that sense the modernisation of Thailand's environmental law proceeded on a similar basis to many developing countries. A cynical view might be that Thailand had to adopt the stream of international co-operation to gain funding from these legitimate institutes.

In Thailand, the 1992 Act came shortly after a coup d'etat in 1991. This signalled a break with the old order. Also at the same time the development of industrialisation was in full swing. New environmental laws in line with international standards provided the

[2] The technique of environmental impact analysis (EIA) was developed initially in the United Stated in response to a requirement of the National Environmental Policy Act of 1969. Now adopted with variations in at least 30 countries and by the European Community, EIA has proved to be a valuable component of a group of related techniques for discovering and projecting the probable consequences of proposed action. See also Caldwell, L.K.(1988) 'Environmental impact analysis(EIA):origins, evolution, and future directions', Policy Studies Review, 8:75-83.

country with international recognition.[3] As the result, The Enhancement and Conservation of National Environmental Quality Act of 1975 was repealed and replaced by the Enhancement and Conservation of National Environmental Quality of 1992. Its aim and objectives are to protect the environment and to guide and manage the environment according to the principle of sustainable development. The new Act became effective on April 5,1992.

The 1992 Act broke with past traditions of environmental law in Thailand. In the public's mind, the new 1992 Act raised high expectations that at last environmental issues were being properly addressed in Thailand. This proved to be short-lived. For the first time the concept of sustainable development became integrated into Thailand's environmental law.

Legal and Administrative Framework

It is important to set out the main parts of the 1992 Act as an illustration of its comprehensive nature and also its innovative features. The new environmental

[3] There are also some specific reasons for the recent developments in environmental law in Thailand. First, the Constitution of the Kingdom of Thailand (1997) in the Chapter 5:Directive Principles of State Policies, Section 79. The State shall promote an encourage public participation in the preservation, maintenance and balanced exploitation of natural resources and biological diversity and in the promotion, maintenance and protection of the quality of the environment in accordance with the persistent development principle as well as the control and elimination of pollution affecting public health, sanitary conditions, welfare and quality of life. And Section 82. The State shall thoroughly provide and promote standard and efficient public health service. Secondly, Thailand's economy has made remarkable progress over the past decade. The growth in GDP after 1986 has been remarkable, averaging over 10 percent per annum and compares favourably with other Asian Nations. Rapid economic growth has led to deterioration in environmental quality and natural resources. Finally, the rapid growth of population in the last three decades significantly contributes to depletion of natural resources and others environmental problems. See A. Wongbandit, Thai Environment Law and the Protection of Global Environment, A paper presented to the 7th General Assembly and Conference,(Malaysia, Asean Law Association, 1995).p. 2.

legislation[4] has seven Chapters, one hundred and eleven Sections and four Interim Provisions. The legislation provides for the following major areas of environmental protection:

The 1992 Act establishes a new National Environmental Board (NEB), chaired by the Prime Minister. The new NEB has greater regulatory powers than its predecessor.[5] The Act also covers, the setting of environmental quality standards as well as mandatory emission or effluent standards[6]; establishing an Environmental Fund to promote environmental protection and conservation[7]; providing for the formulation of an Environmental Quality Management Plan[8]; establishing protected areas for environmental conservation[9]; incorporating the polluter pays principle(PPP)[10]; designating Pollution Control Zones[11]; designating and empowering provincial governors to be local " pollution control officials[12]"; adopting the principle of strict tort liability[13];requiring the preparation of EIA reports[14]. Despite its scope and coverage the Act did not specifically address any single environmental problem in Thailand. In its

[4] The Enhancement and Conservation of national Environment Quality Act of 1992 was amended with several principles may be identified as summarised as following: 1) to assist the participation of the people and NGOs in the environmental enhancement and conservation. 2) to organise the environmental management in accordance with environmental administration principle. 3) to assign the authority of government agencies, state enterprises and local administrations to procure co-ordination and common duty of environmental enhancement and conservation as well as the producing of guidance in the area where there is no agency with direct responsibility. 4) to assign measures controlling pollution by providing air pollution treatment system, waste disposal system and tools and equipment to resolve pollution problems. 5) to precisely assign the duty and responsibility of the persons involving the cause of pollution. 6) to assign promotional measures such as funding and grants as motivation for environmental protection. See Minutes of meeting for the drafting of the Enhancement and Conservation of National Environment Quality Act, 1992, the National legislative Council.

[5] Chapter 1: National Environment Board, Sec. 12.

[6] Chapter 4:Part 2:Emission or Effluent Standards, Sec. 55-58.

[7] Chapter 2:Environmental Fund, Sec 22-31.

[8] Chapter 3,Part 2:Environmental Quality Management Planning, Sec. 35.

[9] Chapter 3,Part2:Conservation and Environmentally Protected Areas, Sec. 42.

[10] Chapter 4, Sec. 69,70 and 72.

[11] Chapter 4:Pollution Control, Sec. 52.

[12] Chapter 4, Part 3:Pollution Control Area, Sec. 59,60.

[13] Chapter 6:Civil Liability, Sec. 96.

[14] Chapter 3, Part 4: Environmental Impact Assessment, Sec. 46-51.

general scope it followed a Western tradition of law drafting based on the ideals of codification combined with modernisation strategies.

The 1992 Act is innovative in addressing both central and local government. As Tasneeyanond (1994), noted the main ideas of the 1992 Act and one of the primary objectives is to promote and strengthen the capability of local governments to be more autonomous and self-sufficient in dealing with pollution control and waste management within their territorial jurisdictions. It is also said that the principle of decentralisation is fundamental to the management approach adopted under the current 1992 Act.[15]Inherent in the 1992 Act is the idea of legal enforceable power through litigation in the Courts. Regulatory stipulations were thus linked to legal enforcement. This has a number of defects. It assumes that environmental problems could be addressed through legal means and assures access to the Courts and that observing the law is an acceptable norm. The 1992 Act also assures that local autonomy would deliver results at a local or regional level. This proved to be over optimistic. Thailand's weak local government structure resulted in little opportunity for effective implementation strategies.

Use of Broad Definitions

The 1992 Act is unique in Thailand because of its manner of drafting. Previous Thai environmental statutes were narrow and only loosely applied throughout the environment as a whole. The 1992 Act adopts a broad approach and attempts to address environmental problems as a whole. For example, "Environment" defines everything that has a biological or physical character and is created by nature or by man. "Environment" broadly therefore includes natural resources, the natural environment. Similarly, "Pollutant" defines waste, hazardous substances, and other polluting substances, as well

as residues, sediments, or remainders of such materials that are likely to have an impact on environmental quality or be harmful to the health and hygiene of the public. Radiation, heat, light, noise, odor, vibration, and other nuisances are also "pollutants". Finally, while previous Thai environmental statutes exempted broad classes of polluters because of their beneficial contributions to economic development, "sources of pollution" are defined in the 1992 Act as any community, industrial facility, construction, every kind of motor vehicle, or any other thing that causes pollution. As a result the 1992 Act as a whole up-dated Thai environmental law. It also brings for the first time a variety of organisation and business within the general ambit of law.

Administrative Reorganisation

The 1992 Act marked a radical break with the past in terms of administration. Earlier environmental statutes in Thailand established the "National Environment Board" (NEB)[16]in 1975. As noted above up until the 1992 Act, the NEB was Thailand's main environmental agency. It had many defects. The National Environment Board (NEB) in common with the tradition and culture of the law in Thailand, consisted of politicians, government officers and qualified members. It is chaired by the Prime Minister, a Deputy Prime Minister as the first Vice Chairman, and the Minister of Ministry of Science, Technology and Environment (MOSTE)[17] as the second Vice Chairman. There were also 8 Ministers and 3 government officers and no more than 8 qualified members. The NEB

[15] See also Kato(1996) at pp. 17-18

[16] The origins of the National Environmental Board (NEB) was formerly only an advisory body as set out in the 1975 Act and the functions of NEB were not conferred by the regulatory mandates essential for implementation of pollution control and other environmental programs. What it did was to co-operate with involving governmental units only in environmental matter. It could not have any directly orders but in times of environmental crisis, it granted emergency power only to the Prime Minister. It believed that this based on Japanese model, please also look at the Basic Law for Environmental Pollution Control(BLEPC) of 1967. Japan was one of the first countries in the world to adopt a system of environmental laws and regulations within the framework of a basic law.

[17] Section 12 of the 1992 Act.

had much authority but in the minds of the public it was a government body comprising of ministers who were only accepted. A policy could be implemented and enforced. The NEB had the powers and duties as amended in Section. 13. The political composition of the NEB was a major weakness. The NEB was only authorised to serve in an advisory role to the Prime Minister's Cabinet and to recommend environmental standards to other government agencies. As NEB's recommended guidelines were not legally binding upon the government agencies that were supposed to have the legal power to prescribe them, many were not made law. For example, Section 13(8), the NEB has the power and duty to propose for amendment or improvement of laws relating to environmental quality to the cabinet. Hence, the NEB's efforts contributed relatively little to effective environmental protection in Thailand.

However, with both the 1975 Act and the 1992 Act, the main functions of NEB, MOSTE and ONEB in environmental matters were basically of an advisory and technical nature.[18]The NEB chaired by the Prime Minister and the majority of members of the Board are still largely under "political control". This form of Environmental Agency is base on political accountability. The difficulty is knowing when it is necessary to take steps to enforce the law. Who is to decide? How is this to be resolved? What is the balance of power? What are the mechanisms for their resolution? How is accountably to be ensured?

[18] Accordingly, all functions were not conferred any of regulatory mandates essential for implementation of pollution control and other environmental programmes. Hence most of the standards, criteria and measures set by virtue of the mandates of the 1975 Act were not legally enforceable.

There is a lot of improvement in the 1992 Act. For example, Wongbandit (1995)[19] noted that the new NEB in the 1992 Act was more effective than the 1975 Act as follows: First, the 1975 Act had only a simple role for the former NEB which were unable to keep up with the complicity and changing nature of environmental problems. Secondly, environmental policies recommended by the former NEB had no legal binding force with which other government agencies would have to comply. Third, the former NEB had the power to set up environmental quality standards only on matters which were not within the jurisdiction of other government agencies. This certainly crippled the former NEB because most environmental problems in one way or another were under the responsibility of other government agencies as indicated by other parliamentary acts which usually governed a single resource issue. Finally, since most members of the former NEB were only high-ranking officials, the resolutions of this board did not seem to receive real respect and attention from the ministers who were responsible for environmental problems. The 1992 Act reforms the composition of the NEB which mostly consists of ministers. This is intended to make the decisions of the NEB more authoritative. But the problem still exists, because both the new and the former NEB is still under political control as its chaired by the Prime Minister.

Although Wongbandit (1995) claims that the new NEB has a continued efficient role in the 1992 Act. It is hoped that the 1992 Act will provide the authority to solve Thailand's extensive pollution problems. However, there are other problems relating to the accountability and changing power and duties of the NEB, The most severe

[19] A. Wongbandit, 'Thai Environmental Law and the Protection of Global Environment' A Report presented to the 7th General Assembly and Conference, ASEAN Law Asssiocciation, Kuala Lumpur, Malaysia, 6-10 December, 1995.

problem is administrative inefficiency. There is also the question of the political influence dominance and in Section 12 of the 1992 Act, it is clear that the majority of members of the NEB are still dominated by governmental officials or politicians. Due to the experiences of ineffectiveness of law enforcement by the officials, there were always politician's decisions involved[20]. In the UK, convictions for water pollution incidents ranged between about 300 and 500 cases per annum.[21]since the introduction of the National Rivers Authority(NRA), (September 1989) now the Environmental Agency. In contrast in Thailand at the time of writing, there were no prosecutions under the 1992 Act. Prosecution is therefore of limited use when setting standards and struggling to maintain a good environment is limited by commercial and economic vested interests including political interests.

The question of bureaucracy is a systematic weakness. There are different approaches with the "bottom-up"(de-centralised system) over the traditional "top-down the (centralised system)". In Thailand, there is traditionally a top-down system of bureaucracy(the centralised system) with most of the law and regulation enacted at the central level. All the final decisions are always made at the top. The local authorities have no power to regulate themselves at all. Everything has to come from the top. It is obvious that the NEB is a traditional system(the centralised system), which has long been deeply rooted, in Thai national administration. On the other hand, in the UK the former National River Authority (NRA) now the Environmental Agency (EA) was established as a corporate body, independent of the Government, with resources to inspect, the right to

[20] For example, is it politically desirable to prosecute more than one million poor people who encroach public forested land especially in the headwaters which are vital to the maintenance of the ecological balance of a river basin? Because the NEB said it is very difficult to find a new place for the resettlement of whose people. See more detail at Wongbandit(1995).

[21] National Rivers Authority, The State of the Water Environment Six Year Trends Report (1995).

direct and legal powers to compel businesses, industry, agriculture and others to act in the most responsible fashion toward water and water resources.[22]

According to Snidvongs(1996)[23] in disagreement with Wongbandit(1995), the 1992 Act gave the NEB ***'strong enforcement powers'***, together with a sizeable National Environment Fund for financing investment in environment protection facilities throughout the country. However, this hardly matters as the NEB remains in the control of the government and is not an independent body. Snidvongs (1996) goes on to suggest that the Ministry of Science, Technology and Environment (MOSTE) was created as a new ministry with three new departments[24] as the new working arm of the NEB. Moreover, this still leaves the NEB dependent on government departments. Snidvongs(1996)'s analysis is that over the 17 year period from 1975 to 1992 the NEB had sufficient powers but lacked strong financial resources to undertake an effective implementing strategy. Wongbandit, (1995) strongly argues clearly that the NEB's role was basically advisory rather than effective planning and regulation. One strength of the 1992 Act is that by adopting a sustainable development policy through planning and implementing economic-cum-environmental development projects this creates a change in governmental policy. This is also due to the adoption of privatisation for investment in building, operating and owning waste management facilities and systems. This means

[22] Ibid.,
[23] K. Snidvongs, 'The Future of Environment and Business Development in Southeast Asia: the Situation in Thailand on Economic-Cum-Environmental Development' (1996) The Environmentalist Vol. 16, pp. 331-336.
[24](1)The Office of Environmental Policy and Planning(2)The Department of Environmental Quality Promotion.(3) The Pollution Control Department. The new third department with powers and resources to enable it to act as a regulatory agency.

that it is hoped that individual investment will pay good dividends in both financial earnings and in environmental protection.[25]

The challenges facing Thailand include how to make the most effective use of the private sector through sustainable development and expansion of the programmes throughout the country.

Duties of Government Agencies

Underlining the point that the 1992 Act was the source of the most innovative ideas fashioned from Western countries in the use of standards in environmental law. Under the 1992 Act, the NEB was granted additional powers to prescribe air, noise, water, and other environmental quality standards. The NEB has the power to prescribe by notifications published in the Government Gazette for the purpose of environmental quality enhancement and conservation. (Sec.32). There are five categories of environmental quality standards[26]. The prescription are to be based upon scientific knowledge, principles, criteria and should be evidence related and shall also take into account the practicability of such standards, based upon economic, social, and technological

[25] It is now the role of privatisation is continuing growth both the financing and furnishing of expert skills. For example, it established a new Waste Management Authority for planning and implementing sewerage facilities for Bangkok Metropolitan Region (BMR), the using the build transfer and operate (BTO) approach for sewerage systems, the use of build/own/operate (BOO) mechanics of the comprehensive sewerage systems, etc.(Sindvongs, 1996).

[26]Class 1 Extra clean fresh surface water resources using for; (1) conservation, not necessary pass through water treament processes require only ordinary process for pathogenic destruction(2) ecosystem conservation which basis living organisms can spread breeding naturally.

Class 2 Very clean fresh surface water resources using for; (1) consumption which require the ordinary water treatment process before uses (2) aquatic organism conservation for living and for fishery(3) fishery(4) recreation.

Class 3 Medium clean fresh surface water resources using for; (1) consumption but have to pass through an ordinary treatment process before uses(2) agriculture.

Class 4 Fairly clean fresh surface water resources using for; (1) consumption but reguire special water treatment process before uses(2) industry(3) other activities.

Class 5 The resources which are not classified in class1-4 and using for (1) navigation. (Source: Notification of the National Environmental Board (NEB) (No.8, 1994), published in the Royal Government Gazette, Vol. 111, Part 16, dated January 20,1994.

considerations. (Sec.32) The NEB, under reasonable circumstances, also has the power to prescribe special standards higher than the environmental quality standards prescribed to protect areas designated as conservation or environmentally protected areas or pollution control areas. (Sec.33) In the light of scientific and technological advances and changes in economic and social conditions of the country, the NEB also has the power to make appropriate modifications and improvements to the prescribed environmental quality standards. (Sec.34)

Unlike prior statutes, the 1992 Act requires all government agencies to take action to effectively implement the Plan. The Act also establishes a "Pollution Control Committee" with the power and duty to: develop a plan to prevent and remedy pollution hazards; offer opinions to control, prevent, reduce, or eradicate pollution; and suggest tax promotion and government investment in private projects with environmental benefits. Many of these requirements have had little practical impact in Thailand.

Citizens Rights and Duties

A further innovation in the 1992 Act is the guarantee of individual rights and duties. Under the 1992 Act, every citizen is charged with the right and duty of improving and conserving the quality of the national environment and with the responsibility to get information from the government to achieve compliance. More importantly, individuals are entitled to receive compensation for any damage due to pollution and to submit claims or reports to and receive help from an authorised government officer. The 1992 Act highlights roles and important changes in the procedure for enforcement as following;

Record keeping Obligations: Under the 1992 Act, the owner or possessor of a source of pollution, rather than the government, has an affirmative duty to collect statistics and data

showing the daily functioning of his or her facility or equipment. He or she must also keep detailed notes, which may serve as recorded evidence of the source of pollution at a site.

Civil Liabilities: For the first time in Thailand the 1992 Act imposes strict liability for leakage or contamination from a source of pollution. That is, even if the owner of a source of pollution did not act negligently, he or she is liable for compensation or damages to persons who suffered death, bodily harm, or injury to health as a result of the leakage or contamination. The owner of a source is also liable to the owners of property damaged as the result of migration of pollutants and unlike previous law, it does not matter whether or not such property is owned by the State for a cause of action to accrue.

Criminal Liabilities: The 1992 Act creates a range of criminal offences. Among the punishable offences most applicable to companies doing business in Thailand are non-compliance offences. Even where no harm is caused, non-compliance with an order for emergency relief, with Ministerial Regulations, or with the measures and methods prescribed for controlling pollution is punishable with a fine of up to 100,000 baht and/or imprisonment for up to one year. If the non-compliance caused danger or damages the offence is punishable with a fine of up to 500,000 baht and/or a prison term of five years.

Companies must also satisfy all recording, reporting, and licensing requirements. Owners of a source of pollution who refrain from collecting statistics or data, or from making notes or reports as required by regulations, are subject to imprisonment not exceeding one month and/or a fine not exceeding 10,000 baht. Failure to submit a required report is punishable with a fine of up to 100,000 baht or one year in prison. Submission of a falsified report carries similar penalties.

Fees and Penalties: The NEB has the authority to fix service fees for use of government-owned or - licensed wastewater treatment and waste disposal facilities. An owner of a source of pollution who illegally discharges wastewater or waste into the environment is liable to pay a penalty four times the amount of the service fee fixed by the NEB. If no treatment plant or disposal service is available, an owner of a regulated source of pollution may be required to have an on-site facility for wastewater treatment or waste disposal. The penalty for failing to provide the prescribed facilities in these situations is four times the amount of daily expenses that would be incurred for the normal operation of the required facility. An owner of a source of pollution who refrains from using an on-site facility or equipment for control of air pollution, noise pollution, or vibrations is liable for similar penalties.

Miscellaneous: Other Important Laws

There are also a range of principles laws and regulations while they are not entirely devoted to environmental protection. They do contain a general framework of provisions or cites to prohibitions on subjects such as, the Industrial Works Act (IWA) of 1969[27], the Toxic Substance Act (TSA) of 1967, the Public Heath Act (PHA) of 1941, the Building Control Act (BCA) of 1979, and the Cleanliness and Orderliness of the country Act (COCA) of 1960. All were repealed and replaced in 1992 but all retained their original titles except for the TSA, which was replaced by the Hazardous Substances Act (HSA). As Tasneeyanond(1994) has observed, no amendment was made to the Industrial Estate Authority of Thailand Act(IEATA) of 1979, although it is an important component of

[27] The IWA of 1992 provides a basis for the possible adoption of programs for source reduction and the levying of pollution charges. For example, at Sec.43 obliges the owner or operators of certain factories to "pay annual fees in accordance with the criteria, procedures and rates as provided for in the ministerial rules" throughout the period they are engaged in their business.

Thailand's environmental legislation.

There were also other laws that related to nature conservation, although there are some general provisions in the 1992 Act they apply only to national parks and wildlife reserves designated as "environmentally protected areas". The other laws were the Wild Animal Protection and Reserves Act (WAPRA) of 1961(amended 1992)[28], the Forest Act of 1941(Amended), the National Park Act of 1961(amended), the Minerals Act of 1967, the Fishery Act of 1947, and the Tourism Authority of Thailand Act 1979[29]. All of these laws provide a legal basis for management and conservation of nature resources.

Laws Relating to Water Resources and Water Pollution Control in Thailand

In the past there was no Thai law protecting water sources from pollution generally. Specific problems of water resources were the subject of specialised legislation.[30] In response to growing concern for environmental degradation both at international and national levels, Thailand undertook a major overhaul of domestic environmental legislation in 1992 when a series of laws were enacted to promote better environmental management. Of these, at least six pieces of legislation are of particular relevance to water pollution and water conservation. The main legislations consist of; The Enhancement and Conservation of National Environment Quality Act,(the 1992 Act); The Factory Act, 1992; The Hazardous Substances Act, 1992; The Public Heath Act, 1992; The Municipal Cleanliness and Orderliness Act, 1992 and The Navigation in Thai

[28] The WAPRA, as amended in 1992, is said to provide an adequate legal framework for protection of wildlife species and genetic diversity. But the existing list of preserved species has not amended since the passage of WAPRA in 1961.(Tasneeyanond 1994)

[29] The TATA provide "tourism reserve sites" for management and conservation of natural resources. It might rather argued that it could be harmful to nature resources if it was designated in the National Park Areas.

[30] For instance, the control of public waterways and irrigation canals was separately carried out under different Acts for each matter.

Water Act, 1992. It was hoped that the 1992 Act would be a uniform statute. In fact, the existence and variety of additional laws reflects the problem of water pollution.

These new laws reflect the fact that after a period of high economic growth, Thailand gave more attention to the environmental impact of its economic development. This does not mean, however, that no legislation dealing with environmental problems existed prior to 1992. The new laws have, been aimed at improving the efficiency of environmental management practices. It is thus important to examine the main statutes in order to assess whether or not they achieve their objectives. Currently, there are more than 26 pieces of legislation dealing with water pollution directly and indirectly. The legislation involves six ministries such as Minister of Science, Technology, and Environment (MOSTE), Ministry of Industrial (MOI), Ministry of Agriculture and co-operative, Ministry of Interior, Ministry of Heath and Ministry of Communication[31].

[31] Examples of the legislation prior to 1992 as the following; The Royal Irrigation Act, 1942;The Fishery Act, 1947;The Minerals Act, 1967;The Building Control Act, 1982;The Underground Water Act, 1980. There are other legislation on the basis of water pollution as the following: *Agricultural sector;*The Water Hyacinth Elimination Act of 1913, which requires those within whose land water hyacinth, grows to destroy such water hyacinth. The same Act also authorises the authority to order persons to collectively eliminate water hyacinth for common interest; The Royal Irrigation Act of 1942, Sec. 28 prohibits dumping of garbage or discharging of polluted water or chemicals into irrigation canals. This covered only to the irrigation canals not to other water resources. Beside, this does not include chemicals use in agriculture such as pesticide. As a result, reference must be made to the new Hazardous Substance Act (HAS) of 1992 to authorise the authorities to announce the control of this chemicals use in certain areas; *Industrial sector;*The Mineral Act of 1967, Sec. 67 controls discharge of wastewater from mining to public water resources not exceeding the specified quantity;The Factory Act of 1992 empowers the Industry Minister to prescribe Ministerial Regulations pursuant to Sec. 8(4), (5) to set up effluent standards for wastewater from factories in all sizes including those whose construction does not need permission to comply with such standards[31]. However, this law is not applying to drilling underground water outside the Underground Water Areas (Bangkok);The Public Heath Act of 1992, Sec. 26-29 also provides for control of pollution detrimental to heath or causing nuisance. *Household and community sector;*The main law is the Public Heath Act of 1992, Sec 18-20, 25-28 authorises local officials or public heath officials to control dumping of garbage or refuses into water sources or contaminates water resources to prevent nuisances or harm to human heath;The Penal Code itself also provides for penalty for pollution caused to water resources. It inflicts penalty for person who causes difficulty to public water uses which could cause harm to other persons or their property[31]or contaminates water in a well, pond or any reserved water for consumption with toxic substances[31]or causes clog to sewerage.;The Municipal Cleanliness and Orderliness Act of 1992 is also an active legislation but its application is limited only to some certain areas like Bangkok, Pattaya. Although the above legislation could be used to prevent water pollution from household or community, the real problem seems to be the lack of active enforcement.

The Modern Style of Environmental Protection in Thailand

The 1992 Act creates the key concepts applicable in most Western advanced democracies. These include principles for sustainable development, the citizens' right of access to environment information, public participation, the polluter pays principle (PPP) and the precautionary principle. The 1992 Act attempts to create a modern style of environmental protection in adopting new methods of environmental management and giving a key role to the NGOs.

1. Public participation (the role of NGOs)

The 1992 Act envisaged a greater degree of participation by the public through interested groups and individuals. Public opinion in Thailand has taken an increasing interest in environmental problems. This may come from a more active mass media providing the public with more information regarding the conditions and severity of environmental problems in Thailand. In particular public attention has been given to water pollution in rivers and air pollution that affects human health. The 1992 Act recognises citizens' rights of access to environmental information, the right of citizen to litigation and the role of NGOs in environmental protection. The concept of the right of citizens is to be found in Section 6 of the Act and include five categories of rights and duties for citizens[32]. These are, *inter alia*, the right of access to environmental

[32] Sec. 6 (1) it states, "For the purpose of public participation in the enhancement and conservation of national environmental quality, the following rights and duties are accorded to individual persons as may be provided by this Act or governing laws related thereto:
(1) To be informed and obtain information and data from conservation of environmental quality....."
Excepts
1.1 Information or data that classified officially as secret intelligence pertains to national security.
1.2 Secrets pertaining to the personal rights
1.3 Intellectual property or commercial rights
1.4 The rights in trade or business (Trade Secrets).

information from public authorities[33] but subject to the exception that deemed by the authorities to keep secret for reasons of national security or because it is related to personal rights, property rights or commercial rights or other activities protected by law. *Section 6(1)* is a new section. It stipulates that there is a right of access to environmental information, subject to a number of broad exceptions. Taken together the exceptions may undermine the effectiveness of the section. Public ignorance of Sec. 6(1) and the right coupled with the unchanged attitudes of officials to environmental matters might impede the realisation of such right. The first and only test case under the 1992 Act was taken in 1994. The *Panat* case was brought against the Government with respect to its decision to use a piece of wetland in Bangkok for construction of a governmental building.[34]The Court of First Instance decided that the plaintiffs only had a right to recommend to the NEB that it should designate the disputed areas as an environmental protection zone under the 1992 Act and ruled that the plaintiffs had no legal standing to sue because only persons who had suffered special damage would be granted such legal standing. This restrictive interpretation of Sec. 6(1) and the right to information leaves a lot to be desired.

The *Panat* case demonstrates the Court's reluctance to exercise a judicial review over administrative acts with a potentially adverse environmental impact. The case is considered with Thai's judiciary approach to citizen rights. There is a trend to acquiesce

[33] Testing Thailand's new provisions granting NGOs a right of access to government information, one recent lawsuit sought out to require the government to share information concerned with the Bangkok skytrain project. The government had declared that NGOs, and the public in general, could ask for such information but it was the government's discretion whether to provide it. In July 1995 a court ruled that the government must release its "EIA" information related to the building of an elevated electric train in central Bangkok without discretion.(Court no. 83/2538)(Please see also Mallikamarl, S and Stephen, M.(1995)Environment protection and pollution control in Thailand, Bangkok: Western standards.)

[34] *Panat Tasneeyanond and others V The Prime Minister, The Minister of MOSTE and the Director General of the Inland Revenue Department.* The case was brought was brought on 21 April 1994.

in administrative acts. Treating the environment as if it were any other legal issue is unsatisfactory. This attitude of the Courts together with the non-litigious nature of Thai society leaves citizens with little opportunity to deal with the environment.

The concept of a citizen's rights to litigate is incorporated into Section 6(2). The citizen has a right to claim damages or compensation from State enterprises or enterprises which are initiated or promoted by the State. Section 6(3) provides that a citizen *may* have a right to file a complaint against another person if he or she has found that there is a violation of pollution control or natural resources conservation law. The problem is the scope of this provision. It is not clear, as there is no specific reference to a requirement to prove damages or injures. There are different views of interpretation over this subsection. One view is that citizens in particular NGOs are given the right to initiate legal action against offenders against environmental laws. Another interpreter followed by government officials is that such right is restricted only to persons who have suffered damage. The latter interpretation is consistent with judicial decisions in Thailand where proof of damage is the requisite legal standing to bring an action.

In considering both views, an interview was under taken with the draftsman of this Act. It was clear for the interview that the wording was deliberately left broad and vague so that such rights could be developed through case law in the future.[35]

2. The Polluter Pays Principle(PPP)[36]

The polluter pays principle (PPP) was initially a principle of economic policy aimed at optimising resource allocation. The resource in this context is the environment's capacity to absorb emissions and waste. The rationale is that in order to maximise profits,

[35] Interviewing conducted by Professor John McEldowney and the writer with the Dr. Panat Tasnessyanond a draftsman of the NEQA 1992; March 28, 1998.

producers do not normally add the costs of deterioration of the environment (i.e. the "social cost") to product prices. The development of the PPP has largely been associated with the work of the Organisation for Economic Co-operation and Development (OECD) since the early 1970s[37]. When the industrial countries began to tackle their environmental problems in the 1960s, they paid particular attention to the trade implications of international inconsistencies in the last category of policy, the internal allocation of environmental control costs. At that time, a new school of environmental economists was promoting as a policy principle the economic theory that called for internalising the costs of production in polluting or degrading the environment. Countries adopting strong environmental protection measures and following the principle of cost internalisation clearly recognised that these policies imposed new costs on manufacturing industries. They worried that other nations might use government funds to subsidise private pollution control thereby giving the subsidised companies a significant price advantage in the international market place.[38]

The 1992 Act introduces for the first time into Thailand the Polluter Pays Prinicple(PPP). Before the 1992 Act, Thailand had not adopted PPP in any legislation. The PPP in the 1992 Act promotes the following image of duties and liabilities. First, there is the duty on the owner or the possessor of a source of pollution to install an on-site facility for pollution control.*(Sec.68,70)*. In the case of a central wastewater treatment plant which is operated by local administration, the owner or the possessor has strict

[36]See also Kritiporn, P., Panayotou, T. And Charmprateep, K., The Greening of Thai Industry: Producing More and Polluting Less, (Bangkok, Thailand Development Research Institute, 1990)

[37] See S.E. Gaines, 'The Polluter-Pays Principle: From Economic Equity to Environmental Ethos, Texas ILJ (1991) Vol. 26. 463-496.

[38] U. Kettlewell, 'The Answer to Global Pollution? A Critical Examination of the Problems and Potential of the Polluter-Pays principle', Cornell JIELP (1992) Vol. 3. pp. 445-449.

liability*(Sec.71,72and Sec.90,91)* Second, the 1992 Act imposes strict liability in the form of tort actions.[39] Third, the citizen may litigate on the basis of rights that arise from natural resources.[40] The 1992 Act applies as a duty on owners or occupiers in control at sources including industrial and power plants to install pollution treatment facilities for emission.(Sections 68 (2) and 70 (1)).

PPP also covers many instances of water discharges. For example, if the operator has not installed sewage treatment facilities and where the area in which the source is located has been declared a pollution control zone or has central waste water treatment facilities, the operator has a duty to send their sewage for treatment at such facilities and must pay a set scale of fees for treatment. The NEB with the advice of the Pollution Control Committee is authorised to set the amount of fees to be made in different localities (Section 88).[41] However, there is a problem with residential accommodation. This is an important exception carried out of economic and social considerations. As most private households are not able or willing to pay for such a charge the changes are unenforceable. There is a lack of adequate infrastructure to convey wastewater to central treatment plants. This leaves domestic waste largely unregulated. Even the industrial sector are required to send wastewater for treatment. The infrastructure to enforce this system is inadequate. In most cases, such shortcomings are remedied by the institution in industrial

[39] *Sec.96;* "...the owner or possessor of such point source shall be liable to pay compensation or damges therefor, regardless of *whether such leakage or contamination is the result of a wilful or negligent act of the owner or the possessor thereof,* exept....."The compensation or damages shall mean to *include all the expenses actually incurred* by the government service for the clean-up of pollution arisen from incident of leakage or contamination.*(Sec.96)*

[40] *Sec.97,* it states " Any person who commits an unlawful act or omission by whatever means resulting in the destruction, loss or damage to natural resources owned by the State or belonging to the public domain *shall be liable to make compensation to the State* representing the total value of natural resources so destroyed, lost or damaged by such an unlawful act or omission."

[41] It is also notable that the Act imposes heavier fines on operators who evade their obligations to operate waste facilities or send their waste for treatment at central treatment facilities or to pay for treatment charges.(Section 90-91).

plants of their own internal treatment facilities. Such facilities were required by law prior to the 1992 Act. However, their efficiency and effectiveness is largely unregulated. Since wastewater from residential and agricultural sectors is the most important cause of water pollution, accounting for 93 percent of the total load of Biochemical Oxygen Demand(BOD) in the Mae Klong River in 1990, and 75 percent of the BOD load in the Chao Phraya River in 1988.[42] This leaves much waste unregulated. In practical terms, PPP is largely ineffective in Thailand.

The Polluter Pays Principle: An analysis

We have seen how the 1992 Act incorporates the Polluter Pays Principle (PPP). PPP has many devices under the 1992 Act for its enforcement. Compensation provision is available and Section 96 creates strict liability. The fact remains that because of the practical problems of implementation PPP is largely ineffective in preventing pollution in Thailand. Weak enforcement, poor agency controls and weak infrastructure to police the environment are all contributing factors to the failure of PPP to have much impact on Thailand's environment.

3. The Precautionary Principle

The precautionary principle is said to have originated from the concept of 'Vorsorgepinzip'[43]in German Law that developed in German national environmental law during the 1970s and 1980s. The principle was created in order to develop effective

[42] Thailand National Report to UNCED , June 1992, pp.122-123.
[43] O. MacIntyre and T. Mosedale, 'The Precautionary Principle as a Norm of Customary International Law', (1997) Journal of Environmental Law Vol. 9, No. 2, 221-241. and D. Freestone, 'The Precautionary Principle', in R. Churchill and D. Freestone (eds.), International Law and Global Climate Change, (London/Dordrecht/Boston, Graham&Trotman/Martinus Nijhoff, 1991) pp. 21-39.

policies decision-makers relying upon the best available scientific data. [44] The 1992 Act also incorporates the precautionary principle to environmental protection in Thailand. Some elements of application of the precautionary principle can be seen in the Act. In particular Section 96 creates strict liability for operators of a source from which a release of pollution has occurred when such a release has led to an injury to life, body, health of other persons or damage to the property of other persons or the State. The operators are liable to pay damages in such cases without any requirement of intent or negligence on their part.[45] The damages and compensation for which operators are liable under this provision include all the expenses which the Government has incurred in taking measures to mitigate the effects of the pollution and the costs of the loss or damage caused to natural resources or public good. Another Section embracing the precautionary principle is the requirement in Section 10 for the Minister of MOSTE to establish a contributory plan to mitigate pollution impacts in the event of danger or emergency caused by pollution.

[44] E. Hey, 'The Precautionary Concept in Environmental Policy and Law: Institutionalising Caution', (1992) Georgetown International Environmental Law Review Vol. 4. 303-318 at 308.
[45] Exception for liabilities in this Section are typical of those found in most liability convention and in the law of other countries. These are *force majeure* or war, acts committed in pursuance of an order from the Government or its officials and where the commission or omission which causes damages is the act of the victims themselves or the act of the other persons directly or indirectly responsible for the release of the pollution.

New Methods of Environmental Management

The 1992 Act provides a variety of suitable principles for environmental management. There are five categories covering various preventive and corrective measures.

(a)The Prescription of Environmental Quality Standards

The environmental quality standards set the criteria to be observed by the parties carrying out projects or activities. The environmental quality standard prescription may be set up as a mean environmental standard known as *'Ambient Standard'* or as a standard at the source of pollution known as *'Emission Standard'*. Sec. 32 of this Act empowers the National Environment Board (NEB) to publish in the government Gazette its notifications of environmental quality standards.

(b)The Designation of Conservation and Environmentally Protected Areas and Pollution Control Areas

Designation of Conservation and Environmentally Protected Areas provide an alternative way of identifying areas characterised by unique natural ecosystems which are different from other areas or worthy of being conserved due to their natural or aesthetic values. It includes areas in which environmental quality, is in a critical condition such areas need to be environmentally protected in order to do this the Department of Pollution Control will be able to employ special measures authorised by this Act.

The Thai Government's present interim administration has announced that it will ensure that the 1992 Act is properly implemented and enforced until new elections are held. Ministerial regulations and directives will be introduced in coming months to facilitate enforcement of the Act. The tourist resort centres of Phuket and Pattaya have already been identified as the country's first Pollution Control Zones under the 1992 Act.

Government authorities will, therefore, have the power to regulate businesses, the use of land, and construction activities in these areas and to ensure that environmental impact assessments are conducted. This includes assigning a person directly responsible for such areas to prepare an environmental quality plan. The 1992 Act therefore provides that such areas shall be designated as conservation and environmentally protected areas and pollution control areas according to their individual characteristics and the nature of environmental problems in the areas.[46]

(c)The Preparation of Environmental Quality Management Plan

The 1992 Act requires that each government agency has to prepare a development plan for its operation. In the past environmental quality management plans were included in various national social and economic development plans and thus they were consistently disregarded until accumulated problems became detrimental. Since environmental management can not be overlooked anymore, the 1992 Act therefore proposed as the duty of the concerned agencies the preparation of environmental management plans. This is a new approach of a 'Decentralised' system. In the past, Thailand was used to the Centralised approach followed by the creation of a Ministry of the Environment. It has been proven that this did not work properly.

Section.37 of the 1992 Act states that when a locality is designated as a conservation area and is a protected pollution control area, the Governor of the Provinces of such localities shall have the duty to formulate a Provinces Action Plan including an action plan for mitigation and elimination of pollution. This should be submitted to the National Environment Board (NEB) for approval within 120 days from the date the NEB has

[46] At present, there are 3 areas designed as conserved and environmentally protected namely, Chionburi Provinces (Pattaya City), Phuket Provinces(Pi Pi Islands) and Krabi Provinces.

notified the Provinces of the formation of such a plan. The duration may be extended as deemed appropriate.

(d)The Preparation of Environmental Impact Assessment Reports

This kind of Assessment Report is another measure to prevent environmental problems caused by the introduction of projects or the engagement of activities with a possibility of severe impact on the environment. The 1992 Act requests that projects are accompanied by reports on the environmental impact assessment. These are submitted for approval to the National Environment Board. A ministerial notification has specified nineteen types of projects or activities[47] requiring submission of such reports. (Sec. 46)

This report is required to indicate methods used to mitigate such impact and the project's monitoring system which is used as an early-warning system. It should be noted that it is the first time Thailand has had these kind of assessments.

(e)The Provision of Treatment Systems

For the first time, the 1992 Act introduces 'the Central Wastewater Treatment' into environmental law. One way to prevent polluted wastes from operations being discharged into the public domain is to treat them first. The 1992 Act stipulates that the government is required to provide central treatment facilities namely central wastewater treatment facilities and central waste disposal facilities. The treatment services shall employ the polluter pays principle (PPP), i.e., when the owner or the possessor of the source of pollution does not have onsite treatment facilities. They are required to send the wastes to the central treatment facilities at their own expense. (Sec.90)

[47] Notification of MOSTE the Prescription of types and sizes of projects or activities of government agency, state enterprise or private person required to prepare EIA reports, totally 19 types of projects.

Secondly, there are promotional measures which can be described as follows; Environmental management led to a better environment but it is very expensive in the sense of business costs. Thus it sometimes discourages the owner, possessor of the source of pollution or agencies concerned from complying with the law. This Act therefore provides promotional measures to ensure environmental management. The businessman can apply for help or exemption from taxes from the Inland Revenue. Requests for assistance with import duties for essential necessary machinery, equipment, instruments, tools, appliances or materials which are not available in Thailand. (Sec.94. (1)) Second, requests for assistance when applying for permission to bring foreign experts into the country to give advice on environmental problems including exemption of income tax for such people.(Sec. 94 (2)) and thirdly, requests for assistance and support to carry out environmental protection projects or activities in the form of low interest or interest free loans or grants from the Environmental Fund.(Sec.95).

The Roles of NGOs in Environmental Protection

In the 1992 Act, the Non-Government Organisations (NGOs) found a new role in representing public opinions in matters protecting the environment. Generally, in the field of the environment, NGOs are useful and some times an effective pressure group to promote better environmental protection. The 1992 Act gave official recognition to NGOs their roles and status. Currently in Thailand, NGOs are operating strongly for environmental protection so much so that it looks like they are opposing any governmental projects they see as affecting the environment. At this moment, large numbers of independent NGOs are operating in Thailand. They must register and be recognised by the Ministry of the Education and Ministry of Interior. Foreign NGO's are also required to register with the Department of Environmental Quality Promotion as a

double check procedure(Sec. 7). To encourage registration, NGOs are entitled to receive support and assistance through government grants which may be allocated from the Environmental Fund. (Sec.8) The involvement of NGOs (Non-governmental organisation)[48] represents an attempt by the Act to promote public participation in environmental management.

A new provision in the 1992 NEQA permits non-governmental organisation (NGOs) to be involved directly with environmental efforts.[49]NGOs are also entitled to nominate candidates for cabinet appointments as qualified members of the NEB. They would act on the NEB as private sector representatives.*(Under Sec.8)* It is suggested here that this new provision symbolises an ambitious view of the role of NGOs to get involved in environmental protection efforts.[50]

Sadly, NGOs in Thailand are currently fragmented, scattered and uncoordinated although a few major NGOs in Bangkok have consistenly pursued environmental

[48]See Suwana-adth, Malee. Environment and Sustainable Development: The NGOs' Perspectives. A paper presented at National Symposium on Thailand's Preparation for the UNCED 1992, 4 November 1991, Bangkok.

[49]Under *Sec.7* and *Sec.8* it may be "granted by the authorities with assistance or support in the following matters: (1) The organisation of volunteers to assit the performance of duties of government officials under this Act or other laws concerning the enhancement and conservation of environmental quality;(2) Public relations campaigns and dissemination of information or data to promote public awareness and proper undertanding and knowledge of environmental protection and conservation of natural resources;(3) Providing assistance to people in certain areas of the country to initate projects or activities for environmetal protection and conservation of natural resources;(4) Conducting studies and research with respect to enviromental protection and conservation of natural resources and bringing to the attention of the Government or agencies concerned the viewpoints and suggestions that are based upon the outcome of such studies and research and (5) Providing legal aid to people who are endandered or afflicted by damage caused by leakage of pollutants or contamination, as well as acting as the representative of such pollution victims to bring lawsuit and litigate claims in court for compensation or damages to which they are entitled as legal remedies."

[50] According to Welch (1996), he states of the opinion that "This legal provision allows the government in some instances to share its enforcement power, and as a result, at least in theory, to minimise the government's burden in staffing and funding all environmental enforcement in the country"(See also Welch, J. (1996) Environment law in the ASEAN Region. Paper presented at the Conference on Environmental Priorities in Southeast Asian Nations, 12 January, Bangkok.)

objectives and some NGOs were accused by the government of taking bribes from foreign countries to unstabilise and destroy Thai culture.[51]

Current State of Environmental Law in Thailand: Critical Analysis and Evaluation

The preceding analysis of Thai laws relating to water resources and water pollution control reveals the following systems in Thailand.

A. Thailand's Political and Cultural Approach to Problems

Thailand generally suffers from a shortage of appropriate laws and administrative resources for managing water problems effectively.[52] Ambiguities and poor law enforcement, duplication of administrative responsibilities, frequent lack of knowledge and expertise in some relevant water agencies and most of all corruption, all diminish the effectiveness and efficiency of the state bureaucracy's role in resolving the increasing problems of water resources in Thailand. According to Christensen (1994), many problems that arise are not dealt with adequately in the view of the public and often the problems are driven into the political arena where they are resolved by politicians lobbyists and mobs instead of the due processing of the law. Moreover, many features of the law and the state administration encourage political solutions. [53] That is why we have to understand the Thai political system first then to move on to the enforcement of environmental law which deals with the water issues.

Thailand is among the few Third World countries never to have been formally subjugated by any Western colonial power. Modern politics in Thailand began in 1932 with the overthrow of royal rule *(absolute monarchy)* by a small group of military and

[51] P. Phongpaichit, The Politics of Economic Reform in Southeast Asia , 1992.
52 S. R. Christensen and A. Boon-Long, Institutional Problems in Thai Water Management, (Bangkok, TDRI, 1994).
[53] S. R. Chiristensen, " Water Allocation Conflicts in Thailand: An Analysis of Government Failure." In Water Conflicts, (Bangkok, TDRI, NRE Programme, 1994), p. 53.

civilian officials who were mostly graduates from western countries aiming to found a *democratic constitutional monarchy*. However, the country rapidly fell under the rule of military juntas or elected governments that relied much more on the approval of the army generals than on political parties and the peoples consent. The four decades following the end of the absolute monarchy saw the military-bureaucratic elite dominate the political scene. During the 1932-1973 period, only ***three*** army generals served as the Prime minister for a total of *32* years.[54] Whether elections were allowed or not, military-bureaucratic officials overwhelmingly dominated the ranks of the cabinet ministers. These military-bureaucratic leaders usually rose to power through coups events which take place more frequently in Thailand than any nation. There have been at least **23 coups, 16 written Constitutions** since the overthrow of royal rule in 1932. On average between 1932 and 1973, there was **one coup** attempt **every three years**. As a result, in order to secure political protection, most of the private sector such as Chinese merchants or companies gave bribes to law enforcement officers or sustained connections with government leaders by inviting them to join their boards of directors. A mid 1950s survey found that 60 percent of the most influential Chinese had prominent Thais or generals serving alongside them on company boards.[55]Since the October 1973 student uprising and the collapse of the country's longest lasting military regime, which was the end of '*the Bureaucratic Polity*' Thailand entered into the new era of the so called 'the half democracy or semi democracy'. There has been decline in the scale of clientelism and corruption and the abuse of power in Thailand. The relation between the state and the business community has changed from one of *clientelism* with the state as *the patron* and

[54] A. Laothamatas, Business Associations and the New Political Economy of Thailand, (Singapore, Westview Press, 1992).

business as *the client* to one largely of *equal partnership.*[56]Business people have entered political parties, the House of Representative and governments cabinets. The proportion of cabinet members with a business background has increased markedly reaching almost 50 percent during 1980s.[57]Moreover, with electoral politics in full gear (1980s) and early 1990s corrupt dealings between government and business have showed up. In a country where vote-buying is often needed to win an election and funding for party activities and election campaigning comes mostly from secret donations (rather than legitimate government sources or publicly acknowledged donations), corruption becomes a crucial means for politicians to draw money from businesses. Along with personal aggrandisement, this political imperative to secure financial resources fuelled the upsurge of corruption under General Chatichai 's government (the first fully elected government since the mid 1970s). This led to a military coup in February 1991 when the military junta cited eradication of corruption as the principal justification for its action.[58] After the coup, the military set up the commission to investigate whether ministers and associates of the Chatichai regime (all together 15 people) had become *'unusually wealthy'* while in office. The results were only **two** were declared *'clean'* and 13 others including Chatichai were adjudged to have acquired wealth through malfeasance. Their assets were seized.[59]

To sum up, the relationship between the government and business has shifted into an equal partnership for the last past decade. The Thai business has enjoyed a considerable

[55] A. Laothamatas, ' From Clientelism to Partnership: Business-Government Relations in Thailand', Business and Government in Industrialising Asia, (Singapore, Westview Press, 1992), p.197.
[56]Ibid., p.195.
[57]Ibid., p.201.
[58] A. Laothamatas, opcit., p. 208. Chatichai's government was known as the 'buffet Cabinet'.
[59] P. Phongpaichit and C. Baker, Thailand: Economy and Politics, (Kuala Lumpur, Oxford University Press, 1995), p. 357.

degree of this kind of status. Nevertheless, it is not as clear for me as A. Laothamatas (1992: 211-212) states

" Although the economy was organised largely along capitalist lines, business had a minimal role in politics and public policy making...and the role of business-based political parties in the initiation and systematic formulation of policies is still limited. Particularly in the area of long-term planning and macroeconomic management, the technocrats maintain a considerable degree of independence from business interest."

And at A. Laothamatas(1992:208) noted

"and in contrast(Thailand) to so many other developing countries, the existence of widespread of corruption *has not led* to economic stagnation or decline."

The fact is the collapse of the economy in Thailand in 1997. It was done by mismanagement and malfeasance of the former government and the new government ordered an investigation to prosecute the former prime minister and finance minister including five senior officials of Bank of Thailand responsible for depleting the country's financial reserves and triggering the economic crisis.[60]

The negative side of political struggle in Thailand gives us the whole picture of how it is difficult to implement the government's policy or to enforce legislation especially dealing with businessmen. But it would seem extremely unfair to judge the developing countries like Thailand only on environment issues whose priorities are quite different because Thailand has been struggling with many issues such as military coup, unstable government, corruption, poverty, economic crisis etc. since the first coup in 1932. There are however, some encouraging signs. A clean environment is no longer considered a luxury but a necessity in the policy-making circles. There is a growing awareness of the

[60] Bangkok Post, May 7, 1998.

danger of environmental degradation in Thailand so much so that environmental accountability is beginning to penetrate into the political agenda.[61]

B. The Enforcement of the Law

Lack of law enforcement is a serious problem in Thailand. The Thai research institute, a leading body noted that despite their impressive introduction in the 1992 Act, enforcement of the new environmental laws remains weak. One reason for this problem is that the environmental law in Thailand is modelled on the United States laws. In Thailand there is less stringent implementation given the difference in the level of development.[62] It is generally accepted that enforcement of environmental laws has always been lax due largely to neglect on the part of the officials concerned. The penalty prescribed by law is always too lenient in both penal and deterrent terms being only a small fine in most cases. Thus, offenders find it remains profitable for them to pay the fine and carry on with their business the fine being in effect treated as a license to pollute. The 1992 Act seeks to remedy these weaknesses. The Act has increased these penalties in terms of the amount of fines and length of imprisonment imposed. Moreover, enforcement capability is currently weak. For industrial pollution enforcement, for instance, the NEB cannot directly monitor and enforce the findings and recommendations of an EIA that an industry must submit with its license application nor does this power fall clearly to the IED(the Industrial Environment Division) of the DIW(Department of Industrial Works). If the industry does not enforce the recommendations of the NEB and IED, the only way

[61] For example, the recent Governor of Bangkok won the last election by his environmental slogan (Green Bangkok). Many major political parties now have the environmental agenda in their policy.
[62] Kaosa-Ard et al., op.cit, p. 72. The public's unacceptance of environmental quality enactment was due to many elements, such as, the prescription of standards of wastes discharges from factories to environment was made by copying them from other countries that are fully developed technologically such as U.S.A. or Germany. And the said standards were too good for the capability of the local private sector (industrial

that the former may be brought to account is by NEB disapproval of the next EIA submitted with a license renewal application. This does not however, prevent the damage caused by earlier non-compliance.[63] Other factors contribute to enforcement problems. The law enforcement problems in Thailand can be discussed in the following details;

1. Vested Interests, Enforcement Constraints, and Statistics

Thai newspapers, as well as popular books and academic literature document the lack of enforcement plaguing Thai environmental laws. For example, Thai newspapers recently directed widespread attention to a grade school located near a petrochemical complex. Many students had developed allergic reactions, respiratory problems and skin diseases.[64] Rather than proceed with strict enforcement actions against the offending factories, officials decided to move the school.[65] Some nearby residents alleged that the factory belonged to a deputy interior minister.[66] Newspapers have also reported that many influential businessmen and officials are involved including local police and customs officers, Forestry Industry Office officials, district forestry officers, as well as village headmen have been involved with illegal logging on the Thai-Burmese border and that illegal logging is possible because senior forestry officials have been bribed by logging companies.[67] Other articles involving conservation of marine resources noted

sector) to meet. And sometime the standard was better than the technological potential of the government to monitor.

[63] P. Kritiporn et al., Ibid., p.86. One study of EIA in Thailand concluded that in theory, the EIA is a powerful tool for environmental protection, in practices, it has little impact. See M. Unkulvasapul et al.,Thailand: Urban Sewage and Wastewater Management in Sector Development (Bangkok, UNDP/World Bank, 1991), Vol., p. 86.

[64] P. Antaseeda, 'Stench Makes Life Unbearable: Pupils, Teachers Have to Cover Their Noses', Bangkok Post Newspaper, Sept. 2, 1997, at 3.

[65] See C. Saengthongchareon, 'Toxic School Soon to be Moved', Bangkok Post Newspaper, July 1, 1997, at 2. In the interim, air-conditioners and purifiers were installed in the school.

[66] See P. Antaseeda, 'Stench Makes Life Unbearable', op.cit, at 3.

[67] The Nation Newspaper (Bangkok), May 16, 1997, 'Anti-Loggers Concede Loss', at A1 (describing forestry officials' concessions that they will lose battle against illegal logging operators because operation involved influential people with vested interests. See also Salween Logging Scandal, Watershed: People's

that provincial authorities had banned shallow-water fishing in Kanchanadit district to conserve marine life but allowed some rich people to raise mollusk in the area.[68] Popular books also document how vested interests have allowed certain parties to avoid the enforcement provisions of conservation and pollution laws. One book, Behind the Smile: Voices of Thailand, describes numerous examples of such monetary interests contributing to the illegal destruction of mangrove forests for prawn farms and authorities turning a blind eye to pollution from a frozen seafood factory.[69] Another book, Seeing Forests For Trees, discussing deforestation in North-eastern Thailand, noted that in regard to commercial tree farming using eucalyptus there are many vested interests pushing for the promotion of this tree crop throughout Northeast Thailand.[70] In a case study of the Lamphun Industrial Estate in Northern Thailand, a Thai academic detailed the problems of industrial pollution and the government's slow response to its problems.[71]

While MOSTE's Pollution Thailand 1995 report describes the Pollution Control Department's monitoring efforts for air quality, noise, surface water quality, coastal water quality, solid waste, and hazardous materials and wastes, it does not detail any enforcement actions taken against violators of environmental laws and standards.[72] The report notes the increasing number of public complaints about environmental pollution.

Forum, Mar.-June 1998, at 8 (all authorities with responsibilities for the Salween forest on the Thai-Burmese border have taken bribes from loggers, including the army and police officers, and officials of the forestry, customs and local administration departments.

[68] See 'Conservation Measures: Fishermen Protest Against Restriction on Fishing Areas', Bangkok Post Newspaper, Oct. 9, 1997, at 4. See also J. Rigg, 'Counting the Costs: Economic Growth and Environmental Change in Thailand', in Counting the Costs, op.cit, at 3, 16 (discussing problems with environmental management in Thailand, and stating corruption and cronyism makes the over- riding of objectives set out in planning documents relatively common).

[69] Ekachai., op.cit., p. 99-103, 119-121. (discussing corruption with respect to land rights).

[70] J. Taylor, 'Thamma-Chaat: Activist Monks and Competing Discourses of Nature and Nation in North-eastern Thailand', in Seeing Forests for Trees, op.cit, at 37, 46 (describing interview with north-eastern Buddhist monk Luang Phor Naan)

[71] S. Mallikamarl, Enforcement of the Environmental Law in Thailand: A Case Study of Pollution, Lamphun Industrial Estate (Tokyo, Institute of Developing Economies, 1996).

Of 5961 cases reported in 1995, 77.25 percent related to air and noise pollution, 8.3 percent related to water pollution, 5.96 percent related to waste and hazardous wastes, and 8.49 percent related to other cases of pollution.[73] The Summary of the Thailand State of the Environment Report 1994 indicated that while 6000 inspections were made regarding industrial wastewater, only twenty-three factories were identified to be in violation of environmental laws.[74]

As Mallikamarl(1996) explains "Two Thai academics attribute the constraints on the enforcement of environmental laws in part to the nature of Thai politics. Because Thai politics are often governed by coalitions of parties, and the term of the government is uncertain, administrative policies therefore lack continuity and depend upon the policies of the political parties in office at the time."[75] The government's recent pro-development policies favour economic development in human resources, science, technology, and natural resources. These policies have allowed state enterprises to come into existence in many areas such as industry, agriculture, and commerce.[76] There is a lack of political will on the part of the Government to strive for a better environment. Encouraged by the fact that many superior officials or Ministers are not concerned about environmental issues. In the line of order, many officials have to rely on their superiors to gain law enforcement

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[72] Pollution Control Department, op.cit.,

[73] Ibid., p. 72-73.

[74] See State of the Environment, op.cit, at 21. The Factory Act deals with the regulation of factories. Another article notes that, in Samut Prakarn near Bangkok, of 3351 factories, 2180 were found to be in violation of the Factory Act. See Charles Greenberg, The Varied Responses to an Environmental Crisis in the Extended Bangkok Metropolitan Region, in Seeing Forests for Trees, op.cit, at p. 166, 172-74. However, rather than force compliance, the government offered reparation, compensation and three year tax breaks to firms that relocated. Powerful industrialists are unresponsive to the state's attempt to improve the environment. As long as industrial capital is in conflict with and overrides state policy, environmental reform will be temporised.

[75] Mallikamarl and Thongpinyochai, op.cit., p. 66-67.

[76] Ibid., In Bangkok, limited legislative control and intent to enforce the little legislation available was such it was easy to get permission to build virtually anything, anywhere. See H. Ross, Bangkok's Environmental

powers. The effectiveness of their performance of this function has always rested on their discretion and on policies laid down at a superior level; the result has so far been unimpressive.[77]

2. Cultural Considerations

Thai culture is very different from the Western world. As noted by one official in MOSTE's Pollution Control Department, cultural considerations have much to do with enforcement problems of Thai environmental laws.[78] To avoid creating problems with each other, neighbours do not report environmental violations. Unless directed otherwise by authorities, businesses adopt a laissez faire approach to environmental matters to avoid the costs of carrying out pro-environment activities. One Thai professional attributes the widespread corruption in Thailand to the Thai character traits, including a tendency to compromise and overly flexible moral standards.[79]

Another Thai commentator echoes these views(R. Larpnum, 1997), stating that "Thais as a people are too soft to enforce the law, we don't want others to lose face, we don't want people to get hurt." Enforcers of the law in Thailand always face a dilemma of whether to uphold their principles or to be nice to family and friends.[80] In a Thai report entitled Study on Corruption and Democracy, interviewees identified a number of

Problems: Stakeholders and Avenues for Change, op.cit., at 147, 158 (discussing development in Bangkok through the late 1980s).

[77] The Director of Legal Division said 'he and his colleagues is always ready to tackle the pollution problems with the offender if his superiors will authorise him to do so'. Interview conducted by Dr. John F. McEldowney and the writer with the Director of legal Division, Department of Pollution Control, 18 March 1998

[78] The researcher and Professor Dr. John McEldowney interviewed with Mingquan Buapetch, Chief of Hazardous Waste Management Section, Pollution Control Department, Ministry of Science, Technology & Environment, in Bangkok, Thailand (July 28, 1997).

[79] R. Larpnum, 'Greasing the Bureaucratic Wheels', Bangkok Post Newspaper, June 22, 1997, at B1 (providing comments of a Citibank official). Mr. Larpnum notes that government officials supplement their meagre salaries with commissions when government agencies make purchases or carry out construction projects, or even steal from budgets meant for other programmes.

agencies that deal with environmental matters as having corruption problems, including the Interior Ministry, the Land Department, the Agricultural Ministry and the Industry Ministry.[81] Reliance on the police force may also be a constraint on environmental enforcement. While the police force is the only existing enforcement agency authorised to investigate criminal cases, no special police task force exists to handle environmental matters.[82] Furthermore, if officers from environmental agencies visit plants and arrest someone, it is almost always a low-level employee.[83]There are problems of human resources in the area of environmental management which is also unacceptable. As of 1989, nation-wide there were approximately 700 staff of the DIW and only 200 staff of the PCD responsible for monitoring and enforcement of emission/effluent standards at some 51,500 industrial plants.[84] In the Industrial Environment Division which is most directly responsible for monitoring the pollution control provisions of factory licenses granted by the DIW, there were only 143 staff nation-wide, obviously inadequate in view of the rapid industrial expansion currently underway.[85] The lack of human resources is one of the serious problems in environmental protection in Thailand. With salaries rising in the dynamic private sectors the most talented have migrated there and this has affected the environmental enforcement bureaucracy. As one expert noted, when he came to Thailand in the mid-1970s, government officials had once enjoyed a great deal of respect

[80] R. Larpnum, 'As a People We Are Too Soft to Enforce Any Laws', Bangkok Post Newspaper, June 22, 1997, at B3 (interview of Gothom Arya, social critic and Chulalongkorn University academic).
[81] See Ibid., Respondents identified the Interior Ministry (26%), the Land Department (10%), Agriculture Ministry (7%) and the Industry Ministry (3.8%).
[82] See Environmental Enforcement in Thailand, UNEP/APCEL/Mekong Law Centre Workshop on National Legislation for Environmental Management in the Context of Sustainable Development (Singapore, Dec. 9-17, 1996).
[83] Ibid.,
[84] P. Siwabut, Thailand Country Report: Planning and Management of Environmental Technology , prepared for the UN Economic and Social Commission for Asia and the Pacific(ESCAP), Bangkok, January,1992.
[85] D. O' Conor, op. cit, p. 187.

from the public but this had shifted 180 degrees. His office, an environmental office was now staffed with many people who were there because they could not make it in the private sector.[86]Moreover, this is related to the severe understaffing, it should be noted that very few officials especially legal officers intentionally join the (PDC) Pollution Control Department. If they can choose, they will be in the other civil service department or private sectors. Within the Department of Industrial Works (DIW), the Industrial Environment Division (IED), is the agency which is directly responsible for enforcement of industrial pollution regulations. In theory, the IED can make periodic inspections to monitor compliance with pollution standards, inspection of firms is in fact done only when a license is granted or renewed or when a complaint is made by the public. But, in reality it has only 143 officials to monitor 50, 000 factories in the BMR that means one official for every 350 factories.[87]It is also linked to financial niggardliness on the part of higher levels of government in allocating funds for the enforcement of standards despite the vastly increased environmental problems. As one report noted the budget of 1, 900 baht per factory seems too small an amount to allow effective monitoring and enforcement. Realistically, monitoring of industrial waste emission should be carried out on a monthly basis but with the available budget and workforce the task of environmental monitoring and enforcement is inevitably inadequate to enforce standards and other pollution control regulations.[88]

Another issue which has to do with problems of law enforcement is the so-called "inter-dependence" between officials and the offenders especially the owners of factories. It is widespread practice that whenever government agencies controlling or supervising

[86] W. Bello., Ibid.
[87] 'Where the pollution comes from', Bangkok Post, 26 June 1991, p. 25.

the operation of factories need support for some of their programs or activities, They usually ask for assistance from the owners of factories who rarely deny such a request. This kind of relationship certainly causes these officials to hesitate or reluctantly enforce the law against their 'donor'. This symbiotic relationship between officials and business owners has long been used in the Thai culture and it would take a long time to change this concept. This kind of relationship has developed to become "equal partnership" at national level. As one report noted corruption in the inspection division presented one of the biggest problems in enforcement such that high officials in it were seen as both very, very rich and very, very corrupt.[89]

C. Government Agencies and the Law

Problems that exist are multiple agency involvement, overlapping jurisdictional mandates, lack of co-ordination, and vague laws which impede efforts to protect the environment as follows;

1. Multiple Agency Involvement, Overlapping Jurisdiction, and Lack of Co-operation

A significant problem with environmental management in Thailand is the spread of implementation over a number of agencies cutting across various sectors and with conflicting jurisdiction.[90] For example, the Ministry of Industry handles development and

[88] P. Kritiporn et al., p. 94.

[89] Thailand has CPI (Corruption Perception Index) 3.4, number 68 from 99 countries around the world in 1999 by Transparency International Organisation and Denmark is number 1, CPI 10. (Siam Rath, No. 22. 31 October 1999 to 6 September 1999), p. 9). W. Bello., Ibid., 128, For instance, a sugar mill accused of polluting Phong River in 1992 with discharges of pollution had agreed to contribute 6 million baht to the study of the impact of molasses on the river. But not a single baht has been turned over and this is probably because one of the directors of the regulatory agency is a shareholder of the sugar mill. The willingness to compromise is very, very high and the willingness of government to confront business is very, very low. Government officials basically are afraid to confront industry.

[90] Kaosa- Ard et al.,. op.cit, at 72. An official in the Ministry of Science, Technology and Environment's Office of Environmental Policy and Planning identified overlapping jurisdictions of ministries and bureaucratic hierarchies as main problems in environmental management in Thailand. Interview with

public services, and provides environmental services; the Ministry of Science, Technology and Environment is the spokesman for the environment among government agencies, but is only in charge of the 1992 Act; the Ministry of Agriculture and Co-operatives handles nature conservation; the Department of Fisheries deals with conservation issues; the Royal Forestry Department handles forestry resources; and the Ministry of Industry is in charge of water pollution from industrial works.[91] While offices to assist the various ministries with inter-ministerial co-operation exist, they do not appear to be fulfilling this mandate.[92]

A lack of concern for inter-ministerial co-ordination and the lack of willingness to relinquish some of the powers in order to give greater autonomy to local governments compound this problem.[93] A recent report published by the Danish Co-operation on

Nawarat Krairapanond, Official in the Office of Environmental Policy & Planning, Ministry of Science, Technology & Environment, in Bangkok, Thailand (July 30, 1997).

[91] See M. Kaosa and S. Pedneker, op.cit.,, at 47-48 (assessing capacities of government institutions). Regarding land and forest management, one author comments that the morass of bureaucracy, comprised of six ministries overseeing 24 agencies in land and forestry policy, further debilitates the formulation, implementation, and enforcement of a coherent approach to deforestation problems. See also B. Hunsaker, 'The Political Economy of Thai Deforestation', in Loggers, Monks, Students and Entrepreneurs: Four essays on Thailand, 1, 23 (Bryan Hunsaker et al. eds., 1996). See also K. Inchukul, 'Cabinet to Consider Water Bill', Bangkok Post Newspaper, Sept. 8, 1997, at 4 (describing bill to manage water resources to be proposed to Cabinet because responsibility for country's water management system currently spread over various government agencies and under 38 laws). See also 'Opinions and Analysis, Inside Politics, Marine Law All at Sea', Bangkok Post Newspaper, June 26, 1997, at 9 (discussing how to improve co-ordination of agencies involved in marine affairs, including the marine police, the Navy, the Harbour Department, the Customs Department, and the Fisheries Department).

[92] See MOSTE Thailand, op.cit , at 9 (identifying one of the main responsibilities of the MOSTE Office of the Secretary to the Minister as co-ordinating with other organisations and government units in matters falling within the Minister's responsibility and to act on complaints and answer queries to the Minister.). Along these lines, one commentator points out that ministries are highly centralised and tend to operate as 'kingdoms', answerable only to themselves. Rigg, op.cit , at 3, 16. Thailand's existing institutional organisation is far from efficient and Inter-agency conflict is common, and bringing transparency in the working of the government in the matters related to natural resources and the environment, remains a formidable task.; Kaosa-Ard et al, op.cit , at 69. Even Thailand's King has noted the shortcomings of the bureaucratic system in which inter-agency rivalry often leads an agency to focus on its narrow area of interest. Co-operation among different agencies, essential to solving today's complex problems, is at best done half-heartedly, at worst not at all. Wasteful overlapping of work often results and problems are never fully or effectively solved.

[93]Kaosa-Ard et al, op.cit, at 47 (assessing capacities of government institutions); see also Mallikamarl and Thongpinyochai, op.cit.,, at 59-60 (discussing Thai citizens' participation in environmental matters and noting the conclusion of a July 1990 Ministry of Interior seminar that various unsuccessful projects were

Environment and Development (DANCED), dealing with watershed management, states that cross-sectoral co-ordination remains limited at both central and local (Provincial) government levels.[94] In discussing the degradation of Thailand's environmental resources, two Thai writers advocate a coherent and co-ordinated approach for ***sustainable development*** because past experience has shown that available resources can be most effectively used when the various agencies involved adopt an integrated area wide approach to a particular task.[95]

There are too many regulations and many government agencies dealing with pollution. There are often conflicts or overlaps when enforcing the law among these agencies. There may also be problems of jurisdiction over their territory. For example, if a pollution case occurred in the municipal when reporting this incident to them they would not accept the case. They think this case is not in their jurisdiction, and should be referred to the navigation office because it happened in the irrigation canals and should be dealt with according to the Navigation in Thai Water Act, 1992. This means there are at least two government agencies dealing with this case. This is happening more frequently and could be dealt with if every agency focused on the important problems of the environment and co-operated with each other.

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mostly single-sided operation of the government and lacked integration among the agencies themselves, and the agencies and the public in general, and the operation of such projects were run by agencies from central administration

[94] Danish Co-operation on Environment & Development, Strategies and Institutional Arrangement for Natural Resources and Environmental Management in Watershed Areas in Thailand: Proposals for Improvements (Bangkok, DANCED, No. 27, 1997). One of the primary weaknesses identified in the report is limited inter-departmental and inter-ministerial co-operation and co- ordination. Id. at 35. See also Piyachatr Pradubraj & Somrudee Nicro, The Environmental Awareness and Attitude of the Government and Media in Thailand, in Environmental Awareness in Developing Countries: The Cases of China and Thailand (Bangkok, 1997), pp. 178-186. It is stating that a weakness of environmental control in Thailand is a lack of co-ordination among related agencies. In addition to MOSTE, there are several governmental bodies working directly and indirectly. The complication occurs because they independently rely on different frameworks with their own specific laws and regulations. This hinders the progress of implementation and often brings conflicts among associated bodies

There is a discrepancy between policy formulation and policy implementation leading to weak enforcement. The 1992 Act is considered to be the most important legislation for providing mechanisms for comprehensive integrated environmental management. This Act provides the office of the National Environment Board(NEB) with the authority to formulate environmental standards but not enforcement capacity quite unlike other countries where the central environmental agency also monitors compliance and imposes sanctions.[96]In the case of Thailand, authority for enforcement of pollution regulation is with other agencies, the Industrial Environment Division (IED) of the Department of Industrial Works (DIW) for industrial pollution and the Pollution Control Department (PCD) for general pollution.

There has also been a contradiction between the policy of the different government agencies. The environmental agencies' efforts to control pollution were contradicted by the desires of other agencies to attract investment at all costs. Thus the Board of Investments (BOI) has the authority to accept applications for firms it is promoting. Permit processing includes co-operation among the DIW, NEB, PCD and the BOI but much of the actual authority is left with the BOI.[97] This is a problematic arrangement in light of the fact that the BOI has recently given promotion privileges to industries classified as potentially hazardous waste generators including chemical products, electronics, textiles and metal fabrication. Indeed, an analysis of BOI promoted industries showed an increase from 25 percent in 1987 to 55 percent in 1989.[98] This is hardly

[95] Phantumvanit and Sathirathai, op.cit., at 31-32.
[96] P. Kritiporn et al., Ibid., p.86. In England and Wales, it has a single the Environment Agency(EA) which also monitors compliance and imposes sanctions.
[97] P. Kritiporn et al., Ibid., p.88. See also M. L. Shain, 'Thailand's Board of Investment: Towards a More Appropriate and Effective Rural Investment Promotion Policy', in Pacific Rim & Policy Journal Vol. 3, June 1994, pp. 141-182.
[98] Ibid., p. 94.

surprising since the frame of mind of many of the technocrats who head the agencies charged with attracting foreign investment is that as one account puts it "Thailand must compete with lots of neighbours and with the other regions". There will be environmental and cultural "trade -off" in the course of economic development.[99]

2. Loopholes and Vagueness in Laws

Poorly drafted and ambiguous laws, that are often difficult to understand, also hinder environmental management. Thailand's laws are very brief indicating only the principles and leaving enormous discretionary power to the line Ministry, which dispatches officers from Bangkok to the provinces. The DANCED report states that national legislation is, in general, fragmented, sectoral, out-of-date and revisions/amendments are inchoate and that these weaknesses apply equally to the current legislative arrangements pertaining to land, forest, water and mineral resources.[100]

These are significant problems, for instance, when factories in the industrial zone near Bangkok polluted nearby neighbourhoods and adversely affected the health of students at

[99] T. Fox, 'Life and Death in Lamphun', The Nation, 28 October 1994, p. C1. Another case of the contradiction between economic growth and environmental enforcement resulting in opposing bureaucratic moves was the sharp reduction in the tariffs on imported cars by the Anand Payarachun government in 1991. Guided by neo-classical doctrine about consumer sovereignty it did bring down the price of cars but sharply increased the cost to the environment and public heath as it contributed to significant more cars hitting an crowed city of BMR. See W. Bello., Ibid., 129.

[100] For example, the Factory Act that was passed in the same year as the 1992 Act may present problems because it aims to promote industrial development rather than stricter control over emissions from industrial plants. First, Instead of rectifying the problems of insufficiency of resources to effectively enforce the laws, the Act has the effect of exempting from its control smaller industrial plants with machines below 50 horsepower or employing not more than 50 people. Although medium-seized factories have an obligation to notify, this amount to no more than a formal procedure with little actual control exercised in practice considering the unimpressive performance of the DIW in the past in enforcing standards. One could argue that it is the smaller plants which are more likely to violate emission standards because they have little capital and need to minimise costs which will tend to breaches the law. Secondly, the different emission standard setting by the DIW. This makes it difficulty in term of convicted the offender, there is more often the conflicts is occurred between the DIW and PCD from different governmental agencies. It should be notable that the standards setting by the DIW are relatively much lower than other agencies. These provisions of the Factory Act clearly indicate the priority given to economic development over environmental considerations in making it easier for industrial plants to carry on their activities.

a nearby school. Thai officials could do nothing because there were no emission standards for substances found to cause the air pollution and therefore the factories could not be penalised.[101]Thailand's 1992 Hazardous Substances Act currently makes no distinction between hazardous waste and hazardous substances.[102] In addition, Thailand has no rules to keep track of the types of hazardous wastes generated, where they are kept and in what manner they are eventually treated or disposed of. As a result, officials in charge of hazardous waste management lack essential information on the types of waste they are dealing with, its origins, movement and destination. Although the 1992 Act has established a comprehensive framework for environmental management, the administration and monitoring of laws and standards remains fragmented. Enforcement of and improved efficiency in environmental control fall far short of the aims envisaged by the Act. Despite the institution reforms introduced by the law resulting in the elevation of the NEB and the creation of the three new departments within the MOSTE authorised to deal specifically with pollution and planning little has changed in substance. New regulations meant setting new emission standards. These standards are still based on standards which existed long before the Act even though they are much lower than those in developed countries.[103]According to some experts, Thailand's effluent standards for

[101] K. Inchukul, 'Polluting Factories Escape Prosecution: No One Held to Blame for School Torture', Bangkok Post, July 16, 1997, at 4. Chemicals found in the polluted air included acrylonitrile, benzene, stryrene, toluene, xylene, and acetic acid. Acrylonitrile and benzene are known carcinogens while other substances such as stryrene are toxic gases. The situation subsequently improved when MOSTE's Pollution Control Department ordered adjustments at many plants and the temporary closure of a factory. See also K. Inchukul, 'Map Ta Phut Stench Almost Eliminated: Toxic Leaks from Factories Plugged', Bangkok Post , Sept. 4, 1997, at 4

[102] See A. Kongrut, 'Toxic Management Master Plan Proposed: Monitoring it from Source to Disposal', Bangkok Post , Sept. 14, 1997, at 2.

[103] Since the early 1970s, the debate on international pollution standards has been dominated by the argument that very low industrial pollution control requirement are justified and should contribute to a country's comparative trade advantage. The argument assumes that developing countries (like Thailand) with low pollution control requirement on industry may have greater physical capacities to assimilate pollutant and/or lower social demands for environmental quality. But, it has been a study that low pollution

wastewater pollution are dangerously outmoded.[104] They were copied from Texas environmental standards in 1982 have not been updated since then to take into account new technical data on water pollution and Thailand's accelerated industrialisation.

D. The Problems of Environmental Awareness

Environmental awareness has recently increased in Thailand, but many challenges lie ahead. It is interesting to see how NGOs and individual including the government and private sector have increased their awareness of environmental problems for the past few years as follows:

1. Individual and Non-Governmental Organisations (NGOs)

Throughout Thailand and especially in Bangkok, the integration of both urban and rural populations into a mainstream consumer society has coincided with an increasing awareness of environmental degradation.[105] In addition, Thai consumers have become more serious about selecting hygienic food, due largely to fear of cancer from consuming too many chemical substances.[106]The environmental movement in Thailand gained prominence in the early 1970s, with farmer-led protests to gain rights to utilise and

control requirement in these nations are more likely to result from political failure than from superior capacities to absorb pollutant or from lower demand for a clean environment. See G. Porter, 'Pollution Standards and Trade: The Environmental Assimilative Capacity Argument', Georgetown Public Policy Review, 1998, Vol. 4, pp. 49-67.

[104] W. Bello et al., Ibid., pp. 126-127. For instance, the country still has no standards on dioxin levels. Nor are there standards for soil pollution. Air pollution standards are also dangerously outmoded. Thailand's standards for atmospheric lead is six times that of USA, having been set several years back when harmful effects lead not yet become apparent. S. Ruangkanchanasetr et al., 'Lead poisoning a severe threat to the nation's heath', TDRI Quarterly Review, March 1994, p. 25.

[105] P. Hirsch and L. Lohman, 'Contemporary Politics of Environment in Thailand', Asian Survey (1989), p. 439. A casual reader of the Thai press will have noticed that environmental issues have become important to a variety of groups in recent years, including farmers, urban dwellers, the liberal intelligentsia, and the country's ruling elite.

[106] N. Tantemsapya, 'Sustainable Agriculture in Thailand', in P. Hirsch ed., op.cit., p. 268, 283, Tantemsapya also notes that people with higher educational and income levels tend to be more health-conscious. Because of limited supply, some organically grown vegetables and other foods are expensive and only those with higher income can afford to buy them. Although there are alternative markets for these foods, it is still difficult for people to buy hygienic and organic produce on a daily basis. In order to

manage natural resources, and with the work of NGOs.[107] These movements increased in momentum in the early 1990s, influenced by international efforts, including the 1992 Earth Summit.[108] As the study of environmental awareness by T. Funatsu(1997), researchers concluded, although one would expect Thailand's initiatives on environmental problems to be at a comparatively early stage, people already have an awareness which in developed countries appeared only after environmental movements had made a certain measure of progress.[109] Thirty-four percent of all respondents identified deforestation as the most serious environmental problem, thirty-one percent identified air pollution, and twelve percent identified water contamination.[110]

Although 64% of the total population in Thailand are agriculturists[111] living outside Thailand's main cities, a recent survey indicates that environmental awareness is growing throughout Thailand. In a large-scale environmental awareness survey, apparently the first of its kind in Thailand,[112] people throughout Thailand identified deterioration of nature/environment as the most serious social problem in Thai society today. When asked whether environmental protection or economic development should be given priority, fifty-nine percent in Bangkok, sixty-eight percent in the Rural South, and sixty percent in the Rural North chose environmental protection.[113] In addition, NGOs play an important role in Thai conservation and pollution matters. Today, approximately 200

increase consumption of pesticide-free produce, people's preference for buying only attractive-looking vegetables would probably have to change.

[107] See T. Funatsu, 'Environmental Awareness in Thailand; Institutionalisation of Environmental Problems and the State of the Save- Nature Boom', in P. Pradubraj and S. Nicro, Environmental Awareness in Developing countries: The cases of China and Thailand (Bangkok, 1997), pp. 169-72.

[108] Ibid., pp. 172-173, and pp. 237-256. (Discussing various environmental movements in Thailand from the early 1990s onward).

[109] Ibid., p. 212 and p. 235.

[110] Ibid., p. 217.

[111] Ibid., p. 181.

[112] Ibid., p. 29, 34-36.

[113] Ibid., p. 169, 170-171.

environment-related NGOs thrive in Thailand.[114] The majority of these focus on improving the local environment, while some 15 to 20 of these address broad issues of national environmental policy.[115] These organisations have been able to encourage greater participation by a broader segment of Thai society [in environmental matters] and to promote structural changes that may foster pluralism.[116]

2. The Government and Private Sector

The government also vocalises this environmental awareness, but its actions do not always follow its words. The 1992 Act sets forth an ambitious environmental protection scheme[117], and the government's annual reports portray its actions as balanced and comprehensive.[118] However, one recent newspaper story discussed how some government officials have disregarded evidence that the building of the proposed Lam Saphung Dam in north-eastern Thailand will negatively affect forest plants and wildlife.[119] Another story revealed that the Petroleum Authority of Thailand (PAT), a government agency, approved a 260-kilometres pipeline, built in conjunction with the Burmese government. This pipeline will negatively affect forests, parks, and watershed areas without an environmental impact assessment which in violation of environmental

[114] See K. F. Quigley, 'Environmental Organisations and Democratic Consolidation in Thailand', 9 Crossroad 1, 5 (1996) (identifying three types of NGOs in Thailand: (1) public education organisations; (2) policy advocacy organisations; and (3) policy research organisations)
[115] Ibid.,
[116] Ibid., p. 23.
[117] See the 1992 Act , (Chapter I, National Environment Board; Chapter II, Environmental Fund; Chapter III, Environmental Protection; Chapter IV, Pollution Control; Chapter V, Promotional Measures; Chapter VI, Civil Liabilities).
[118] Pollution Control Department, 'Pollution Thailand 1995', in State of the Environment Report (Bangkok, PCD, 1996).
[119] C. Ridmontri, Supported to Saturation Point, Bangkok Post Newspaper, Aug. 26, 1997, at 8 (detailing history of Lam Saphung Dam, including questionable activities by politicians and the dam's negative effects on the environment)

law.[120] In addition, the government makes little effort to promote proper city planning. For example the bulk of Bangkok's industry consists of small, poorly controlled enterprises scattered throughout the metropolitan area. There is little ecological or public health rationale for the location of activities, and poor knowledge of how air and water flows expose the public to the waste products of traffic and industry.[121]

A study on environmental awareness also reviewed the competence of Thai government officials in enforcing environmental laws; it concluded that a primary weakness is the poor legal knowledge of state officials, especially those who directly enforce the law.[122] The study points out that without understanding the legislation process, these officials dare not punish violators because they are scared of future potential problems or confrontations with influential people, and this eventually brings inefficient performance.[123] From the 1970s until the 1990s, governmental development plans introduced many laws involving the preservation of environmental quality without taking adequate consideration of their enforcement conditions.[124]

The private sector, particularly industry, has been focused on development, and Thailand has paid a price in environmental degradation.[125] This problem has been

[120] See K. Inchukul, 'Green Groups to Sue PTT for Damage to Forest Land', Bangkok Post Newspaper, July 19, 1997, at 3.
[121] H. Ross, 'Bangkok's Environmental Problems: Stakeholders and Avenues for Changes', in Seeing Forests for Trees, op. cit., p. 149.
[122] Pradubraj and Nicro., op.cit., p. 189.
[123] Ibid., In reference to the NEQA Act of 1992, the authors write that current officials are working without adequate technical skills and this situation reduces management capacity
[124] See S. Mallikamarl., op.cit., p. 51. She also notes that the 1992 laws have materialised the awareness of the government sector in the rights of the people.
[125] See, e.g., T. Thongpao, 'Industrial Expansion Creates Pollution', Thai Development Newsletter, Jan.-June 1997, at 61 (detailing cases of industrial pollution). See also Mikimasa and Yoshida, 'Industrial Policy and Industrial Waste Countermeasures in Thailand', in Development and the Environment: The experiences of Japan and Industrialising Asia, (Bangkok, Environmental Centre, 1995), p. 297 (discussing Thai industrial policy, industrialisation, industrial pollution, and noting that pollution-producing factories are on the increase.

exacerbated by the push for economic development. However, this policy may be changing, as the well-respected Thailand Environment Institute is active in this area, particularly through its industry and environmental programme and business and environmental programme. Objectives include minimising waste and improving clean-up operation's through economic instruments, clean technology, and command and control measures; improving urban and rural environmental quality in terms of clean air and water, solid and hazardous waste management and environmental planning; and fostering linkages between the government and private sector.[126]

Conclusions

The outline and discussion of the 1992 Act above shows how the 1992 Act is the most comprehensive piece of Thai environmental legislation to date. It is both a code of environmental law and a reform which is intended to provide the foundation for the future development of environmental law in Thailand for decades to come. It seeks more effectively to extend the reach of the law to cover all the main areas of the environment. In its form and substance the 1992 Act follows the pattern of environmental laws common to the region intended to bring up-to-date Western standards of environmental protection into Thailand. It is ironic that western economic growth has necessitated the need for greater environmental protection in Thailand. Nevertheless it is very doubtful that the 1992 Act will have much real impact. The precise reason for this is that Thailand's environmental problems are diverse and may be found in rural areas as well as larger cities. In Thailand the law is rarely used in rural situations to oversee disputes. The

[126] Thailand Environmental Institute, 'Towards Environmental Sustainability', in 1996 Annual Report (Bangkok, TEI, 1997), pp. 30-32, 34-39.

absence of good enforcement plans makes implementation of the 1992 Act almost impossible.

In Thailand rapid economic growth in the 1980's and 1990's resulting from industrialisation and export promotion has been accompanied by deterioration in environmental quality. It is difficult to place environmental problems at the top of the political agenda. There are also technical aspects of the 1992 Act that make enforcement difficult to achieve.

The 1992 Act and other regulations pertaining to the environment set definite targets to improve environmental quality and management throughout the country. This was a departure from previous legislation on a number of accounts. Many of the operational principles of sustainable development were embodied in the 1992 act. However, there is the question of whether technical resources and expertise are available to implement the new laws. A further difficulty is the morals and behaviour of officials. Corruption and poor administration are responsible for weak enforcement strategies. Public awareness of environmental issues is also unclear and poorly focused.

The 1992 Act modernised Thailand's environmental laws but the question of how to enforce them in terms of application and implementation remains unclear. Despite the ambitious goals of the 1992 Act, it is questionable as to how suitable the 1992 Act is for a developing country like Thailand? The question also arises as to how effectively the 1992 Act is working. The 1992 Act appears to offer some strengthening of the legal powers to regulate the environment. These powers provide for a degree of decentralisation but they do not provide sufficient flexibility to allow rural communities to make use of them.

The fundamental assumptions that underpin the 1992 Act are that the environment is protected through legal rules enforceable in the courts. This idea of legal enforcement is

uniformly adopted by most western countries. It may be questioned whether these fundamental assumptions are valid ones when applied to Thailand. At the time of writing no prosecution under the 1992 Act has been taken through the Courts.[127] This point underlines the fundamental problem with the 1992 Act.

[127] The Krabi Provincial Administration Organisation (PAO) and Tambon Administration Organisation (TAO) of Ao Nang authorised the Lawyers Association of Thailand (LAT) to be their legal representatives in the lawsuit against the Royal Forest Department director general and 20th Century Fox for damaging a national park. The vice chairman of PAO, alleged that RFD's director general had abused his authority under the 1961 National Park Act by allowing the Hollywood studio to alter the landscape of Maya Beach on Phi Phi Island. Santa Pestanji of Santa International Film Production Co has also been named as a possible co-defendant. The producers have cleared the beach park and replanted nearly 100 coconut trees for shooting "The Beach" starring Leonardo DiCaprio. Unlike the western, Thailand is not litigation-minded. To solve grievances, villagers would rather block highways than take the powers that be to court. In a society which shuns confrontation except at the heart of the moment, this is a step taken in desperation, a statement released by a group of environmentalists backing the villagers. Any way, the local government sued central government with The National Park Act 1992 not the 1992 Act. Because according to that law it does not allow changes to the environment, but the RFD, which has earned a Bt4 million contribution from Fox, has used tourism promotion for allowing the company the right to make environmental changes. (From The Nation, May 1, 1999 'Krabi authorities set to sue RFD chief,)

Chapter 7 Thailand Water Case Studies

Introduction

In this chapter we turn to examine the research findings of some case studies drawn from different regions of Thailand. This research undertaken in writing the thesis is the first of its kind undertaken in Thailand. The research findings challenge a common assumption that underpins most environmental law in Thailand, namely that the environment is amenable to enforceable legal controls and regulations. This assumption has been tested in the case studies to find out how the 1992 Act operates in Thailand. As will be shown, it is clear from the case studies that in reality the situation is more complex. Environmental law may set standards and provide environmental protection, however, it is doubtful if environmental law can deliver implementation strategies unless the problems of culture, economic status and locality are addressed. These case studies, show how set against the background of sophisticated environmental laws, ordinary Thai people have to struggle against vast and complex administrative systems and complex rules. In that context modern environmental laws face considerable challenges. These case studies show that hardly ever do the Thai people resort to legal redress in the Courts.

The Strengths and Weaknesses of the Case Study Methodology

At the outset it is important to recognise the strengths and weaknesses of a case study methodology. There are inherent and obvious dangers in adopting a case study approach. The case studies, may not represent the whole population of Thailand. They may be typical of environment and problems in Thailand. A random selection example may distort the reality of what is happening. The case studies may simply reinforce the prejudices of the researcher. It must be accepted that there are some limitations in using a case study approach. The case study method does not provide a wide basis for statistical

analysis of cases. The findings may therefore be unrepresentative of a larger population. Set against these problems there are many advantages to be gained from the case study approach. . It allows the researcher to find out practical working procedures and processes. The case studies test the effectiveness of legal enforcement. Lessons from the case studies may be used by other researches to examine working assumptions about environmental law. Despite these potential shortcomings, it is hoped that the present study will set the foundations for future studies or research in this area.

The case studies point to some general conclusions. Although the analysis are tentative ones they may provide the basis for further research for the future.

Finally it is important to note the context of the case studies. The case studies draw together different aspects of conflict resolution in Thailand and focus on planning law, water pollution law, the 1992 Environmental Act, private rights and public duties, local and central government. In that context, water resources are examined not in any systematic way but as a reflection of the different cultures in Thailand. It is shown that the traditional resolution of water resource problems in Thailand does not involve litigation in the Courts. This leaves the resolution of disputes to depend on informal means invariably involving local custom. Dispute settlement of this variety has not been given the attention it deserves. Clearly the case studies undertaken for the thesis indicate the need for future research in this area.

Overview of the Case Studies

The case studies are all about water problems undertaken in three different regions of Thailand namely; the upper northern region, the central region and the north-eastern region. The case studies from the different regions identify a number of environmental problems connected with water resources in Thailand. There are three categories of

problem: First, the problem of large Dam projects and canal systems in the upper northern region which significantly contribute to water scarcity and are the cause of water shortages. Secondly, water shortages in the central region play a major role in water problems of allocation. Finally, water pollution found in the north-eastern region caused by rapid industrial growth and the development of advanced of technology causes major pollution problems. Each may be exercised in the following:

I. Dam Projects and Canal System

Background and context

The problem of Dam projects constituted in the upper northern part of Thailand.[1]The four examples in the case studies are drawn from upper Northern Thailand addressing the conflicting requirements for water resources in Chiang Mai Province. The events took place in 1993-1994 at Saraphi District, Doisaket, Mae Taeng District, and Chom Thong District. The Northern region is the country's largest territory occupying 169,464 sq.km or 33 percent of the total area of Thailand. In general, it has an abundant water supply due to large forests and adequate rainfall. During the past three decades, the state's major water development projects including the Bhumibol and Sirikit Dams(The King and Queen Dams) were constructed to provide water supply for the main rice growing area of the central plains. The construction of six major dams namely Bhumipol, Sirikit, Khaolaem, Ubonrat and Sirindhorn have led to the submergence of land and forest totalling 2,052 sq.km equivalent to the territory of Bangkok and Nontaburi Province combined as well with the evacuation of over 12,000 families.[2] It is clear that the needs for ecological protection and demands for energy are difficult to reconcile in developing the dam projects in Thailand.

Since the upper northern region is predominantly a mountainous area and the agricultural area is small, the average farmer occupies a small piece of land compared to other regions with higher farming land diversity. In 1990, 30 percent of farmers in the North had land problems. About 200,000 households are landless and 220,000 households do not have a large enough piece of land for production. At the present, there are over 3,600 villages which make a living in reserved forests comprising 30 percent of all villages which have a problem with land ownership.[3] The Dam projects are the government's response in an attempt to solve the problems of water scarcity.

Water scarcity has become more severe over the past decades. In 1993, the Director of the Bhumibol dam announced that in 1994 the amount of water available would be 1,200 million cubic metres or 12.45 percent of the reserve amount, the lowest in the past 30 years since the dam started operation in 1964. Severe drought problems were predicted that would affect many parts of the country. Thus Thailand faces a crisis to overcome one of its most plentiful resources.

Public reaction to the problems of natural resources have varied. Every year hundreds of thousands of people leave for urban areas to seek employment. During the hot season of 1994, for example 1.78 million of people in rural areas left their villages for work in the towns and approximately 1 million people in rural area will migrate to major cities. Due to the economic crisis in 1997, many people that remain will continue to do their agricultural work rather than go to work in the cities. Many more return because they cannot find jobs or employment. This raises the question of the unpredictable nature of the need for water resources at any period in one time. A further complication is the

[1] T. Charoenmuang, 'The Governance of Water Allocation Problems in Thailand', in TDRI, Water Conflict (Bangkok, TDRI, 1994), at 111-140.
[2] "Who gains and who loses from dam construction?" Bangkok Business, December 2, 1993 p. 2.
[3] The Statistics Report of the Northern Region Development Centre, 1995.

link between the needs of agriculture and industry. Remedying the problems of different users is difficult in terms of predicting need.

The Saraphi District Case Study

The first example in a case study taken from the Sarephi District. This is mainly an agricultural area. Saraphi District is the smallest in Chiang Mai Province and is the only district which is entirely in the lowlands. Therefore, unlike other bigger and more mountainous districts almost every part of Saraphi is suitable for agricultural production. In this regard, Saraphi has always been an important agricultural area for Chiang Mai. However, with the rapid growth of Chiang Mai city and of the non-agricultural sector in the past decade Saraphi has become a major suburban area with increasingly varied forms of economic activities. It is the location of this district close to the urban area which allows for such diversity. The district office is only 14 Km downtown from Chiang Mai and 20 Km from downtown Lamphun[4] which is an adjacent province to Chiang Mai. Saraphi is also very close to the Lamphun Industrial Estate where many jobs are available.

The agricultural economy found in the Saraphi District consists of major crops including rice, garlic, soybean, peanuts, cabbage and longan.[5]Water for agriculture comes from three major canals, Phya Kham Canal, Nong Phung Canal and Tha Wangtan Canal. Phya Kahm Canal built around 100 years ago is the largest of all providing water to almost 30,000 rai[6]. It is 17 Km long beginning at Tha Sala sub-district runing through seven sub-districts in three districts and ending at Umong sub-district, Lamphun province.

[4] Department of Local Administration, Data on Area and Districts , Ministry of Interior, Bangkok, 1988.
[5] Longan or lungan is traditional and a typical fruit of the tropical weather in Thailand. It tasts very sweet.
[6] 6.5 rai = I hectare

There are four examples of conflict over water resources: 1) between farmers and city people, 2) between farmers at upper part of the Canal and the lower, 3) among the villagers themselves and 4) between local farmers and recently settled businessmen. The case study illustrates the difficulties mentioned above to reconcile different user groups.

The first example of conflict over water resources between farmers and city people began in March 1993 when Chiang Mai Municipal was constructing the Khua Lek Bridge 500 metres south of Naowarat Bridge. In doing so, some parts of the construction blocked the flow of Mae Ping River and resulted in a water shortage in the Phya Kham Canal which in turn affected agricultural production during the hot season that year. Led by a councillor the farmers from Saraphi gathered and went to call on the Chiang Mai Governor to end the blockade.

The conflict was quickly resolved for three reasons. The first was that the blockade had an obvious impact upon farmers south of the city. The gathering of Saraphi farmers was reported widely and evidently the damage to many farmers was caused by a decision made by a few people in the city. The second was that the construction of Khua Lek Bridge was strongly opposed by the opposition party of the Municipal Council and some newspapers because the bridge site was located near the department store owned by the Mayor of Chiang Mai. The third was that the protesting farmers were too strongly supported and led by a high-ranking councillor.

The second example of conflict, was between water users of the upper part of the canal and those of the lower part. This conflict had existed for many years. Before the water from Phya Kham Canal reaches Saraphi sub-district, it runs through five sub-districts where soybeans, cabbages, garlic, longan and other kinds of vegetable are grown. Since those crops consume a large amount of water, the allocation of a limited

amount of water has become a major problem. Water had been stolen in the upper part of the canal. Therefore there was little water left for the lower part of the Canal. Several methods of stealing water have been observed. First, more pieces of wood than allowed by the Canal Rules were used to block the water-flow. According to the Canal Rules, a specific number of pieces of wood maybe placed in the water to obtain water but allowing some water to flow to the lower part. Second, garbage, leaves and weeds have been piled up in order to block the water-flow this has been called the 'Garbage Canal' or Leaves Canal'. The first two tactics are obviously temporary and the waste or extra wood can be removed at anytime. Some water thieves, however, adopt a more permanent measure namely several electricity concrete posts have been erected to block water-flow. Such tactics severely disrupt the natural flow of water.

Farmers in the lower part have reacted to this problem in different ways. Some have chosen to stop planting anything in the hot season and sought employment in the non-agricultural sector mostly in the cities. Some have chosen to start growing longans which require less water and /or use water pumps to pump up groundwater. Sometimes farmers who continued to plant in the dry season gathered and marched up to inspect the upper part of the Canal. In most cases, the farmers would adopt a short-term solution removing pieces of wood or other types of waste that blocked water-flow to the lower part. Some groups of farmers would go to the other village where water was stolen and ask that the blockades be removed. In some cases, both sides failed to agree and the disputes ended with a fight. In the summer of 1993, fighting between farmers of Saraphi sub-district and Nongfaek was reported and the police had to come to settle the conflict.

In the meantime, many villagers simply forgot that they belonged to the Canal Organisation. Not only had they given up farming in the hot season, they neither attended

meetings of the organisation nor cared to talk to the leaders about the water problems. Although they wanted some water from the Canal, they would not do anything to make the Canal organisation function.

According to Uraivan (1984)[7], in her study, she found that the canal organisations were able to adjust themselves both at lowland and highland levels amidst social changes. That was because such an organisation especially the one at lowland levels was able to respond to the demands of farmers and was well accepted by its members. In many cases, it was able to stay away from state control whereas the local management systems of the other type were put under state control. The author concluded that compromise, respect for rights and rules and equal allocation of duties and resources by the canal members were keys to the success of the canal organisations. In other words, a form of voluntary arbitration applied. But today, it seems the legacy of the traditional canal organisations has already broken-down because of the rapid economic growth and the expansion of the city.

The third example of conflict is among the villagers themselves and is the problem of the build up of mud and other waste in the Ban Chang Kerng and Ban Pakgong areas at the lower end of the canal. In general, with the co-operation of villagers the canal is cleaned every year. But since the Phya Kham Canal organisation has not been fully operational for over twenty years, the cleaning of the canal has been occasional. Few leaders or groups of farmers wanted to shoulder the task and leadership in the organisation has been weak. According to one person, villagers demanded water from the canal head but they refused to co-operate in cleaning the canal. They wanted to have

[7] U. Tankimyong, Social Organisations in Canal Irrigation System: A Comparative Study of Highland and Lowland Communities in Northern Thailand, (Chiang Mai, Chiang Mai University Press, 1984), pp.8-12.

water but they just complained. No one wanted to take any action. Now, some villagers don't even know where the canal is.

Finally, the fourth example illustrates the type of conflict between farmers and businessmen. Due to the rapid urbanisation of Chiang Mai City, change of land ownership in the past five to six years has greatly affected suburban areas including Saraphi District. The problems occurred when non-farmers came to the area and started using water from the canal, paying no attention to the rules set by the canal organisation. For instance, a retired government official came to buy a piece of land in sub-district Nongphung grew longan fruits and blocked the canal in order to use water for his own crops. He became furious when a member of the canal organisation asked him to remove the blockade. The dispute was then resolved after leaders of the canal organisation came to talk to him and explained how villagers have shared the water from the canal and the rules set by the canal organisation. Another incident involved the Seagull Restaurant at Sub-district Nonghoi who erected a building blocking the waterway of the Phya Kham Canal. Hundreds of villagers appointed representatives to talk to the restaurant management several times but nothing was accomplished. Later, they marched to the District office and complained about the damage. The district officer said he could not do anything but had to report to the higher-ranking officer. Finally, the restaurant removed the building. The dispute lasted for several years before the restaurant management yielded to the demand.

It is possible that such incidents are not common, and that there will be more incidents like this, they may or may not have known about the specific regulations concerning water allocation or did not care much about them. Failure to appreciate regulations or uphold the law is a serious problem in Thailand. However, the problems of these cases indicate the limitations of the regulatory framework and its enforcement for water use in these areas. Can one imagine how much trouble would occur if more outsiders came to these villages? These examples and many others, illustrate the problem of weak property rights in the face of intrusion by outsiders. The canal organisation system has not been able to handle problems and the rapid number of outsiders. The traditional methods of water allocation seem unable to respond to the new demands placed upon the allocation system. It has neither the political nor legal power to confront intruders nor has it the flexibility to adapt and include new users with different demands and water needs.

It is possible to conclude that the four examples of conflict serve to emphasise that an important traditional practice, the muang faai irrigation system (canal system or organisation) has difficulty responding to change. The fundamental principle of water rights under muang faai is that everyone in the system must get enough to survive. These systems have been used for the past 700 to 1,000 years and typically consist of a small reservoir which feeds an intricate branching network of small canals carrying water in carefully calibrated quantities through clusters of rice terraces in valley bottoms. Moreover, it is also a lack of understanding of sustainable development principles such as public participation (in case of *Farmers vs. Businessman*), planning disputes, private rights, public duties etc.

The Doisaket District Case Study

We now turn to some examples that come under our second case studies in the Doisaket District. This case study mainly involves directly with the Dam projects (The Mae Kuang Dam). Doisaket District is 16 Km east of Chiang Mai City. To its east lies the Phi Pan Nam Mountain Range in which the headwaters of the Mae Kuang River are located. The Phi Pan Nam Mountain Range separates Chaing Mai and Chaing Rai Provinces. In 1954, the Pa Taek Canal project was completed to control yearly flooding and to provide irrigation to land in the Sansai, Doisaket and Sankampaeng Districts. In 1976, the Mae Kuang Dam Project was initiated. It was designed to cover 175, 000 rai of land in the four districts providing water for agricultural production, household consumption, industry (Lumphun Industrial Estate) and power generation. The construction was completed in 1991.

By the time the Mae Kuang Dam was completed in 1991 the country was facing severe water shortages. That year marked the initiation of the programme[8] to restrict agricultural production during the hot season. The ongoing water shortage problem has necessitated the continuation of the programme every year since. According to officials at the Dam, the water shortage problem arises from at least two factors: first and most important is the destruction of forests in the headwater areas, second is the use of water by villagers who live above the dam areas. In the past five or six years, the water shortage problem has resulted in two conflicts between villagers and the Royal Irrigation Department(RID) officer and the among villagers themselves.

The first example of conflict under this case study involved framers who planted different crops which required different amounts of water and at different times. After the

campaign was launched to restrict production during the hot season, the RID officer set up a special committee consisting of the district chief, RID officer, a member of the canal organisation, and farmers etc. This committee was to determine what kind of and how many crops should be planted in each hot season and also the timetable for water sharing. In practice, however, farmers rarely followed the plans and neither the committee nor any other agency has done anything about it. During each hot season, although farmers in general agreed to limit their production areas, they planted crops at their own discretion or based on the advice of other people. Because different crops need water at different times, for example, red chilli needs water every seven days and soybeans need water every 15 days, conflicts occur every year over the irrigation work. A farmer who planted chilli living downstream from a farmer who planted soybeans may find that his water is cut off after the chilli farmers has received the seven days of water he needs.

The second example of conflict occurred among village water users, due to the limited amount of water from the Mae Kuang Dam over the past 4-5, hot seasons, the stealing of water by some farmers takes place every year. How ever, since most farmers are related or have been neighbours since they were young, they have been able to reach a peaceful solution. There are the other alternatives, either some farmers turned to using water pumps to find underground water or some decided against planting crops in the hot season and left for work in urban areas which is not easy during these period of economic crisis.

[8] The programme was to discourage farmers from planting a second rice crop because of rice's great demand for water and told to plant vegetables or other less water intensive crops.

The Mae Taeng District Case Study[9]

We now turn to the third case study. The construction of the Mae Taeng Irrigation Project began in 1963 and was completed a decade later. It was funded by the World Bank[10]. The project was launched in order to support agricultural production in five districts of Chiang Mai during the hot and rainy seasons and to provide water for the Waterworks Authority. The irrigation canal is 74.56 km long covering 174,000 rai and has 23 sub-canals. The project has assigned 15 zone-men to take care of water allocation into the sub-canals. The Mae Taeng Project is funded by the World Bank and the government runs it to replace the canal organisation system which was created and run by villagers for many centuries.

Thirty to forty years ago the headquarter area and the Mae Taeng forests were full of large trees and the water level in each river was always high. In the past two to three decades, however, forest destruction has been widespread and there have been more people living above the headquarter areas, particularly those working for Royal Projects in the mountains. This resulted in a decreased amount of downstream water in hot seasons and excessive water flow during and after each rainfall. The length of canal and limited water supply during the hot season have caused tensions between villagers in the lower part of the canal and those in the upper part. Lower canal villagers have accused upper canal villagers of stealing the water allocation. Occasionally, the water supply did not to need be diverted to the lower canal areas because of the poor performance of Irrigation officers. Some villagers have attempted to monitor the water supply flow personally by going to the Irrigation Project headquarters whenever they were scheduled

[9] T. Charoenmuang, op cit ., pp. 129-132.
[10] The total cost was about 300 million Baht. It was partly (50%) funded by the World Bank as one of development projects for developing country.

to receive water. Others have resorted to using water pumps or to abandoning the village and going to the city to find work.

Because of the growing urbanisation in Chiang Mai, in March 1994 the survey found that the urban areas which draw water from the Project consists not only of the Waterworks Authority but also households and private firms such as hotels, restaurants, real estate projects etc. Most of which are located along the canal bank. The main purpose of the Mae Taeng Canal Project was to provide water for agricultural production. Villagers urged city dwellers and government agencies to economise on water consumption.

As mentioned above, the necessity for dam building to meet the needs for ecological protection and energy is addressed. The argument was that the dams were a very good source and efficient generator of renewable energy for agricultural needs. This case study showed that the bulk of the water generated did not go to rural areas or to the uprooted populations. This was most evident in the Mae Taeng Dictrict case where the water shortages occurred, demands from the residents and industries were granted priority over the needs of agriculture in the ensuing crisis. And farmers were told by the RID to desist from planting second or third rice crops and to raises vegetables or other less water intensive crops instead. Moreover, there was no EIA(Environmental Impact Assessment)[11] at all before the dams were built in these case studies, which caused serious problems such as sedimentation, long term social impacts on riverside villages, the decline of animal and plant bio-diversity, ecological destruction etc.

[11] As a result of many protests against the plan to build new dams, in 1997 an ad hoc committee was appointed to settle the dispute and review the initial EIA. The RID is conducting three EIAs on geology, ecology and resettlement for appraisal by the NEB to construct the new dams. See 'Protestors hail go slow on dam plans', Bangkok Post, 30 July 1997, p. 1.

The Chom Thong District Case Study[12]

Finally, our fourth case study is taken from the Chom Thong District. Chom Thong District is the third largest district of Chiang Mai in terms of population. The district office is 58 km south of the Chiang Mai. Many decades ago when the planting and sale of opium was legal, the tribesmen called 'Hmong' who lived comfortably in the highlands grew and produced opium crops. Features of the opium crop were high sale prices, little consumption of water, no use of chemicals and a small planting area. Since opium became illegal in the early 1960s, Hmong people have gradually switched to the production of cabbage. These new crops required a great deal of water, a bigger planting area and a large amount of chemicals.

By 1985, the lowland areas under the highland (Hmong people) were clearly affected by the cabbage crops on the mountain areas. The river began to dry up completely in April, the last and the hottest month of the dry season. In the next three years, farmers in the lowland area could not grow crops in the hot season because of insufficient water supply and the pollution of water, an unprecedented event in the history of the village. The lowland people launched a campaign to relocate the Hmong people from their mountain areas and started to threaten them by blocking the road. There were many incidents involving the use of force and more violent incidents occurred.

The case study above illustrates the water conflict between two groups of people regarding water shortages and pollution. The government report addressed the question of the necessity for dam building and an irrigation canal to solve the water problems in these areas. This case study showed water conflict based on different type of water users and their interests.

[12] T. Charoenmuang, op cit.., pp. 133-134.

II. Water shortage

Water shortages taken from the central region case studies[13]focus primarily on allocation conflicts during the 1994 dry season, which resulted from the severe water shortages of that year. The following provide a summary of the case materials in the central region. There are similarities between the northern region addressed above and the cases from the central region.

Upstream-Downstream Conflicts in the Central Region Case Study

The first case study, in Tambon Chakri, Singburi province[14]provided a story similar to the upstream-downstream conflicts among irrigators recorded in Chiang Mai. A conflict emerged when upstream farmers blocked a dirt-lined canal to divert water to their fields thus depleting the flow downstream. The conflict was settled by the intervention of a village headman though legally this should have been the task of irrigation officials since the conflict occurred within an Irrigation project. According to Pongsudhirak (1994), who noted how both irrigation officials and farmers did not follow the letter of the law simply because the canals were not lined with the concrete. Had they been lined with concrete, the irrigation officials would have taken more time and care to intervene in the dispute and legal action would perhaps have been brought against the violators upstream since they would have been tampering with government property. Although they were still tampering with irrigation facilities in this case, irrigation officials refrained from involvement and it was left to the local headman to negotiate an informal compromise. An important footnote to draw from this case is the lax enforcement of existing laws.

Groundwater Depletion Case Study

In the second example of case study[15] this involved an implicit conflict, namely a conflict for underground water consumption in the central plain. As water supplies in the irrigation canals dwindled in 1994, farmers did not hesitate in growing rice in part because they were encouraged by government subsidies to continue planting paddy. Water shortages led many farmers to deplete ground water wells to flood their fields. Because the Groundwater Act of 1977 does not apply to areas outside the Bangkok metropolitan area, farmers were free to deplete water resources at their own discretion. Although, this case did not involve a conflict among water users or any immediate environmental damage, it is clear that a more comprehensive legal framework is needed since continued groundwater pumping is likely to be increased if water supplies in the central region continue to decline. But the problem of weak enforcement still remained. Farmers are increasingly alarmed because more and more of their wells are drying up and they must dig deeper and deeper to find a steady supply of groundwater. In addition, farmers have to pay more and more money to dig deeper at high prices (around 600 pounds per well). It was clear that only the rich farmers could afford the cost of digging wells. In most cases it was not guaranteed that after digging, the water supply found would be adequate. Even when water is discovered, the water could run dry within 2-3 days. More and more farmers were planting a rice crop as advised by the government officials and many of these were employing groundwater pumps. Unlike the past, open access to groundwater is facing mounting difficulties. For the first time, a growing number of farmers have realised that their wells are running dry precisely because too

[13] T. Pongsudhirak, 'Water Allocation Conflicted in Central, Thailand' in TDRI, Water Conflict (Bangkok, TDRI, 1994), at 239-258.
[14] T. Pongsudhirak, opcit., pp.249-258.
[15] T. Pongsudhirak, at 253-258.

many of their peers are doing the same thing they are doing tapping the same underground reservoirs.

To conclude, the case studies provide examples of how open access to a water resource is appropriated by the powerful and the rich when it becomes scarce. In this case, water is available only to those with money to dig deep wells. In the shift from an agricultural to an industrial based economy, the losers are the poor who do not money nor land nor the social status to survive in the competition for this precious water resource.

The above case studies from the northern and central region highlight problems with the water allocation regime. The disputes, especially those between farmers and non-farmers indicate systemic lack of authority over water rights and water access which is the legacy of the breakdown in the traditional canal organisation and a vacuum in the legal and administrative framework supporting individual and communal rights to water. Moreover, it is also a lack of understanding of sustainable development principles, the recognition of the need to balance economic development and environmental quality. Thailand's phenomenal economic growth over the past two decades has been industrially based forcing a shift away from the agricultural sector. Government policies have encouraged and favoured industry at the expense of agriculture creating large disparities between rural and urban incomes. More and more farmers will enter the industrial workforce. Farmland will convert to urban or suburban or will become more concentrated in larger plots as small-scale farming becomes less viable. The system of water allocation in the north and central Thailand is chaotic. With the traditional system breaking down and a lack of government intervention taking place, people are left to take matters into

their own hands. Thailand's water policy, law and management regimes are currently in disarray and in need of reform.

In recent years, it seemed that water allocation problems occur during almost every dry season. Since the water supply could not keep pace with demand which had been attributed to a number of factors: population growth, economic development, deforestation, meagre rainfall and improper management of water resources including a lack of understanding of sustainable development. Problems typically arose between upstream and downstream water users such as agriculture and from different sectors. When water allocation conflicts occur, a question is often asked whether the existing laws or legal mechanism are able to solve the conflicts.

The current laws concerning water allocation are not able to cope effectively with the existing water allocation conflicts. The crux of the problem is that water rights are unclear. All persons are entitled to use water in the watercourses for common use but the question of how much water can be used is not clearly defined. This is why some golf courses or other upstream water users are able to withdraw water for their own purpose quite freely. The Civil and Commercial Code 1956 has provisions defining the right to use surface water of the riparian landowner and the right to retain water passing through higher land by its owner but the relevant legal principles are still vague and consequently in favour of the upstream wealthy landowner.

When an irrigated area is considered, the concept of water rights is still ambiguous but the water allocation problems in theory should not have arisen since the use of water from an irrigation Watercourse is subject to the control of the Royal Irrigation Department. In practice some watercourses are illegally blocked to divert water or the

officials unfairly allocate the water. This problem of law enforcement should be handled by increasing the role of people particularly water users in the law enforcement process.

III. Water Pollution

Two examples of the case studies will be addressed as follows, the deterioration of water quality in the Nam Siew river basin due to rock salt mining, the effects of factory discharges into the Nam Pong river basin. All the cases studies show the lack of legal clarity regarding who caused the pollution, the lack of a sufficient information base on the part of the relevant government agencies, law enforcement officials, lack of knowledge of sustainable development and political influence in the form of lobbying and bribery all helped raise the level in each case. Each case also illustrates the conflict between economic growth and environmental protection. In the enforcement of the law, the cases address the problem of overlapping authority between the Ministry of Industry and the Ministry of Interior. In each case water quality continued to decline as no effective pollution abatement measures were taken. The Government failed to provide effective resolution of the conflicts at hand. Each conflict was driven into the political arena and thereby forced upon national level politicians who because of the many and powerful interests involved in each case, were often reluctant to take effective action.

Rock Salt Mining in the Nam Siew Basin Case Study

The first case study is taken from Nam Siew Basin. The case is concerned mainly with water pollution problems. Nam Siaw Basin is in the Northeast of Thailand, generally known as Khorat Plateau that covers approximately 16.3 million hectares or 33% of the country. Within the Plateau lie two basins Khorat Basin in the west and south and Sakon Nakhon Basin in the Northeast that is divided by the Phu Phan Mountain Range. A large part of this area is underlain by rock salt beds with an average depth of 200-400 meters

this area was once under the sea. The uplift of the Phu Phan Mountain Range and other factors distorted some parts of rock salt to form dome shapes near the ground at a depth of less than 100 meters. The large amount of rock salt reserves causes a soil salinity problem in some areas.

Since the early 1970s rising prices of rock salt had stimulated more intensive rock salt mining in that area. The mining generated negative externalities in the form of saline leakage into the water stream. Rock salt mining around the Nong Bor area at the Nam Siew Basin caused, due to the discharge of wastewater from salt pans, flooding in the wet season, as follows[16]; 1. Water from the Nam Siew River is no longer fit for human and animal consumption or agriculture use because salinity is too high. 2. The ecological system of Nam Siaw particularly fish is totally destroyed. 3. The area of salt-affected soil became larger than agricultural areas. 4. Rice production declined because saline water or soil caused rice to be unusually transparent and thin. 5. The land subsided because of over extraction of underground rock salt. 6. The forest surrounding the area was destroyed because trees were used as firewood for producing salt. 7. This caused labour migration from one sector to another and from one place to another. Rock salt mining caused conflict between the miners and other water users especially rice farmers for at least two decades.

The government appeared to show a slow response to the problem, it took them so long to issue the Prime Minister Order No.4/1980 and No.3/1989 to ban all the activities of rock salt mining. Despite the Prime Minister Order, Rock salt mining has continued to damage the natural environment of the province, especially in Ban Dung district, that has

[16] Environmental Geology Division, Department of Mineral Resources, Impacts from Rock Salt Mining in the Nam Siaw Yai Basin, in Information for Solving Rock Salt Mining Problems in the Nam Siaw Yai Basin and the Northeast of Thailand of the Committee for considering Resolutions for Environmental Quality Problems in the Nam Siaw Yai Basin, 2, 1990.

been a major mining location for more than 27 years. The farmers tried to put political pressure through demonstrations and the media upon relevant committees and the legislative bodies considering legalisation of rock salt mining. As a result, a compromise was reached that rock salt mining could be carried out under the law outside the Nam Siaw Basin. The main reason of this response is to the demands of poor people who earned their living as rock salt miners for many generations. It was the conflict over the environmental damage to the Nam Siew River caused by rock salt farming in Maha Sarakham several years ago that helped turn Ban Dung into a major salt production centre in the Northeast. Salt miners and investors in Maha Sarakham subsequently moved their production bases to Ban Dung, which is also rich in salt deposits. Businesses went well with some 330 million baht being turned over in the market annually.

There are now about 5,000 salt farmers in Ban Dung[17], producing a total of over 300,000 tons of rock salt per year. Salt-related businesses also employ about 30,000 other people. But Ban Dung's wealth has come at the expense of the precious local environment. Salt water released by the farms caused salinity to the public water sources, making the water unusable for crop growing. Trees have also been cut down for firewood to boil salty underground water as part of the production process, while pumping up underground water has caused land subsidence.

The situation has been compounded by the fact that legal controls on rock salt production at Ban Dung have been lax. A number of farmers violate the law by operating without licences and boiling salty water near public waterways, while the relevant officials rarely take legal action against them.

[17] http//www.bangkokpostnet.or.th (Bangkokpost Newpaper, July 27, 1997. 'The source of life is poisoned', access to the Internet on January 6, 1999.)

The Nam Siaw water use conflict demonstrated the failure of law enforcement. This case was a good example of economic growth and development at the expense of the environment and that environmental degradation should not be encouraged. What would have happened if such a conflict had been brought into the court? Would the legal remedy be able to prevent, mitigate or even stop the environmental damage from rock salt mining? In response to these issues, two types of legal remedy will be used as a basis of discussion; a criminal action and civil action.

First, a criminal action, it could be brought into court to punish an offender and to deter other people from committing the same offence. A public prosecutor or any private person who is regarded by law as an "injured person" could initiate it. In the Nam Siaw case, it is nevertheless questionable whether rock salt miners could be prosecuted for extracting brine or rock salt and polluting the river. Before 1990 when the damage from the mining reached its peak, there was no law specifically covering all kinds of activities for extracting rock salt and brine from underground. The Mineral Act 1967 at that time applied only to the *mining of rock salt* not pumping underground brine to produce salt. The question about the damage caused by a miner would be very difficult or impossible to find any law[18] at that time or even now, applicable to the case. Since it could be interpreted in the Thai legal system that the damage had been caused by force majeure or an Act of God[19]. Another explanation might be in proving in court the guilt of the miners since the accused would be found guilty only when he violated those laws *intentionally* which would of course be very difficult.

[18] For example, the Thai Waters Act 1913, the Royal Irrigation Act 1942, the Fishery Act 1947 and the Factory Act 1992. The problem includes the Royal Irrigation which would come into force only when pollutants were discharged into the so-called 'Irrigation Watercourse' and the Factory Act has no role to control salt mining in the Nam Siaw Basin since such activity has been banned by a Prime Minister Order.
[19] A. Wongbandit, opcit., pp. 178-179.

Secondly, in a civil case the question of causation or the linkage between cause and effect. This should not be confused with the concept of strict liability since they are separate issues. The strict liability concept does not require a plaintiff to prove fault on the part of the defendant but it certainly requires the plaintiff to prove linkage between cause (pollution) and effect (damage). In the Nam Siaw case, it was very difficult if not impossible for each injured rice farmer to prove that the decrease of yield from his rice field in a particular year had been caused by a particular rock salt miner. Because there were several miners upstream who discharged the same kind of waste. When carefully considered, this problem becomes even more complicated as salinity in the plaintiff's rice field could be caused naturally or artificially by other factors such as seepage of brine from rock salt there under or from other adjoining land. It was therefore a tremendous task to prove cause and effect by the plaintiff in this case, let alone the problem of chasing fugitive miners who secretly carried out their activities. Another weak point in the civil action is the so called 'transaction cost'. When considered as a whole, the damage caused by rock salt mining in the Basin was quite high since vast cultivated areas and a large number of rice farmers were affected by salt. But it seemed that the amount of damage sustained by each framer was relatively low. This fact could discourage the rice farmers from bring their claims for compensation into court as it would be really difficult to persuade all of them to launch a law suit together. And it would certainly cost a lot of money and time in organising them as well as collecting data before going to the court.

The Nam Siew case demonstrated the failure of the law enforcement mechanism since illegal rock salt mining had been widespread for several years despite the existence of the Prime Minister Order banning such activities. What were the causes of such a

failure? According to A. Wongbandit(1994)[20], his study found out the inadequacies of law enforcement was due to several factors as follows: (1) Some Cabinet Ministers(at that time) who were directly responsible for rock salt mining had vested interests in the salt industry. (2) Bribery among government officials and policemen of this province was so widespread that it crippled law enforcement. (3) The number of offenders was so large particularly during the night that the policemen or local officials could not handle them properly. (4) Penalties inflicted upon the offenders were too low to deter illegal rock salt mining and the ones who were prosecuted were only workers and not the owners of the saltpan.(5) Threats to the future career of officials were also used by the miners and their supporters. (6) The attitude of law enforcement officers toward government policy, most officials did not regard the miners, as criminals who had committed a crime, as some offenders were only wage earners.

To date, the problems of rock salt miners are still unsolved but there is a plan to set up an industrial estate[21] for rock salt producers. The so-called "Industrial Park" if established, this would produce the rock salt at an appropriate site with up-to-date technology resulting in the process becoming more environmentally friendly. The committee has finished surveying rock salt production, and designated areas where salt production could be legalised, and a list of salt farmers prepared for further registration. But, the farmers are worried about whether they will have to pay large amounts of money to move to the planned industrial estate.

[20] A. Wongbandit, 'Water Use Conflicts Management in the Northeast: Case Studied of Nam Siaw and Nam Pong', in Water Conflicts (Bangkok, TDRI, 1994) p. 188.
[21] Bangkok Post, Jan 5, 1997, 'Plan for salt farmers seen as boon' access to Internet on Jan 5, 1999, http//www.bangkokpost.net.

The Nam Pong River Basin Case Study

The second example of a case study is taken from Nam Pong River Basin.[22] It is focused on industrial wastewater pollution. The Nam Pong Basin is located in the Northeast of Thailand. It has its headwaters in the Phetchaboon Mountain Ranges west of the Khorat Plateau covering at least 4 provinces such as Phachaboon, Loei, Chaiyaphum and Khon Kaen. The Nampong River which is one of the main branches of Shee and Moon Rivers, is approximately 230 km long. Nampong is the main water supply for the people who live along this river farming mainly for rice with secondary crops during the dry season particularly soybean and green bean.

With the governmental policy about promoting industrial development, the government tried to move factories on a voluntary basis into other provinces from Bangkok by offering a variety of incentives and benefits[23]. With the hope that environmental degradation in and around Bangkok would be alleviated and at the same time the problem of distribution of income and migration of labour to Bangkok would be solved[24]. According to this policy, Khon Kaen is one of a few provinces selected by the government, as a centre for the development of the region in the Northeast. So far, there are more than 800 factories registered with the relevant authority. Many are located along the Nam Pong and surrounding areas. The main factories are Phonenix Pulp & Paper Factory, Mahasin Alcohol Distillery, Sugar Mill and M.D.F. Particle Board Factory.

On 13th March 1992, there was a fire at the factory, namely the MDF.Particle Board Factory which produced plywood from bagasse. They tried to extinguish the fire by using water from the Nampong River which was nearby the factory. Thereafter, water pollution started from this point and spread into the province and the water unit had to

[22] Bangkok Post, 15 September 1993.

stop distributing water to people on 18th march, 1992, the Governor ordered the release of water from the dam above the North of the city to discharge wastewater directly. But, this polluted water had already passed to the other cities and provinces along the Shee River and damaged the fisheries and other animals living in the river. The polluted water still passed 5 provinces and travelled an estimated 600 km. and finally it passed to the Moon River and in the end to the sea.

The result of the mass pollution of water approximately 30 km in length was devastating, and some species of fish in the Nam Pong were wiped out. It was reported to the Governor that at Konkern Province 30,000 kg. Of fish were killed at Mahasarakam Province 30,000 kg., Roiet Province 250,000 kg with the extinction of 38 species. , Yasotone and Ubun Province 21,500 kg.[25] This report did not include the other animals living in the river. It would take several years to restore the natural conditions of the Nam Pong, Chi and Mun rivers affected by the water pollution.

According to the investigation by the Department of Pollution Control[26], it was found that the real cause of the pollution, was the discharge of approximately 5,600 cubic metres of molasses from the Sugar Mill into the river, prior to the occurrence of the fire at the M.D.F. Particle Board Factory. The molasses leaking from storage tanks combined with wastewater from the Particle Board Factory were the major cause of the pollution. It took the government more than two weeks to close the Particle Board Factory for 30 days. For the Sugar Mill Factory, surprisingly it was not closed immediately, The Industrial Works Department(DIW) sent a letter requiring its molasses storage tanks to

[23] For example, less income tax, less regulations. See more detail at the Investment Promotion Act 1977.
[24] The Seventh National Economic and Social Development Plan 1992-1996, pp. 125-132.
[25] Chulalongkorn Environmental law Journal, "NGO and the Environmental law", Marikamarl, vol. 1, January, 1995
[26] Department of Pollution Control, Ministry of Science, Technology and Environment, Report of Polluted Water Situation in Nam Pong-Chi-Mun, 1992, pp.1-17.

be improved within 30 days to prevent leakage in the future. Later on, it was closed on 8 April 1992 for 180 days to improve its system[27]. Some sources said it was because the relatives of the former Director General of DIW were shareholders in the Sugar Mill[28].

Apart from the factory closure, the police investigated the incident and collected evidence for the public prosecutor to consider whether it was offence under the Fishery Act 1947. Later on, the case was dismissed because it was considered such an incident did not violate the criminal law[29]. With a view to civil action, the Provincial Waterworks Authority (PWA) launched a lawsuit against the Factory to ask for compensation of approximately 300 million baht for damages inflicted upon its water treatment[30].

On May 17, 1993, pollution in the Nam Pong river occurred again when a villager noticed that the tap water had a light brown colour in it. The Fishery Department reported that it was estimated some 3,800 kg. Of fish and other species were killed with the diminution of from 16 to 8 species[31]. The academics from Khon Kaen University went to see the site and took samples of water. They concluded that the discharge of large quantities of pollutants by the Phoenix Pulp & Paper Factory into the Huay Cote Swamp was the real cause of pollution[32]. The DIW ordered the factory to close for 30 days and it reopened in June of the same year[33].

By 1993, the authorities could not go on turning a blind eye when the Nam Pong river became so contaminated that an entire swathe of river ecology was destroyed. Phoenix Pulp & Paper had to spend a large amount of money to clean up the Nam Pong. Since

[27] Matichon daily newspaper, 31 December 1992.
[28] Siam Rat weekly magazine, No. 45, 1992.
[29] Matichon daily newspaper, 21 June 1993.
[30] Krungthep Business daily newspaper, 25 June 1993.
[31] P. Chalokpanrat, Summary of Impacts of Pollution upon Fishery in Nam Pong, Research and Development Institute, Khon Kaen University, 23 May 1994.
[32] Working Group for Solving Pollution Problems in Nam Pong, Khon Kaen Universsity, Summary Report of Study on Causes of Nam Pong Pollution between 20-21 May 1993, pp. 5-9.
[33] P. Chalokpanrat, opcit., pp. 35-36.

then, the company has been faced with the problem of how to dispose of its treated wastewater. Every year, rice field and orchard owners file complaints against the company for damaged crops. When Phoenix requested permission to open a second mill in 1994, the Office of Environmental Planning and Policy (OEPP) required an Environmental Impact Assessment (EIA), and set some conditions before giving it the go ahead. First, the pulp mill had to find some productive use for discharged water. Secondly, it had to sign an agreement that by July 1996, it will no longer discharge wastewater[34].

Due to pressures from various groups concerned about the consequences of using treated water, the Phoenix Pulp Company agreed and signed a contract for "zero wastewater discharge." However, the pulp still cannot meet the requirements set by the EIA. The company did come up with Project Green, using the mill's treated wastewater to irrigate eucalyptus plantations. However, studies at Maha Sarakham University show at least seven percent of the treated water irrigating the eucalyptus fields overflows to adjoining land. These areas show increasing salinity or pH levels, which in turn gives rise to concerns about the effect on Khon Kaen's ground water supply. Is it difficult to clean water that has been used to make pulp? No, only expensive. The Industrial Work Department (IWD) said it is very hard for Phoenix to meet EIA requirements if it does not invest more on water treatment technology. It is impossible to treat pulp-mill wastewater to the zero-pollution level if the factory continue using their present machinery. Meanwhile, at least two government offices said they were aware of Phoenix pulp mill's legal violations.

[34] Bangkok Post daily newspaper, September 29, 1996, access to Internet http//www.Bangkokpost.net on Jan 6, 1999.

The North-eastern Region Environmental Office (NREO) submitted a report to the Industry Work Department (IWD) and to the OEPP in Bangkok on September, 1996 stating that the plant's water discharge levels are high enough to constitute a clear violation of the law. No action has been taken. Phoenix says it has requested the Provincial Industrial Works Department to delay implementing this regulation so it has time to improve its water-treatment process. Meanwhile, the question remains; what exactly is the standard of cleanliness for wastewater from pulp and paper factories? Two different government agencies in Thailand implement two different regulations under two different standards. "We hold different laws from the Office of Environmental Planning and Policy. We therefore have different standards of water release from industrial plants," said the Director of the Khon Kaen Provincial Industry, a regional office of the Ministry of Industry[35]. The Director of the North-eastern Region Environmental Office (NREO) agrees that some of the regulations are different due to the scope of their work for example, the Biochemical Oxygen Demand (BOD) of the Environmental Office. The office says the BOD should be between 20 to 60 milligrams per litre. However, the IWD allows up to 100 milligrams per litre for water discharged by the pulp and paper industry. Why? The Director said the inconsistencies are due to the nature of the industry, which has more by-products than other industries. However, later on, the Director admits regulations were set to accommodate investors rather than to protect the ecology or the health of citizens. Environmentalists complain that the present standard of treating wastewater from pulp mills is not up to international standards. Some regulations are a bit flexible because of the fact that the government want to encourage the growth of business

[35] Bangkok Post daily newspaper, September 29, 1996. 'Water should be used in a wiser way'.

and investment. Is the Ministry of Industry going to prosecute the Phoenix pulp company for breaking the law?

To date[36], it was surprising when the Industry Minister ordered the temporary closure of one of Phoenix's two mills for poor handling of its wastewater. An even bigger surprise is in the offing if the word of an unnamed high-ranking ministry official is to be believed. In what appears to be a policy shift, the official says the ministry will begin to get tough with factories polluting the environment. Provincial industry officials will be instructed to include assessments of factories' environmental performances in addition to routine production-related information in their monthly reports. Any plant that is suspected of discharging excessive pollutants would face immediate inspection and possible closure. The new policy was aimed at dealing with polluting factories more decisively.

But it is too soon yet to celebrate even if the policy shift is true. In the world of Thai bureaucracy where inertia is a way of life, there is always resistance to change, particularly if it threatens vested interests. It is also an open secret that many industry officials and inspectors maintain a cosy relationship with the factories they regulate. Accusations against polluting factories are usually followed by complaints about industry officials' slow response. When action is taken, it is half-hearted and the resulting penalty no more than a slap on the wrist, hardly enough to induce a change of behaviour. The complaints are made not just by the affected public but also by environment officials frustrated with their lack of authority to deal fully with the industrial polluters. Phoenix is just one of innumerable examples of industry officials' dismal failure to weed out polluters. Some recent cases include the stench from petrochemical factories at Map

[36] Bangkok Post daily newspaper, July 24, 1998. 'Clip the wings of firms like Phoenix'.

Ta Phut Industrial Estate torturing nearby residents and school children, dust from rock mining throughout the country, and lead mines contaminating the stream at Thung Yai Naresuan Wildlife Sanctuary. In all these cases, industry officials act more like industry apologists than protectors of the public interest and the environment

Thailand's Traditional Approach towards Environmental Protection

Thailand's traditional approach to the environment has a number of unique and special characteristics.[37] Water case studies in different regions of Thailand face many challenges related to Thai traditional way of life to solve the problems. It is important to see the link between the environment and local knowledge. There are some aspects that may help to understand these challenges as following:

Buddhism, animism and local knowledge in Thailand

Environmentalism in Thailand uniquely concerns Buddhism, animism and local knowledge. Buddhism is the country's main religion, and many people still have animistic beliefs. Religious beliefs help promote aspects of sustainable development. The point here is not that Buddhism and animism offer a panacea for many present and future environmental challenges.[38] Rather, the idea is that these are largely neglected sources of Thai knowledge and tradition which may be successfully exposed to place primitives in developing Thailand's environmental protection efforts.

[37] See D. L. Tookey, 'Southeast Asian Environmentalism at its Crossroads: Learning Lessons from Thailand's Electic Approach to Environmental Law and Policy', Georgetown International Environmental Law Review, Vol 11, pp. 307-362.

[38] See K. Milton, Environmentalism and cultural Theory: Exploring the role of Anthropology in Environmental Discourse (1996), p. 109. The author attributes the creation of this to the following ideas: (1) the most ecologically sound ways of living are assumed to be those that conform most closely to what is seen as a natural existence (2) the image of primitive ecological wisdom comes about from a comparison with industrial practice, and is shaped by issues within industrial society; (3) the spotlight is directed towards some non-industrial societies more than others; (4) environmentalists tend to advocate a greater respect for the indigenous peoples of any region than for those inhabitants whose origins lie elsewhere and (5) environmentalist thought has focused more on the human inhabitants of some ecosystems than of others.

The use of local knowledge can help promote environmental protection. Local knowledge, or what one writer calls indigenous ideological bases for environmentalism can be found in traditional approaches to resource management such as the traditional irrigation systems of northern Thailand, muang-faai.(Canal system)[39] Other examples involve land classification systems for use and conservation, traditional medicines and traditional farming practices. These practices are discussed in more detail as follows:

Local Knowledge: Integrated Farming, Muang Faai Irrigation, and Traditional Medicine

Local knowledge includes the body of information unique to Thailand and known to both Thais and hill tribes. Traditional farming and irrigation methods, as well as traditional medicines exemplify how using local knowledge can promote environmental protection.

(A) Integrated/Traditional Farming

Traditional Thai farming practices are environmentally friendly, and declined after the government began promoting high-yield crop production, (and the use of fertilisers and pesticides) for export. After having unpleasant experiences with this type of agricultural production, villagers are now returning to traditional farming practices by digging ponds in their rice fields to raise fish and control insects, growing vegetables and herb gardens, planting fruit trees, and breeding pigs and chickens, which makes the villagers largely self-sufficient in food production. The use of integrated farming symbolises a renewal of traditional agricultural practices, and highlights the farmers' role in environmental protection in Thailand. As one Thai writer explains, the most crucial

[39] P. Hirsh, 'Environment and Environmentalism in Thailand: Material and Ideological Bases', in Seeing Forests Trees: environment and Environmentalism in Thailand (Bangkok, 1997), p. 15, 33.

principle of sustainable agriculture is that it must be rooted in the age-old knowledge and wisdom of the people.

(B) Muang Faai Irrigation(The Canal system)

An important traditional practice that promotes environmental protection is the muang faai irrigation system used in northern Thailand. These irrigation systems typically consist of a small reservoir that feeds an intricate, branching network of small canals carrying water in carefully calibrated quantities through clusters of rice terraces in valley bottoms. These systems have been used for the past 700 to 1000 years. In the mid-1980s 2000 muang faai systems were benefiting about 96,000 hectares in Chiang Mai province, and muang faai is probably still dominant in as much as 80 percent of agricultural areas, with the small remaining portion under irrigation by the state. Rituals and beliefs associated with muang faai reflect the villagers' submission to, respect for, and friendship with nature, rather than an attempt to master it. Muang faai is also influenced by animism, as the villagers believe that if certain boundaries are overstepped and nature is damaged the spirits will punish them. The fundamental principle of water rights under muang faai is that everyone in the system must get enough to survive. Challenges to this traditional practice have come from government-sanctioned logging, increased cultivation of cash crops on mountain slopes, and replacement of the traditional muang faai wooden water barriers with concrete structures.

(C)Traditional Medicine

Thailand has also had a long tradition of using its flora in traditional medicines. It has an abundance of flora consisting of forests of trees and plants complete with millions of species of fungi, insects and microbes.[40] As one of Thailand's leading researchers in the

[40] P. Mekloy, 'The Magic Forest', Bangkok Post , September 11, 1997, p. 1.

field of biodiversity states. Thai ancestors had a lot of knowledge about their natural surroundings, especially medicinal herbs and they knew which plants could do what. It should be noted that sadly this valuable local wisdom of past generations is being lost. The country's declining forest cover accelerates this decline in knowledge and practice of traditional medicine.

Thailand currently has 2,287 traditional medicine manufacturers and the country is currently considering a law to regulate the manufacture of traditional medicine.[41] Thailand is also considering adopting a Traditional Medical Wisdom Protection Bill, intended to protect traditional Thai medical wisdom once Thailand ratifies the Convention on Biological Diversity. In addition, Thailand's Eighth National Economic and Social Development Plan advocates reducing the use of modern drugs while making the most of herbal medicine and traditional remedies.

A Future Approach

Thailand has taken some modest steps that indicate that aspects of traditional ways of life may be incorporated incrementally into Thai environmental laws and policies in the future. As noted above, the use of local knowledge will not only be helpful, but also appears necessary if Thailand is to overcome its current environmental, financial and social problems. Community participation, transparency in government processes, and a balance in the use of natural resources will enhance Thailand's environmental law and policies.

Hopeful signs abound. Thailand's new Constitution includes a provision that recognises traditional communities and their rights to conserve or restore their customs, local intellect, and arts or good culture and to participate in the management and

maintenance of natural resources and the environment. Another provision guarantees individual participation in the preservation and use of natural resources.[42] This Constitution also mandates that the states patronises and protects Buddhism and other religions and encourages the application of religious principles to create virtue and develop the quality of life. Finally, the Constitution requires the state to encourage public participation in the preservation, maintenance and balanced exploitation of natural resources and biological diversity.

Thailand's current economic and social blueprint, the Eighth National Economic and Social Development Plan (the Eighth's Plan), also includes provisions which indicate that Buddhism, animism and local knowledge may have a place in Thailand's environmental protection efforts, and specifically in environmental laws and policies. The Plan's development guidelines state that learning and training processes should include integration between the international and Thai wisdom in the context of traditional culture and values, and in harmony with nature.[43] The Plan's summary recognises that traditional ways of life have been fading and states that the Plan will address such problems. To do so, the Plan's initiatives include developing local school curricula based on indigenous wisdom and the local environment encouraging the diffusion and study of local traditional wisdom, arts and culture. In order to foster stronger community and family cohesion emphasising cultural values in human and national development so that development is founded on self-sufficiency and indigenous wisdom revising and enforcing laws for regulating economic activity. So that they take greater account of its potential negative impact on individuals and on society, natural resources and the

[41] A. Bhatiasevi, 'FDA to introduce a New Drug: Traditional Remedies to be Under Control', Bangkok Post, August 23, 1997, p. 2.
[42] The Constitutional of Kingdom of Thailand, 1997, Chapter III, Article 46.

environment incorporating local wisdom into the conservation and rehabilitation of natural resources and the environment; promoting integrated farming and organic fertilisers; enacting the Community Forest Act and providing legal guarantees for local communities and small fisherman to participate in coastal resource management. And co-ordinating land use policy so that local ecosystem zones are demarcated to take into account any cultural and traditional diversity within the zones so that local people's existing lifestyles can contribute to the sustainable management of natural resources and the environment.[44]

Current and proposed laws or policies also indicate that traditional ways of life may be included in future laws and policies. For example, Thailand's National Forestry Policy discusses the promotion of community forestry projects and Thailand's Community Forest Act recognises the application of local knowledge to forest management. In addition, Thailand is considering adopting a Traditional Medical Wisdom Protection Bill to establish a framework to protect traditional Thai medical wisdom and is developing social impact assessment guidelines for use in the preparation of environmental impact assessment reports. Perhaps most significantly, there seems to be an emerging consensus throughout Thailand that the use of traditional ways of life can positively affect Thailand's environmental protection efforts. The traditional ways of life also play a role in the local communities' environmental protection efforts. Private individuals and Non Governmental Organisation (NGO) are increasingly active and interested in environmental matters. Government officials are learning more about environmental

[43] National Economic and Social Development Board, Development Guidelines of the Eighth Economic and Social Development and Social Development Plan (NESDP, Bangkok, 1997), p. 3.
[44] National Economic and Social Development Board, Chapter 4: Improving Natural Resources and Environments, (http://www.nesdb.go.th/plan8c/final6-4.html).

matters and working to improve institutions, laws and policies.[45]

Conclusions

It is possible to draw together the main conclusion for this chapter. From the analysis set out in the case studies it is clear that Thailand suffers from a number of systematic weaknesses. First, planning law is weak and difficult to enforce. Secondly is the lack of understanding and application of legal rules and the knowledge of the rules. Set against the first two themes, there is third theme "self-help" or adjusting outlines. The fourth is the local nature of many disputes. Fifth is the "unpredictable" nature of many disputes. The sixth theme is the difficulty of setting out legal principles or rules to apply to disputes. Seventh is a lack of planning and control over water resources. Eighth is lack of clarity in the law. The ninth theme is a lack of political will involving corruption at many different governmental official levels.

Modernisation strategies prompted by industrial growth inevitably lead to change in the use of law and legal regulation. Sustainable development is adopted from western advanced economic systems. In such examples in the west the disparity between rich and poor, industrial and agricultural, local and central is less than in Thailand. In Thailand, there is a sharp gap between the rich and the poor, and differences in the urban from the

[45] Interview conducted by Professor John McEldowney and the researcher with Nawarat Krairapanond, Environmental Officer in Natural Resources and Environmental Management Division, Office of Environmental Policy and Planning, Ministry of Science, Technology and Environment, in Bangkok, Thailand (March 26, 1998) (OEPP is working to improve central government's co-ordination with provinces on environmental matters and eradicate overlapping jurisdictions between ministries), with Nipaporn Watcharasin, Environmental Officer in Environmental Impact Evaluation Division, Office of Environmental Policy and Planning, Ministry of Science, Technology and Environment, in Bangkok, Thailand (EIAD is working to improve EIA regulations by including public participation provisions and social impact assessment provisions, and also to improve monitoring of projects once an environmental impact assessment has been approved), with Yuwaree In-na, Head of Agriculture/Wastewater Sub-Division, Water Quality Management Division, Pollution Control Department, Ministry of Science, Technology and Environment, in Bangkok, Thailand (Pollution Control Department is working to improve staff's technical skills, and to improve environmental infrastructure as shown by new wastewater treatment collective facility near Bangkok which uses a fee-operating system that charges businesses for wastewater treatment).

rural and the local from the central. There is also a sense that Thailand's planning system over water resources faces a crisis. There is a scarcity of water resources predicted with long-term problems identified in the design of suitable aqua systems. These having failed in Thailand's irrigation and planning system.

It will be readily appreciated that the water case studies on their own raise wider issues about the implementation and integration of the concept of sustainable development in the context of environmental protection in Thailand. Although not intended to be statistically representative of a wider category of water case studies in the same manner as quantitative research, such as a survey. The case studies presented in this chapter may be taken to provide some explanation of the practical working procedures and processes and thereby permit analysis of how theories and principles of sustainable development manifest themselves in a particular set of events. This chapter seeks to identify and analyse the nature of conflicts over water allocation and water pollution, how it is conceived and responded to by different groups, how it is resolved and the findings of these solutions. The case studies have shown how informal mechanisms and culture resolve water conflicts rather than formal or legal solutions or the use of the Courts. It is proved that the traditional cultural way of the Thai people still has a significant role in solving the problems regarding environmental issues. That is why the concepts and principles of sustainable development from western advanced economies or developed countries are not fully applied in practice when they are adopted and used by developing countries such as Thailand. The "mixed bag approach" involving cultural and local knowledge etc. to encounter the environmental issues has to be considered in Thailand.

Thailand not only sits geographically at the heart of Southeast Asia, it symbolises this region's approach to environmentalism in many ways. Like many Southeast Asian

countries, Thailand is caught in a crossroads between rapid development and its ancient traditions. Thai environmentalism has now begun to take significant steps towards a comprehensive assessment of its approach to environmental law and policy, considering what it may do to improve its efforts to eliminate pollution and advance conservation. To take productive steps, Thailand needs to evaluate its institutional and legal framework, as well as its place and contribution to regional and international environmental protection efforts. Current challenges concern enforcement, co-ordination between government agencies, finances, conservation and biodiversity, and environmental awareness.

Some unique aspects of Thai life may be used to improve these and other challenges to environmental protection in Thailand. The traditional ways of life have aspects which promote sustainable development, and which may be incorporated into Thai environmental laws and policies. Thailand's recent Community Forest Act, Buddhist activism, the mass of trees, and efforts to protect traditional medicines, traditional irrigation, and traditional farming practices are all examples where they provided a unique solution to environmental challenges in Thailand. Although there are no easy solutions to Thailand's current environmental problems, the traditional ways of life can offer guidance. As the modern world is beginning to overshadow all aspects of traditional Thai life, fewer and fewer people understand or study how those can promote sustainable development. Like much of Thailand's flora and fauna, traditional Thai values are heading towards extinction. The custodians of ancient knowledge, vast treasures of information and skills, must be preserved and utilised.

The environmental problems currently facing Thailand present serious constraints to future economic growth and sustainability. Immediate policy measures and actions are required to mitigate adverse environmental impacts and to rehabilitate degraded natural resources especially water resources, in order to avert the possibility of the future economic decline. Thailand is a country in the midst of dramatic changes; changes in the nature and quality of life of its people, in the structure of its communities and in the foundations of its economy. In the past, Thailand was a rural society in which local communities were dependent on the natural resources which surrounded them and the national economy relied on the export of a small number of native crops. The sustainable use of resources was a fundamental aspect of rural life; people understood the inter-relationships between the different components of their local environment and their activities were defined by the need to protect their surrounding resources.[46] Over the last two decades, Thailand has undergone considerable industrial development and urbanisation such that it is approaching the coveted Newly Industrialised Country status.

However, economic growth and industrial development have been achieved at the expense of the environment and the country's natural resources base. The challenge for Thailand therefore is to manage the changes taking place in the country in such a way that the well being of the people is enhanced without sacrificing the national, regional or global environment. The bulk of natural resources is now depleted or deteriorated and environmental problems have emerged. In the future, economic development will need to

[46] There are also various religious beliefs that exert significance on people's way of life. These beliefs are influenced by a knowledge of Buddhism, Hinduism (Brahmin), and animistic spirit. "Spirits" is a general term that includes the dead, ghosts, benevolent spirits and malevolent spirits. These spirits are believed to exist virtually everywhere: in forests, hills, water, trees, paddy fields, animals, the earth, etc. The spirits are to be respected and mistreating them can result in disaster. See P.Vityakon, The Traditional Trees-in-Paddy Fields Agro-ecosystem of Northeast Thailand: its Potential for Agro-forestry Development, (Hawaii, East-West Center, 1993), p. 9.

concentrate on improving and increasing efficiency in the use of the remaining natural resources for the greatest benefit. The conflict between utilising and conserving national resources must be contained in order to facilitate both further use and future conservation of the environment.

PART III SUSTAINABLE DEVELOPMENT THE WAY FORWARD?

In the previous chapter, Thailand's water resources and law have been examined in the context of rapid economic growth, industrialisation and environmental degradation. Thailand water case studies were presented and analysed in detail.

In addressing the problems of economic growth western countries have developed strategies that attempt to meet the competing demands of urbanisation, pollution and the protection of the environment. In 1987 the Bruntland Commission noted in *Our Common Future* how global economic development might be addressed by sustainable development. At its cutting edge, sustainable development questions whether non-renewable natural assets should be put in jeopardy by economic growth. In the case where national assets are in jeopardy growth should be prohibited to protect the environment.

In order to establish how Thailand's environment might be better protected it is important to consider how policies implementing sustainable development address the current environmental crisis in Thailand.

Chapter 8 Sustainable Development and Water Resources the Way Forward?

Introduction

Sustainable development was originally defined by the Brundtland Commission as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Economic Development, 1987).[1]This definition meets the needs of a developing country such as Thailand. The definition sets out the necessary policy required to achieve a balance between environment and development. The idea is to see economic growth in the form of continued growth and the context of sustained development that does not jeopardise the position of vulnerable people or deplete the future viability of the environment as a resources base. Thailand remains one of the fastest growing economies among developing countries. It has one of the worst records in protecting its environment. This is why the concept of sustainable development must address the needs of a developing country. Failure to implement sustainable development strategies is likely to result in serious environmental protection.

Since 1992 Thailand's environmental law has adopted principles of sustainable development as part of its modernisation programme. The 1992 Act has failed to secure the implementation of sustainable development. The question addressed in this chapter is whether sustainable development might yet hold the key to the issues raised in the case studies on Thailand?

[1] World Commission on Environment and Development, Our Common Future, (Oxford, Oxford University Press, 1987), pp. 1-23.

Sustainable development as a concept has been developed in Western countries where there are different legal cultures than in Thailand. Despite reservations about its application in developing countries the concept might form the basis for future economic development in Thailand. It is timely to consider the matter. Thailand is expected to stage an economic recovery in the year 2003.[2] Planning future economic prosperity means addressing problems posed by environmental law. The answer outlined below is that sustainable development has not been successfully executed at a local level and has therefore, not been fully effective in addressing to environmental problems.

The chapter is organised as follows. First an explanation of the concept of sustainable development, followed by how such principles are integrated into western society and law. It is necessary to understand the theoretical background of the concept and the principles of sustainable development both in the national and international context.

This chapter also draws on the UK experience and describes the principles of sustainable development and Agenda 21 in the UK[3]. It is important to understand how the UK has tackled the problems of economic growth and environmental protection. As D. Osborn (1992) noted "the UK was one of the first countries to industrialise and it has had a long experience of the problems of economic development, which can cause resources depletion, pollution, congestion and degradation of the urban and rural environment." Secondly, as a plan for sustainable development, Agenda 21 necessarily contains an operational definition of that term and provides the way to enhance the role of many groups in decision making for sustainable development. The concept of sustainable development includes Agenda 21 as a means of implementing sustainable development

[2] W. Bello, op cit., pp. 123-130.
[3] Please refer to p. 262 for more details about Agenda 21. See also, D. Osborn, 'Some Reflections on UK Environment Policy, 1970-1995', (1997) Journal of Environmental Law Vol. 9, No. 1, pp. 3-22.

policies. Agenda 21 places a focus on local needs and community action as part of a comprehensive approach to the environment for new century. The question arises as to whether the goal of established sustainable development is achieved through environmental law and regulation in Thailand. Does sustainable development meet the existing demand of developing countries such as Thailand?

The concept of sustainable development: its origins and development

(a) Definition and Origins

It is important to trace the historical origins of sustainable development. Sustainable development[4] has emerged during the late 1980s as an attempt to reconcile the apparent conflicts between environmental protection, economic development, and the quality of life. Its relevance at global, national and local levels is its value for setting the context for policy development and environmental law.[5]

The interpretation of sustainable development may be found in its adaptation in different countries. Most countries aspire to achieve economic development to secure rising standards of living both for themselves and for future generations. They also seek to protect and enhance their environment now and for their children. The debate on the environment is often presented in terms of a conflict between economic activity and the environment. This suggests that it might only be possible to pursue one at the expense of the other. However, this is mistaken. Economic activity and the state of the environment combine to impact on the quality of life[6]. Often economic investment and environmental protection or improvements go hand in hand. What matters is that all decisions potential

[4] B. Boer, 'Institutionalising Ecologically Sustainable Development: the Roles of National, State and Local Governments in Translating Grand Strategy into Action', in Willamette Law Review Vol. 31, 1995.
[5] A.M. Mannion and S.R. Bowlby (eds.), Environmental Issues in the 1990s, (Chichester, John Wiley & Sons, 1992), pp.21-35.
[6] Sustainable Development: The UK Strategy, Cm2426, HMSO, 1994.P.32.

throughout society are taken with proper regard to their environmental impact. Economic development does not give improvements in the day to day life of people, such as increased life expectancy, a higher percentage of literacy, an improvement in food production. But there are obvious signs to conclude that development, especially economic development may work against the ecological system. The mismanagement of development has led to environmental damage such as drought and flood. It is clear that the symptoms of environmental law are in evidence in the 1980s.Overuse of natural resources has among other things, brought about an increasing rate of deforestation and each year another six million hectares of productive dry-land turned into desert[7]. The evidence is there for all to see especially in Thailand. Rare plants and animal species are becoming extinct. The growth in the use of fossil fuel produces carbon dioxide, which may lead to global warming, and climate change. Other industrial gases threaten to deplete the planet's protective ozone shield. In the light of the growing awareness of the link between environmental stresses and patterns of economic development, the Commission of the 1987 report of the World Commission on Environment and Development (WCED)[8] called for a new approach in dealing with the environment and economic development. The concept of sustainable development was introduced and since then attempts have been made to reconcile the two objectives through 'sustainable development.' For most societies, one of the objectives is to achieve economic development to secure higher standards of living for present and future generations, the other is to protect and enhance their environment now for themselves and in the future. Economic development is sought by society, not only, to satisfy basic material needs, but

[7] World Commission on Environment and Development, Our Common Future, (Oxford, Oxford University Press, 1987), pp. 1-23.

also, to provide the resources needed to improve the quality of life in other directions meeting the demand for health care, education, and a good environment. Many forms of economic development make demands upon the environment and natural resources, which sometimes are in limited supply and, generate the by-products of pollution and waste. It is also the case that there are many ways in which the right kind of economic activity can protect or enhance the environment. These include energy efficiency measures, improved technology and techniques of management, better product design and marketing, waste minimisation, environmentally friendly farming practices, making better use of land and buildings and improved transport efficiency etc[9]. The challenge of sustainable development is to promote ways of encouraging this kind of environmentally friendly activity and discouraging environmentally damaging activities.

(b) Historical Basis for Brundtland Definition

The concept of sustainable development[10] is inherently ambitious. An historical background helps explain how the Brundtland definition was developed.

The historical background of the concept of sustainable development can be traced back to the 1972 Stockholm Conference on the Human Environment (UNCHE) which recognised "an urgent need for intensified action at national and international level, to limit and where possible to eliminate the impairment of the human environment". The UNCHE Declaration[11] provides in its Principle 13 as follows:

"In order to achieve a more rational management of resources and thus to improve the environment, States should adapt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve the human environment for the benefit of their population".

[8] R. K. Turner, 'Sustainability: Principles and Practice', in R. K. Turner, (eds.) Sustainable Environmental Economics and Management (London, Belhaven Press, 1993) at pp. 3-5.
[9] Ibid.
[10] N. A. Robinson, 'Comparative Environmental Law Perspectives on Legal Regimes For Sustainable Development', in Widener Law Symposium Journal Vol. 3, 1998.
[11] UN Do. A/CONF.48/14, 16 June 1972, reprinted in 11 ILM (1972)1416.

There are also a number of the other UNCHE Principles which provide guidance and stress the need for integration and co-ordination of environmental and development projects. These include responsibility to protect and improve the environment for present and future generations (Principle 1), safeguarding the natural resources of the earth for the benefit of present and future generation through careful planning and management (Principle 2), recognising the importance of nature conservation including wildlife in planning for economic and social development for ensuring a favourable living and working environment (Principle 8). However, all too little progress has been made towards actual integration of environmental considerations into development policies and practices. The statement made by the Stockholm Declaration concerning the linkage between the environment and development is rather general and thus had an immediate impact because many developing countries had have difficulty in implementing it. According to Birnie and Boyle (1991) at p.3, noted "the economic and political implications of restricting developmental activities have made it difficult for the principles to be implemented in practice especially among the developing countries whose incomes have been and are still declining."

However, some of the development in the 1980's showed growing recognition of the concept of sustainable development such as the World Conservation Strategy in the 1980s[12], the United Nations General Assembly in its Resolution 37/7 on the 28 October 1982[13] etc. Again, according to Birnie and Boyle (1991) at p. 431, noted "it is difficult to argue that the legal status of the Charter has any binding status for the purpose of

[12] The Strategy was drawn up by the International Union for Conservation of Nature (IUCN), see also, M. Redclift, Sustainable Development: Exploring the contradictions, (London, Routledge, 1989), p.20.
[13] UNGA Res. 37/7 reprinted in 22 ILM(1983)455.

conservation of natural resources." Nevertheless, the idea of sustainable development was first used herein the World Conservation Strategy, International Union for Conservation of Nature (IUCN)[14], 1980. This first formulation stressed the importance of sustainability in ecological terms and was far less concerned with economic development. A.M. Mannion and S.R. Bowlby (1992) noted " it argued for three priorities to be built-in to development policies: (1) the maintenance of ecological processes (2) the sustainable use of resources and (3) the maintenance of genetic diversity[15]". The emphasis was on the physical environment in its current state and this formulation was criticised for being anti-development. It saw economy-environment relationships simply in terms of the human impact on the environment as a static end-state[16] and tended to imply that any impact was negative. As such, it tended to attack symptoms rather than causes of environmental degradation. For example, it led to simple calls for stopping all tropical forest clearance without considering the forces leading to clearance whether they could be controlled and indeed, whether forest clearance was always a bad thing. There are many places in the world where some form of forest clearance is a logical and desirable use of resources. Indeed, without deforestation there would be no agriculture. It is better to attempt to manage the process in a sustainable way than to try to impose prohibitions, which could never be enforced.

Moreover, A.M. Mannion and S.R. Bowlby (1992) also noted that "poverty and the activities of the poor were seen as one of the main causes of non-sustainable development rather than recognising that poverty and environmental degradation are both consequences of existing development patterns". This lack of vision of the relationship

[14] A.M. Mannion and S.R. Bowlby (eds.), opcit., P.24.
[15] Ibid.
[16] Ibid.

between the economy and the development led to a re-formulation of the concept of sustainable development to reflect concerns over what many commentators or critics saw as an 'anti-poor' bias in the IUCN (1980) report[17].

After the failure of the IUCN (1980) report, the 1987 World Commission on Environment and Development (WCED) was established, chaired by Mrs. Gro Harlem Brundtland which brought the concept of sustainable development onto the international agenda.

(c) The Brundtland Commissions

The Commission initiated studies, which culminated in the publication of *Our Common Future* (the Brundtland Report), a report[18], which has set the benchmark for all future discussions of sustainable development. It was clear that this report has provided the most commonly used working definition of sustainable development.[19]The Brundtland Report identifies two key concepts in sustainable development policies[20]:

(1) "The basic needs of all people must be met in a way, which provides for their needs with security and dignity in the world today where the needs of so many are not met. This inevitably means giving the needs of the poor priority. This is not just desirable in moral or equity terms, it is also good development practice.
(2) There are no absolute limits to development, development potential is a function of the present state of technology and social organisation, combined with their impact on environmental resources."

The report also argues that poverty, resources depletion and environmental stress arise from disparities in economic and political power. From this, it is argued that sustainable development at a global level can only be achieved through major changes in the way in which the planet is managed. With this approach, sustainable development is

[17] Ibid.
[18] See more, D. Reid, Sustainable Development: An Introductory Guide, (London, Earthscan Publications Limited, 1995), Part II: The Implications of Brundtland's Definition Examined, pp. 67-126.
[19] Ibid., p.25.

not seen as a fixed state but rather a process of change in which each nation achieves its full development potential while at the same time building upon and enhancing the quality of the environmental resources on which development is based. This ambitious goal will require different forms of resources exploitation, investment patterns and decision-making processes, technological development, and institutional change.

The report advanced a long list of ambitious goals, many of which are imprecise and some of which are not mutually consistent. [21] It is interesting to see that they reflect the problems of the mid-1980s, which were a period of economic stagnation or decline, widening disparities between the income and prospects for the rich and the poor and of an increasing awareness that this form of economic development, which characterised the modern world, was undermining the sustainability of environmental processes[22].

The Brundtland Commission, however, wanted its report not to be seen as a "prediction of ever increasing environmental decay and hardship in a world of decreasing resources". Instead, there remained "the possibility of a new era of economic growth based on policies that sustain and expand the environmental resources base.[23]" By the end of 1988, a report, *Our Common Future* had received public backing from the leaders of over 50 nations. The issues raised by the report were discussed at the UN General Assembly in 1989, leading to the passage of resolution 44/228 which called for a UN Conference on the Environment and Development and established its terms of reference. In 1992, the Brundtland report was the central theme of the UN Conference on Environment and Development (UNCED, popularly known as the "Earth Summit". The

[20] Ibid.
[21] Ibid. 1. Reviving economic growth 2. Changing the quality of growth 3. Meeting essential needs for jobs, food, energy, water and sanitation 4. Ensuring a sustainable level of population 5. Conserving and enhancing the resources base 6. Re-orienting technology and managing risk 7. Merging environment and economic in decision-making process.
[22] Ibid., p. 26.

Earth Summit was held in Rio de Janeiro in June 1992. It was the first conference on the world's environmental future to be attended by the heads of states and governments. Over 120 world leaders attended the conference and more than 150 countries were represented overall. The conference called on governments to take action at national level and in particular to adopt strategies for sustainable development building on their existing plans and policies. The Earth Summit reached a number of important agreements, which together form a framework for further action. One of the statements agreed was the Rio Declaration on Environment and Development[24], which sets out 27 general principles for achieving sustainable development. To support this general declaration, the Summit adopted Agenda 21[25] a comprehensive action plan for the pursuit of sustainable development into the next century with 40 chapters of detailed recommendations addressed to international agencies, national and local governments, and non-governmental organisation (NGOs). A new Commission on Sustainable Development (CSD) was established under the aegis of the UN to monitor progress. The CSD held its first meeting in New York in June 1993, it has elected 53 members. Agenda 21 also called on governments to prepare national strategies for sustainable development and to submit reports to the CSD on the action taken to implement Agenda 21, on the problems faced, and on any other relevant environment and development issues.

Thus, the concept of sustainable development had been developing before the Earth Summit. However, it can be said that the Earth Summit greatly heightened the world's appreciation of the limits on nature's capacity to bear human developmental activities and thus the need for sustainable development. In many ways, the Rio Conference has

[23] CM 2426, Optic., p.27.
[24] The Rio Declaration on Environment and Development, UN. Doc. A/CONF.151/5/Rev.1(June 13, 1992), reprinted in 31 ILM (1992) 874.

enhanced the concept through clearer enunciation of the need to integrate environment and development. The concept of sustainable development underlies a number of principles in this Declaration, for example Principle 4 specifically provides for and requires sustainable development:

"In order to achieve sustainable development, environment protection shall constitute an integral part of the development process and cannot be considered in isolation from it."

Other principles address the problems concerning sustainable development more comprehensively and more concretely. These include those relating to the eradication of poverty as "an indispensable requirement for sustainable development"(Principle 5), "according special priority to the needs of developing countries particularly the least developed" (Principle 6), the "common but differentiated responsibility" of states in pursuing sustainable development (Principle 7), reduction and elimination of unsustainable patterns of production and consumption (Principle 8), and encouraging "public awareness and participation" by providing access to information and judicial and administrative proceeding concerning the environment (Principle 10). Moreover, principles relating to the implementation of sustainable development are spelled out namely the precautionary principle (Principle 15), the polluter-pays principle (Principle 16), intergenerational equity (Principle 3), requirement of environmental impact assessment (Principle 17), public participation and those calling for recognition of indigenous rights and community-based management including the role of women (Principle 10,20 and 22). Associated issues relating to the goal of sustainable development are also raised such as the right to development and to a healthy environment (Principle 1 and 3) respectively.

[25] Agenda 21-Action plan for the next century, endorsed at UNCED.

In general, there is a clearer recognition of the developmental need of developing countries in the Rio Declaration than in the Stockholm Declaration, for example in Principal 2, 6, and 11. In the view of international environmental law, it should be noted that the use of "shall" particularly in Principle 4 of the Rio Declaration does not make it binding per se. Although, this Declaration is different from others in the sense that it was adopted by consensus, this kind of procedure makes it more difficult to evaluate the position of individual states. Thus, the legal significance of the Declaration depends very much on subsequent state practice.

In practises, it is obvious that the concept of sustainable development is inherently ambiguous and unclear and it needs to define. The concept lacks a clear definition and meaning. It is open to a wide range of interpretations depending on the interest groups associated itself with the practice of the concept. As evidence, the WECD defined the concept only as development which "meets the need of the present without compromising the ability of future generations to meet their own needs".[26]This hardly provides a clear perception of the concept. Although the concept of sustainable development[27] has become widely known as a result of the Brundtland Report, international recognition of the need for integration of economic and environmental concerns predated the Commission's work.[28] It has long been obvious to the international community that over-development in some countries has resulted in environmental degradation while in others under-development has caused environmental decline.

[26] Sustainable Development: the UK Strategy, Ibid., p.8
[27] D. R. Hodas, 'The Role of Law in Defining Sustainable Development: NEPA Reconsidered', in Widener Law Symposium Journal Vol. 3, 1998, pp. 1-60.
[28] L.K. Caldwell, International Environmental Policy, Emergence and Dimensions, (Durham and London, Duke University Press, 1990), pp.197-204.

No matter whether the concept of sustainable development is unclear and has weakened international environmental law or not. There is no doubt that the question of the concept of sustainable development has become widely established as a significant concept applicable to environmental protection and decision making in the development process at all levels and that its importance will continue in the decades to come.

Sustainable development and its application in Asia

In Asia, the aspiration to adopt strategies for sustainable development must be considered against the reality of increasing pollution levels. Much of Asia and particularly Thailand, has experienced rapid economic growth prior to the present crisis in the environment. However, this "Asian miracle" exacted a high price on the region's environmental qualities and natural resources. International undertaking in sustainable development has not been sufficiently clear, even if there had been clarity it in many parts of Asia.[29] For example, the disaster of the Southeast Asian fires[30] starkly reveals this fact. Yet, sustainable development as a normative goal may be the only acceptable response to the fires. A greater emphasis on conservation has not proved acceptable to Thailand or most developing countries, given widespread poverty and current low levels of income. Sustainable development proves problematic not at the conceptual level, but

[29] It is significant that, before the crisis, Japan and the newly industrialised economies (NIEs) had passed the US$ 6000 per capita mark, whereas the second tier NIEs and others in Asia had not. Second tier NIEs, such as Thailand, had per capita incomes in 1996 of less than US$ 4000 and per capita incomes in China, Indo-China and most of South Asia were less than US $ 1000 per capita. Transposing these income levels onto the inverted "U" pattern of pollution, we might hypothesise that much of the region was going through the lower and more pollution-intensive section of the development pattern.

[30] In 1997 and early 1998, fires accompanied by smoke haze broke out in Southeast Asia and brought severe consequences for humans and the environment. Centred in the Indonesian provinces of Kalimantan and Sumatra, the fires spread smoke haze across national borders affecting the entire region(Malaysia, Thailand and Singapore. And forcing some twenty million people to breathe potentially harmful air for prolonged periods. See S. Tay, 'Southeast Asian Fires: The Challenge For Intentional Environmental Law and Sustainable Development', in Georgetown International Environmental Law Review , Vol. 11, 1999, pp. 241-300.

in ensuring that specific programs and processes of decision-making take sustainability fully into account.

The theoretical relationship between economic growth and environmental protection is both settled and controversial. It is settled in as much as the concept of sustainable development is well established by the Brundlandt Report.[31] The goal of sustainable development is to provide "development that meets the needs of the present without compromising the ability of future generations to pursue their own needs."[32] The concept of sustainability attempts to reconcile the twin imperatives of economic growth and environment protection. It served as a touchstone for the U.N. Conference on Environment and Development (or Rio Summit).[33] Increasing numbers of international treaties and institutions, both environmental and economic refer to sustainable development.[34] Some observers believe that it will crystallise into a peremptory norm of international law.[35] But beyond the increasing acceptance of sustainable development as a principle of international environmental law, the connections between economic growth and the environment remain controversial in practice, in specific, concrete situations. Some feel that the concept of sustainable development has been misused to "skilfully disguise a step backwards" for environmental protection because it prioritises economic

[31] See World Commission on Environment and Development (WCED), Our Common Future (1987) (also referred to as the "Brundtland Report" after the Commission's Chairperson, Gro Harlem Brundtland).
[32] See 'The Forests are Burning Again', Straits Times, Mar. 29, 1998, at 40.
[33] See Rio Declaration, , Principles. 1, 3-4.
[34] The World Trade Organisation charter, for example, makes reference to the goal of sustainable development in its preamble. Notwithstanding this, there remains considerable doubt whether the institution sufficiently considers environmental issues in the promotion of freer world trade. See Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, Legal Instruments: Results of the Uruguay Round, vol. 1 (1994), 33 I.L.M. 1125 (1994).
[35] See G Handl, A Hard Look at Soft Law , pp. 371-393 (1988). (arguing that sustainable development is a condition sine qua non for human life on the planet and must therefore act as a restraint in the higher interest of the whole international community); see also G. Christenson, 'Jus Cogens: Guarding Interests Fundamental to International Society', in Virginia University Journal of International Law , p.585 (1988).

development.[36] Sustainable development is "non-preservationist" and "reflects a commitment to promote development, albeit of a special qualitative nature."[37] Many environmentalists continue to express concern that economic growth and activity worsen the environment.[38] Some environmentalists believe that increased trade leads to the depletion of natural and environmental resources. As such, the wish to curb trade that harms the environment has generated many controversies, such as the Tuna-Dolphin case and Shrimp-Turtle cases decided by the WTO Dispute Settlement Body.[39] As regards investment, there have been concerns that competition between countries to attract foreign investment will lead to a cut in environmental standards (and therefore costs) in a classic "race to the bottom."[40] This issue continues to garner attention despite the fact that empirical studies show only mixed evidence of industrial migration in response to environmental standards.[41]

On the other hand, some assert that economic growth does not harm the environment, but actually allows greater environmental protection. They believe that free and open market economies are the best means for creating sustainable development and protecting the environment. Principle 12 of the Rio Declaration exemplifies this belief.[42] Anecdotal

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[36] M. Pallemaerts, International Environmental Law from Stockholm to Rio: Back to the Future?, in Greening International Law, at 1-19.
[37] Handl, Ibid., at 80
[38] See, e.g., J. Breecher & T. Costello, Global Village or Global Pillage(1994); P. Chatterjee &M. Finger, The Earth Broker(1994); R. Nader et al., The Case Against Free Trade (1993).
[39] There is considerable writing on the issues of trade and the environment, particularly regarding the tuna-dolphin case. See, e.g., B. Kingsbury, 'The Tuna-Dolphin Controversy: The World Trade Organisation and the Liberal Project to Reconceptualize International Law', in YearBook of Journal of International Environmental Law p. 1 (G. Handl ed., 1994). For a study of the issues in the context of Asia, see Asian Dragon and Green Trade: Environment, Economics and International Law (Simon SC Tay & Daniel C. Esty eds., 1996).
[40] For an examination of the Rio Summit and sustainable development that focuses on this concern, see Chatterjee & Finger, Ibid.,
[41] See D. Esty, 'Environmental Regulation and Competitiveness: Theory and Practice', in, Asian Dragon and Green Trade: Environment, Economics and International Law ,Ibid., at 33.
[42] "States should co-operate to promote a supportive and open international economic system that would lead to economic growth and sustainable development." Rio Declaration, Principles. 2.

evidence indicates that foreign investment can also lead to higher standards of environmental protection as foreign multinationals in developing countries conform with their own standards, which are often higher than those set by the host governments.[43] Several studies point to a conclusion somewhere between the extreme views that economic growth is either wholly bad or wholly good for the environment. The experience of the Organisation for Economic Co-operation and Development (OECD) and the newly industrialised economies in Southeast Asia, for example Thailand, teaches that pollution will first increase with economic growth, when industries have relatively low income levels, and then decrease with further economic growth to higher levels of income. This pattern is known as the inverted "U," or Kuznets curves, of environmental quality.[44]

Sustainable development, Agenda 21 and its importance in Thailand

In Thailand sustainable development has been adopted as part of environmental law (1992 Act) and has adopted the strategy for sustainable development since the Seventh National Economic and Social Development Plan (1992-1996). In addition techniques include the precautionary principle, the polluter pays principle (PPP), etc have also been adopted in the 1992 Act. As mentioned in chapter 6, such principles are integrated in the 1992 Act as follows: the application of the precautionary principles can be seen in Section 96 And in Section 10, the Environmental Impact Assessment (EIA) is in Section 46, 47, 48, 49 and 50. The application of the polluter pays principle(PPP) is in Section 68 (2) and Section 70(1). And the principles of public participation is in Section 6.

[43] See M. Pangestu & K. Roesad, Experiences from Indonesia and Other ASEAN Countries, in Asian Dragon and Green Trade, Ibid., at 99.

[44] A recent study exemplifies this changing relationship between economic growth and environmental protection in the area of water pollution, finding considerable improvements as income levels reach US$ 6000 per capita and remains stable thereafter. See Hettige et al, Industrial Pollution in Economic

In recent developments in environmental policies, Agenda 21 is the most important, and in Thailand the least understood document to come out of Rio. Thailand until now (at the time of writing) has not been yet accepted Agenda 21 at national policies level. Agenda 21 is a comprehensive road map of actions necessary for countries to achieve sustainable development. Because Agenda 21 is a programme of action, every chapter or subchapter begins with factual information and policies that explain the basis for action. Objectives or goals are stated next. The heart of each chapter or subchapter is a description of the various actions that countries agreed to take. The plan then describes the means required for their implementation. Agenda 21 was conceived and drafted as a plan, it was obvious that the success or failure of the Earth Summit would be judged by how the nations of the world adhered to the commitments they made in that plan.

"Humanity stands at a defining moment in history," Agenda 21 begins.[45] It then summarises much-discussed global problems: "We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being.[46]" Although much can and has been said about these problems, two facts bring the challenges of the next century into focus. By 2050, the current global population of about 5.7 billion people will grow to between 7.9 and 11.9 billion.[47] In the same period, the world's economy will grow by four or five times.[48] These two facts have the potential to greatly multiply already significant and complex environmental, social, and economic problems.

Development: Kuznets Revisited 14 (1997); see also PoncianoIntal, Perspectives from the Philippines and ASEAN, in Asian Dragon and Green Trade: Environment, Economics and International Law, at 89.

[45] Agenda 21, para. 1.1, UN. Conference on Environment and Development, Agenda 21,UN. Doc. A/CONF. 151/6Rev.1(1992), reprinted in 31 I.L.M. 881(1992).

[46] Ibid., para. 1.6.

[47] World Resources Institution., World Resoucress 1996-97, (1996) p. 173

Actions to achieve sustainable development are thus based on enlightened self-interest, not altruism. A degraded natural environment makes it harder for people to make a living. Rising sea levels from global warming would flood coastal cities around the world. Poverty, overcrowding, and competition for scarce resources can easily ignite military conflicts, and often have. To the extent that human activity destroys creatures, habitats, or natural systems that have long been in existence, it impoverishes us all.

Sustainable development, Agenda 21 says, is a way of turning these problems into opportunities. "Integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future.[49]" Because it is an agreement among the world's nations, Agenda 21 represents "the beginning of a new global partnership for sustainable development.[50]" Agenda 21's comprehensiveness is suggested by its length; regardless of how it is printed, the complete text is always several hundred pages long. Its four basic sections, concerning social and economic aspects, conservation and management of resources, strengthening the role of major groups, and means of implementation, suggest its broad scope. These sections are divided into a total of 40 chapters, many of which contain several subchapters.

The subjects for these chapters indicate the ambitiousness of Agenda 21. The social and economic section includes chapters on international trade and investment, poverty, consumption, population, human health, human settlements, and the integration of environment and development in decision-making. The resources section contains

[48] Ibid.
[49] Agenda 21, para. 1.1.
[50] Agenda 21, para. 1.6.

chapters on the atmosphere, land use, deforestation, desertification, mountain ecosystems, agriculture, biological diversity, biotechnology, oceans, freshwater, toxic chemicals, hazardous wastes, solid wastes and sewage, and radioactive wastes.[51]

In its third section, there is the most important section relevant to the thesis and Thailand. Agenda 21 identifies ways to enhance the role of many groups in decision-making for sustainable development: women, children and youth, indigenous people and their communities, non-governmental organisations, local authorities, workers and their trade unions, business and industry, the scientific and technological community, and farmers.

Finally, means of implementation include money, technology transfer, science, education and public awareness, capacity building in developing countries, international institutions, international legal instruments, and information.[52]

As a plan for sustainable development, Agenda 21 necessarily contains an operational definition of that term. The Brundtland Commission defined sustainable development in 1987 as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs.[53]" That definition captures the basic idea, but it is unsatisfying to those who want to know what it means in a specific context. The actions contained in Agenda 21 provide a way to understand more precisely what sustainable development means. Because the people who worked on specific chapters were knowledgeable about those particular areas, Agenda 21 also represents some of the best current thinking about sustainable development. Agenda 21 thus

[51] Agenda 21, Chapter 9-22.
[52] Agenda 21, Chapter 33-40.
[53] Our Common Future, Opcit., p. 41. Sustainable development is premised on the view that every human being has a right to a decent life.

provides a more focused and useful point of departure for a discussion of sustainable development than the one-sentence definition.

Countries that adhere to their Agenda 21 commitments must figure out what those commitments mean in their particular situations and how they should be implemented. Agenda 21 is simply too general to pull off the shelf and implement. For example: "Governments at the appropriate level, with the support of regional and international organisations, should strengthen regional co-operation and exchange of information on land resources.[54]" If governments are not already doing this, they must decide how to strengthen regional co-operation as well as what information to share with whom. Here and throughout Agenda 21, they must also determine what level of government is most appropriate. In general, Agenda 21 suggests that planning and management be conducted by the lowest governmental level that can take effective action.[55] Because many problems are most obvious at the local level, and because local government is closer to the people than higher levels of government, Agenda 21 proposes that municipalities adopt a local Agenda 21 process.[56] Agenda 21 also indicates that every part of society has a role to play in sustainable development.

Agenda 21 is relevant to all countries. For Thailand and developing countries, it encourages the provision of adequate sanitation systems and water supplies, access to basic health care, and the reduction of air and water pollution. Agenda 21 recognises or incorporates existing treaty commitments, such as those concerning climate or stratospheric ozone layer. Treaties are legally binding under international law on countries that have ratified them. The great majority of the Agenda 21 commitments,

[54] Agenda 21, para. 10.12.
[55] Agenda 21, para. 8.5 (g).
[56] Agenda 21, Chapter 28.

however, are not based on treaties. Such commitments are known in international law as "soft law," which is a way of saying that they should be taken seriously even if they do not have formal legal status.[57]

The most basic reason for adhering to "soft law" commitments is that a country's public agreement to do something is still a commitment, whether it is legally binding or not. The intense and vigorous negotiations among countries about every word and comma of Agenda 21 attest to the significance of the commitments that countries ultimately made.

Finally, a fundamental premise of Agenda 21 is that all nations have common obligations to their citizens as well as to future generations. Fulfilment of those obligations is part of what it means to be among the community of nations.

Taking sustainable development together with Agenda 21 there are some important lessons for Thailand from the UK experience. "Sustainable Development: The UK strategy" was developed in response to Agenda 21, as D. Hughes(1995) noted "the basic principles to emerge from the document are as follows: First, decisions throughout society must be taken with proper regard to their environmental impact. Secondly, Sustainable development requires the encouragement of environmentally friendly economic activity and the discouragement of activities which damage the environment. Thirdly, to a considerable extent environmental protection requires collective action. Finally, any decision about economic activity should take into account the cost of

[57] P. Dupuy, 'Soft Law and the International Law of the Environment', Michigan Journal of International Law, (1991), Vol. 12, p. 420.

pollution and waste and the value of resources consumed and conversely, the value of any environmental improvements made."[58]

Agenda 21 provides an important advance to the strategies of sustainable development. It provides an impacted dimension to local government and communities, ways to improve the environment. In the EU the Fifth action programme also takes forward the question of sustainable development into individual strategies and specific assessments.

There are a number of strategies to Agenda 21. First, identifying protection in specifies areas of development, secondly, ensuring financial resources and mechanisms that are applicable to the protection of the environment. Thirdly, the capacity to build co-operation strategies in specific areas of the environment- land, water air, etc. Finally, to develop the sectored responses to environmental protection, success in achieving Agenda 21 targets applies at the implementation stage. Local needs and communities action is a key way to take forward environmental protection. In that sense Agenda 21 sets the scene for the future.

Sustainable development, Agenda 21 and Case studies finding in Thailand

Agenda 21 in the third section "the ways to enhance the role of many groups in decision-making for sustainable development" above is relevant to the water case studies in Thailand. In a previous chapter the preceding water case studies raise the question about sustainable development in Thailand.

Does sustainable development meet the needs of Thailand?

(a) Market economy(fast development)

[58] D. Hughes, Environmental law (London, Butterworths, 1996), pp. 19-20. See also House of Commons, Select Committee on Environmental Audit Memoranda, HC 175, 27 January 2000, *Consultation Paper on a Revised UK Strategy for Sustainable Development.* (http://www.pubilcation.parliament.uk)

(b) Developing countries

(c) Regional vs. Central differences

(d) Feudal system-legal system which is not fully integrated and modernisation challenges

(e) Political differences and corruption

(f) Villages vs. City, Central vs. Domestic

The water case studies from different regions in Thailand in a previous chapter, point to other wider conclusions. First, market economy, all of the water case studies illustrate that sustainable development as a principle may not achieve its goals when faced with such challenges of a developing economy where fast development, and the rate of rapid growth takes places over short time periods. For example, in the case studies from upper northern Thailand when modernisation prompted by industrial growth has led to a water conflict among the people in that area who used to use water mainly for agricultural production. Secondly, in developing countries, the disparity between rich and poor, industrial and agricultural, local and central is much more than in western society. In Thailand, there is a sharp gap between things, which are significantly affected by the principle of sustainable development as adopted from western advanced economic systems. For example, in the Nam Siew Rock Salt Mining Case and Nam Pong River Basin Case, each case illustrated the conflict between economic growth and environmental protection. In each case water quality continued to decline as no effective pollution abatement measures were taken. The principles of sustainable development failed to apply to each of these cases. Finally, the cases were driven into the political arena and in the hands of national level politicians who were often reluctant to take effective action. Thirdly, regional vs. central differences, there is a huge gap between

these two groups, which created big differences and interests among themselves. For example, in the case studies from the central region, the problems of water allocation occurred because of differences between the rural and the urban. The farmers need the water for their crops but the urban want it for golf courses and industrial uses. Fourth, the feudal system- the legal system is not fully integrated and modernisation challenges. As mentioned in chapter 2, Thai's legal system is a mixed system and mostly copied from the west which is basically designed for commercial law in the first place, therefore it is very difficult to integrate this legal system for other purposes for example environmental protection. Modernisation prompted by industrialised rapid growth leads to a change in the use of law and legal regulation. When water conflicts occur, a question is often asked whether the existing laws or legal mechanism were able to solve the conflicts. The answer is clearly illustrated in most of water case studies in Thailand. Fifth, political differences and corruption, Thailand faced a political struggle for the last 50 years after the collapse of the absolute monarchy. The country has never been calm and peaceful from military rulers or dictatorships. This is another difference from the western world. Corruption is a major problem in Thailand. For example, in the Nam Pong Basin Case, the shareholders of the company which caused the damage to the river were the relatives of a former Director General of the Department of Industrial Works who were supposed to close the company. The big scandals in these cases and the conflict of interests have never been fully investigated. In the Nam Siew Basin Case, according to Wongbandit(1994)'s study, there was bribery among government officials and policemen, and some cabinet Ministers had vested interest in the salt industry. Finally, villages vs. city, central vs. domestic, again modernisation caused the differences and interests among these people.

The water case studies together make clear different aspects of conflict resolution in Thailand. It showed that the concept of sustainable development may not achieve its intended purpose when faced with the challenge of a developing economy like Thailand as shown in the case studies. The principle that is adopted from western society is not fully applied and integrated in Thai culture and country. It also showed that the traditional resolution of water conflicts in Thailand does not involve the Court's decision or the Judiciary's system but is rather done by the agreement of local needs or community action. This is relevant to Agenda 21, Thailand has incorporated the principles of sustainable development into its legal systems and planning regimes but the Thai government at the time of writing has not accepted yet Agenda 21 at national level. However, Thailand's environmental policies are still at a preliminary stage, In this thesis, an attempt has been made to identify some of the concepts, principles and issues associated with it, where most of it is still evolving. It remains problematic, how far these concepts, principles, and rights will be incorporated into laws and regulations. Even more uncertain is how these would be implemented and enforced in the future in Thailand.

The main obstacle to the implementation of environmental management in Thailand

Regardless of the existence of constitutional limits and technical improprieties until 1997, a vast body of environmental legislation had already been enacted permitting in theory satisfactory state intervention to prevent and combat predatory activities and therefore to ensure the preservation of environmental quality. On the whole, the legal picture with the 1992 Act could be considered satisfactory even before the Constitution of 1997 came into force. It is true that some of them need to be improved particularly those relating to the protection of waters and rivers which are highly inadequate.

Even giving due consideration to all the problems, a radical critique of the legal order would not suffice to explain the existing condition of abandonment and decadence of the Thai environment. In this case, if the mechanisms for acting were satisfactory, why did Thailand fail to implement environmental policies especially at local level? What are the main obstacles to the implementation?

These questions become even more significant when one notices that together with the vast amount of legislation, there are a large number of organisations and agencies within government who have the specific function of ensuring environmental preservation and policies. At the central levels, there have even been an MOSTE to which was linked large organisation such as the NEB. At local levels, there are also countless agencies, institutes, etc.

Such a contradiction was certainly caused by several factors with the four main ones deserving discussion.

1. Thailand's Legal System

First of all, Thailand's legal system is very modernised and highly improved over the past decade as discussed in chapter 2. It is highly regarded as one of the most advanced code and regulation in the world. Thailand has a modernised environmental law which is sound but it failed in practice. Why?

The 1992 Act modernised Thailand's environmental laws, but the question of how to enforce the law in terms of their protecting application, and implementation of the law remains unclear and uncertain. Despite the ambitious goals of the 1992 Act, more worrying is how suitable of the 1992 Act is for a developing country like Thailand? The question arises as to how well the 1992 Act is working? As a preliminary examination in chapter 2, the 1992 Act appears to offer strengthened powers to regulate the environment.

These powers as the principle of decentralisation are fundamental to the management approach adopted under the government's control. This allows them to regulate and enforce the law of environmental protection. The answer is does it fail when dealing at a local level and community base as illustrated in the water case studies. But why did Thailand have to modernise the law? We can draw conclusion from this that Thailand had to modernise its law because it needed to fulfil requirements when dealing with other developed countries and international organisation.

However such protection operates under a number of fundamental assumptions namely that the environment is left protected through legal rules enforceable in the courts. This idea of legal enforceability is adopted in western developed countries. It may be questioned whether these fundamental assumptions are valid ones.

2. Diversity

Secondly, one of the most serious problems affecting the condition of environmental preservation and the low standards of living of the Thai population was the total diversity of Thai people at all levels. Thailand is not like the UK, Germany, France or other developed countries. Thailand was an agricultural country for many decades and was industrialised a few years ago. There is still a very large gap between the rich and the poor, urban and rural, central and local etc. It is an uneven country. There is no subsidy for agriculture or farming like the Western world. That is why it could not solve the problems in the same way as the Western world.

This situation became even greater because as was mentioned, the modernisation was mainly conducted at national level by people interested in affirming their own interests. The local situation has to depend on providing its own solutions or self-help. The law has been largely ignored because it has not addressed the problems at a community base but

it served the objective and purpose at national and international level. This situation decisively contributed to the aggravation of the process of environmental deterioration.

There was also a permanent gap between the needs of the agencies responsible for environmental control and the resources and financial means they had available for the execution and monitoring of programmes and projects. Most public parks, reserves and conservation areas were practically abandoned and so were many conservationist plans. The statement of existence of legislative conflicts was common. However, although there were indeed some possibilities of conflicting interpretation of some laws, in actuality it would be more adequate to speak about conflicting activities between governmental agencies. As a matter of fact, despite these problems of legal interpretation such conflicts would have certainly been less frequent if there had been an effective environmental policy to render their activity compatible at local level.

3. National Problems vs. Local Problems

A third point to be stressed concerns how and why sustainable development is to be adopted in Thailand. Current concerns with the environment, what has been called the environmental crisis rest on the proposition that environmental modification has gone so far up to the point where the welfare of current and future populations are adversely affected. Therefore both intentional and incidental impacts of economic activity on the environment have to be reduced and ameliorated. This view underlies the notion of sustainable development to which following the earth Summit in Rio almost all the nations of the world are committed. It is clear that in Thailand's case sustainable development is still very doubtful when applied due to locality issues. It is suggested that sustainable development has not fully addressed the problems at local level but has only solved the problems at national level to fulfil their international obligation and

requirement. This is the same problem that applies with the modernised law and regulation in Thailand.[59]

4. Environmental Conservation and the Political Process

Each of the reasons previously given for the contradictory environmental picture existing in Thailand at the time of the promulgation of the new Constitution deserves to be discussed in its own right but it is clear that they are all intimately intertwined. Most importantly, they are but different effects of one sole reason.

If the political nature of the environmental question is recognised, it follows as a consequence that the basic reason for the deterioration of environmental quality in Thailand was principally the lack of an effective recognition of the value of such an issue in the decision-making process of the country' public order. In other words, the concern with the environment actually was just a minor aspect in the context of public policies if not a sole rhetorical argument. Besides constituting a technical decision which requires an objective evaluation of scientific data, the establishment of acceptable levels of environmental quality is fundamentally a political decision which express values central to the political process as a whole. Therefore, the fact that dominant interests of intensive exploitation of land and natural resources always prevailed over the social interest and social rights of the preservation of environmental quality in Thailand. It can only be fully explained after a critical analysis of the nature of the political process existing in the country.

Thailand has been the major country responsible for the pattern of industrial capitalism by direct or indirect action or even by omission.[60]Regardless of several

[59] M.J.G. Parnwell and D. A. Arghiros, 'Introduction: Uneven development in Thailand' in M.J.G. Parnwell Uneven Development in Thailand (England, Ashgate Publishing Limited, 1996), pp.1-27.

internal contradictions, state action clearly revealed a remarkable classic character having been fundamental to the maintenance of the capitalist domination in the country. By the same token, social rights were only recognised when necessary to guarantee the system's conditions of survival and self-reproduction. Throughout the authoritarian or military rule years in Thailand, an immense gap between the state and civil society was progressively opened for minimum channels of political representation of the popular will were not ensured. Despite the maintenance of the liberal stance affirming the people as the main and original sources of sovereignty and political power. The authoritarian Constitution of the last period of military rule (1932-1973) worsened this divorce making the maximisation of minority economic interest possible political exclusion was the very condition of economic accumulation. On one hand, there was an amazing concentration of political power and financial resources in the hands of the central government to the absolute detriment of state and local government. On the other hand, the overwhelming strengthening of executive power corresponded to an unbelievable attrition of both legislative and judicial powers opening areas for all sorts of political abuse, social repression, violence and disrespect for fundamental human rights. In the past, the few political channels available for the manifestation of popular interest were manipulated and distorted by a long tradition of clentelism to such extent that the Thai population was virtually excluded from the formal political process at all levels.

[60] M.J.G. Parnwell and D. A. Arghiros, 'Introduction: Uneven development in Thailand' in M.J.G. Parnwell Uneven Development in Thailand (England, Ashgate Publishing Limited, 1996), pp.21-27.

In this context, preservation policies were simply ignored by dominant classes since they always implied some economic cost to capital. Less favoured social groups had no opportunities to denounce the social cost and negative externalities provoked by the general process of production and consumption which were certain indications of the inefficiency of the economic system as a whole. It was in this context that the environmental legislation in force though formally satisfactory was not fully applied and exploited. To be more precise, one must recognise that the legislation in force was put into practice and did work efficiently but only insofar as it was convenient to satisfy the specific interest of dominant groups. If one examines more critically the legal picture trying to qualify rules, problems omissions and contradictions were highlighted, one notices that the enactment of environmental legislation has performed two main functions so far, besides providing legal and technical conditions for a highly profitable exploitation of natural resources.[61] It also has an important ideological function as long as it contributes to the diffusion of a distorted view of the character of state action and of its role in the economic process.

As a matter of fact, the constitution omission on the subject of environmental protection existing until recently had certainly benefited conservative interests of dominant economic groups, national and multinational[62] which have always refused to recognised either the social function of property or environmental protection as goals and limits of economic growth. This undefined constitution treatment of the matter left

[61] M.L. Shain, 'Thailand's Board of Investment: Towards a More Appropriate and Effective Rural Investment Promotion Policy', Pacific Rim Law and Policy Journal, Vol. 3, June, 1994, pp. 141-182.

[62] With the advent of stricter pollution controls in the industrial nations, certain serious polluting-processes and dangerous working environments by Japanese multinational companies were transferred to the developing countries like Thailand where controls in relation to hazardous employment and environmental destruction were either looser or less or else non-existent. This transfer has come to be known as pollution export. (S. Tsuru, Environmental Policy in Japan (Berlin, WZB, 1989), p.399.)

unpunished a series of private and public activities harmful to the environment ranging from a less significant impact to very grave damage like deforestation processes and serious water pollution which has been taking place in Thailand for a some time now.

As for existing environmental laws, they have been enacted as long as situations have demanded the regulation of activities concerned with the exploitation of natural resources in order either to make possible the capitalisation of such exploitation or to a lesser extent, to satisfy social claims and pressures.[63]However, the sole enactment of legislation was no guarantee of its being put into practice partly or globally. Generally speaking, the social dimensions of such legislation was largely ignored.[64] The maintenance of obscure situations as well as the enactment of formally advanced law are the two sides of the same process of ideological manipulation since eventually it is the centralised and segregated political process that determines the interests which are to be satisfied. In this process, the state openly supported and was supported by dominant economic interests of national and multinational groups.[65]Far from being neutral or ecologically friendly, the Thai government actually was one of the main agents in the process of environmental destruction.

The truth is that the conditions through which Thai economy is linked to the international market and the role played by the country in the contemporary stage of

[63] One of celebrated cases coming out of Japan was that generated by the Thai Asahi Caustic Soda Company which started operations in 1966 in a suburb of Bangkok. Mercury pollution of the local environment was discovered in 1972 and it has been said that news of this pollution was one of the main causes of the student uprising in 1973. See, Ibid., pp. 399-400.

[64] The main reasons for multinational corporations have had moving out of Japan and into developing countries like Thailand because there would be less in the way of control environmental regulations. Ibid., p. 395. In 1990, total Japanese accumulated investment in Thailand stood at $5.2 billion of which 85 percent had come since 1986 the caused of the Plaza Accord 1985. (Ministry of Finance , Japan.)

[65] The relation between the state and the business community has changed from one of *clientelism* with state as *the patron* and business as *the client* to one largely of *equal partnership*. Many businessmen became involving more in Thai politics. In this present government cabinet (Prime Minister Chaun administration), it is about 60% of Minister that have businessman background), See Matichol, 8 June 1999, Vol. 981, P.10.

world wide capitalist accumulation have been characterised by a complete disrespect for environmental values.[66]Despite its remarkable industrial growth, Thailand is still an important supplier of cheap raw materials to developed countries. This exploitation has been intensive and predatory during the increasing industrialisation in the country be it export-oriented or import-substitution oriented. This same phenomenon of maximisation of profits has taken place. In addition, the significant role of both civil construction and the speculative land market in Thailand must be stressed for they have also been determined by the same profit at any cost logic.[67]Furthermore, some of the most harmful interventions in the environment have been promoted by the state itself through the undertaking of massive engineering works(not always useful) which often were conceived to benefit sectors of capital linked to civil construction. Roads, building, airports, dams and hydroelectric projects have been implemented throughout the country very often sponsored by international finance organisation like the World Bank at the expense of environmental values. Meanwhile, it seems that the ideology of 'developmentalism' is still very strong and appealing. Therefore, preservation and conservation proposals are often said to be anti-economic, romantic or against the priority of economic growth.

[66] For example, Bangkok is voted of top ten of the worst polluted capital city in the world. See Matichol, 'the environment', 10 August 1999, Vol. 990, p. 84. And in December 1990, a study was published which estimated that by the age of seven Bangkok children cllectively suffer a loss up to 700,000 IQ point as a result of elevated blood lead levels because of air pollution. See United States Agency for International Development (USID), 'Ranking Environmental Health Risks in Bangkok, Thailand', Two Volumes, Working Paper, Office of Housing and Urban Programmes, Washiton, D.C., December 1990.

[67] The real estate boom started in ChianMai and Northern Thailand in the late 1980s slightly after Bangkok's boom. Low and high-rise condos, office buildings and housing developments began to overshadow Chiang Mai's golden temples. Land prices skyrocket from a few thousand baht per square wah(four square meters) to baht 100, 000 and higher. By 1996, a square wah in Chaing Mai' city centre was worth a quarter of a million bath or more. See 'The Boom (1986-1996)', East Asian Executive Reports , 15 December 1997, Vol. 19, No. 12.

Thailand is entering an age of more environmental awareness through adoption of legal measures and policies that accord with the goals and implements of environmental protection. Having established the minimal basis of a democratic system, the new Constitution 1997 undeniably improved the political order in Thailand. However, if the complexity of the political process existing in Thailand today is taken into account, it is clear that on the whole, the political order defined by the Constitution is still very limited being insufficient to satisfy social claims and to help solve structural problems. In its essence, the nature of Thailand has not been altered. The new Constitution may have replaced the liberal fundamentals of the former liberal economic order but it is still keeps much of the traditional liberal and obsolete structure of distribution and control of political power. Thailand should admit some limitations on its development process in order to avoid repeating the mistakes made by developed countries. To insist intransigently on the right to development without accommodating environmental interests will result in further environmental degradation that will have adverse effects for present and future generations. Experience in rapidly growing economies such as Thailand has shown that economic development without proper environmental management can stifle the developmental process itself. Therefore, it is in developing States' own interests that regard be paid to environmental protection. Causes and costs of pollution must be deeply analysed in order to demystify developmentalist appeals. This should be done through political action and education that must take place at all levels. Thai society must ensure the recognition of constitutional and other legal precepts in the daily political process, for this is the fundamental condition for an effective recognition of environment values and other social rights in the very heart of the country's public realm.

In considering the above discussion, the environmental problems in Thailand are not just legal problems nor are they problems to be exclusively faced at a technical or financial level. It is a problem of effectiveness. It is proved that sustainable development is a key success for Thailand regarding the environment and rapid economic development but it has to focus more effectiveness at local or community level.

The above discussion shows that not only law or sustainable development are sufficient to address the country's environmental problems, but also the solution of which depends on a highly local level as also evidenced with the water case studies in the previous chapter. In my view, the effectiveness is only assured when people (local needs and community action) once more are involved, to provide the answers to such a social process which is above all a decision making process.

Conclusion

As evidenced in the past decades, the concept of sustainable development has little impact in Thailand. The environment is still deteriorating while economic growth is increasing. It is clear that economic growth prevents its achievement. Thailand focuses on its economic prosperity more than its environmental protection. The question raises how economic growth could be made compatible to the environmental protection. The success to this the achievement is Agenda 21 looking especially at local needs and community action this might be a key to implement the strategies of sustainable development in Thailand.

This part of the thesis is considering sustainable development as part of the future development of environmental law in Thailand. First the concept of sustainable development is explored in some detail and then an analysis is given of how sustainable development offers a solution to some of Thailand's environmental problems.

Second, particular attention is given to the research in the case studies. For the first time case studies provide a glimpse of how environmental problems are addressed at a local level in Thailand. It is clear that the modernised environmental law is rarely used to enforce standards in the courts. This has reflected on the economic development, poverty and the difficulties faced by local communities for example "self help or communities base."

At the beginning of this chapter, the precise content of the sustainable development concept is still open for debate and discussion. Finally, this chapter presents Thailand as a case study of a developing country purporting to achieve sustainable development. The clearest conclusion to be drawn from the experience of testing the principles in the case studies is that sustainable development does not meet the existing demands of developing countries such as Thailand. Since the principle is adopted and integrated fully in western society and "sustainable development" is the 'key concept' in solving problems, this has been used to prove that it is not fully applied and accepted when dealing with water resource problems in Thailand. Sustainable development has not been perfectly executed at a local level and therefore has not fully assisted the law to address environmental problems. Thailand has to apply the concept of sustainable development to fulfil the requirements of international organisations such as the World Bank or WTO. Sustainable development does not provide any solutions at local level as was illustrated in the water case studies in a previous chapter. Therefore, it is recommended that focusing more on effectiveness in the future may bring results. Taking sustainable development combined with Agenda 21 to set the scene for the future of Thailand's environmental protection. Thailand should develop Agenda 21 targets at local needs and communities to provide strategies to achieve environmental protection successfully.

Thailand is chosen because it represents one of the several countries in Southeast Asia, which have been undergoing spectacular economic growth during the last decade. As Thailand's environmental policies are still in a preliminary stage. It is hoped that on the basis of these studies, recommendations for the effective implementation of the concept of sustainable development in the context of developing countries such as Thailand can be made, and some proposals on the way forward for the conservation of the global environment can be derived.

Chapter 9 Conclusions

Introduction

Thailand has one of the richest flora and fauna in South- East Asia. Its forests play host to approximately 7 percent of the world's plants and animal species.[1] This flora and fauna includes 15,000- 25,000 species of vascular plants and 600- 8000 species of fish.[2] Current estimates are that of 282 mammals 40 have become rare or endangered while of 916 bird species 190 are on the verge of extinction and of the 105 reptiles and amphibians 37 are on the verge of extinction.[3] Thailand's abundant rain fall and lush vegetation makes it one of the few natural ecosystems in the world that can sustain biodiversity. In this context the thesis may make depressing reading because Thailand's environment is at a serious stage of deterioration caused by rapid economic growth during the past two decades.

The thesis contains an analysis of three related issues. First, how Thailand's economy has grown rapidly over the past two decades. Thailand has become one of the leading developing countries in the world in terms of economic growth. Secondly, it is the direct impact of this economic growth on the environment. It is clear, how pollution both short and long term, caused by lack of planning and poor environmental regulation has had a serious impact in Thailand. Finally, through a number of water case studies, an analysis is provided setting out how water disputes are resolved in Thailand. Informal disputes settlement rather than formal legal means have been used to address environmental problems.

[1] M. Kaosa-Ard and S. Pedneker, Environmental Strategy for Thailand (1996), p. 19.
[2] Pollution Control Department, MOSTE, (1999) Pollution Thailand 1999
[3] M. Kaosa-Ard and S. Pedneker., Ibid.

Taken together the three issues provide the basis for consideration of how the concept of sustainable development might be applied in Thailand. Thailand may face a more certain future provided the strengths and weakness of a strategy for sustainable development as elaborated in Agenda 21 are addressed. Agenda 21 has added further impetus to strategies for sustainable development. The general question proposed in this thesis is whether sustainable development is capable of protecting the environment and at the same time allowing economic growth sufficient for Thailand to prosper. In this concluding chapter, an analysis of the thesis as a whole and its findings will be reviewed.

As outlined in chapters 1 and 2, Thailand's impressive economic growth over recent decades is remarkably high for its population size and the size of it's GDP. The speed of economic growth is a key element in participating many environmental problems within Thailand today. Implementation of industrialisation strategies to assist economic development gathered at a great pace in the 1970's and 1980's. Industrialisation especially in urban areas such as Bangkok shifted the entire base of the Thai economy from agriculture. Today, Thailand is a major industrial economic power in the region.

Chapter 3 outlined how Thailand has developed industries and processes that range from petrol-chemical to large industrial plant and the manufacture of western goods. Textiles, automobiles, high-technology computers and semi-conductor plants were located in Thailand where a low wage economy with a de-regulated employer and employee relationship encouraged economic expansion. In Thailand, factory regulations and health and safety requirements are weak. Enforcement of regulations is also weak. Government bodies failed to control the influx of industries and the demands set by the

new found economic wealth. Very few lessons from other developing countries were examined by the Thai authorities to prepare for the challenges posed by industrialisation.

Environmental law in Thailand

In chapters 2 and 6, Thailand's legal system and the results of poor regulation and weak enforcement procedures were outlined. It is clear that the Thai environment has suffered severe ecological damage with potentially unpredictable consequences. Thailand faces a dilemma between economic growth and environmental protection.

In the 1990's a decline in Thailand's economy led to economic collapse. Thailand faced severe recession and the GDP fell. An over-extending financial sector, a manufacturing sector too dependent on electronics and textile industries with too much capacity, an over-inflated property market and a rising standard of living which priced the country out of the low end of the export market all contributed to the Thai economic crisis. The consequences of Thailand's current economic situation are alarming and there is severely weakened economic growth and prosperity. It is clear that Thailand must learn the lessons of past mistakes in order to build for the future.

The link between economic growth and environmental pollution was established in chapters 3 and 4 of the thesis. Environmental problems include water resource problems and water pollution. Over the period of industrialisation environmental problems have accumulated and continue to grow.

We have seen in the thesis how environmental law and regulation in Thailand is weak and poorly enforced. In the modern period (1990-1998), the Thai government shifted its policy from an import-substitution to an exported-oriented economy. In general, environmental matters receive a low priority. The thesis has focused its attentions on the

analysis of water case studies in different regions of Thailand. Water resources play a part in the environment in Thailand. Studying water resources provides an example of how sustainable development could be implemented. Sustainable development strategies require access to a legal system that ensures a framework for proper planning and development within Thailand. As outlined in chapters 3 and 4, future economic growth in Thailand requires consideration of the environment. Protecting the environment is based on the protection of local communities and should be supported at central government level.

As evidenced in chapter 6, the 1992 Act is the most comprehensive environmental law in Thailand. Despite its numerous innovative provisions, the impacts of the 1992 Act have been less far reaching than initially expected. An analysis of the 1992 Act allows us to conclude that the present Thai environmental law is very complicated and too sophisticated to implement. For example, the performance of duties by the Ministry of Science, Technology and Environment (MOSTE) environmental officials and pollution control officials appointed under the 1992 Act has been largely supervisory due to the complacency of the officials concerned. To date, no area has been declared a conservation zone and little change has been brought about in the three environmental protection zones and six pollution control zones which have so far been declared. The major reason for this lies in the impossibility of effectively supervising such areas with the low level of manpower employed by the Pollution Control Department (PCD) which comprises of only about 200 persons.[4] Inadequate manpower also means that MOSTE lacks the capacity to ensure that the measures specified in environmental impact

[4] Interview conducted by Professor. John F. McEldowney and the researcher with the Director of the Legal Division, the Pollution Control Department, Bangkok, Thailand, 18 March 1998.

assessment (EIA) reports are actually carried out. The Environmental Fund has not been utilised as expected because most agencies concerned including provincial governmental agencies prefer to draw on the governmental budget rather than secure a loan from the fund at a low interest rate. Nor has the Fund been satisfactorily utilised by the Non Governmental Organisation (NGO) though this is permitted by the 1992 Act.

Notwithstanding these problematic issues, environmental law in Thailand does present positive aspects. Despite the deficiencies discussed in Chapter 5,6 and 7, the 1992 Act provides a landmark towards a new era of environmental control. The 1992 Act has created the necessary administrative structure for environmental management through the elevation of the National Environmental Board (NEB) and the establishment of the three new departments responsible for environmental control under MOSTE. Better procedures for and more extensive coverage of projects governing the conduct of EIA have been introduced. An Environmental Fund (at present about 6,000 million baht or US$240 million) was created to promote environmental management plans. Extensive powers have been given to pollution control officials (PCD) to fill any gaps left in the implementation of environmental laws by other relevant government agencies. The 1992 Act enables designation of conservation zones, environmental protection zones and pollution control zones where more stringent environmental standards may apply. It also incorporates various principles associated with the concept of sustainable development in particular EIA principles. Another significant impact, prompted by the extensive mandate provided for under MOSTE and the 1992 Act, is the creation of Regional Environmental Offices to supervise and advise on the implementation of environmental law.

Decentralisation of environmental management is provided for by devolution of the preparation of environmental management plans to the provincial level.

On the whole, the 1992 Act has brought about positive changes in environmental management in Thailand. Certainly more attention is now being given to environmental problems than in the period before 1992. The trend towards greater environmental awareness is irreversible and this has brought about more governmental accountability at least in the form of criticism in the media. Even so, as commented on by the researcher in chapter 6, the 1992 Act has not led to more stringent water quality standards. A new Water Bill is being proposed at the time of writing which will empower agencies with the authority to implement changes, carry out projects and provide guiding principles for government agencies.[5] More worrying is the enforcement of environmental law to maintain a balance between use and protection of water resources and maintain overall water quality in Thailand. As pointed out in chapter 6, it is generally admitted that enforcement of environmental law has not been adequate. Unless the problems of environmental staff shortages are improved and senior politicians and leaders begin to realise the country's dependence on limited water resources, the future of water resources will be seriously undermined. In order to ensure that future water resource development is sustainable and does not unduly impact upon the environment, enforcement of Thailand's existing environmental law is crucial.

The water case studies discussed in chapter 7 are the foundation for future research in this field of study. The case studies were taken from different regions in Thailand the North, Central and North-eastern parts of the country. The problems of water supply and water pollution from different sources industry, agriculture, household etc. were

examined for each case study. It was found that informal methods rather than formal legal means have been used to address environmental problems. The case studies show that with the sustained phenomenon of economic growth, there has been a shift from an agricultural to an industrial based economy. The impact of such a major and rapid shift has been considerable, and since the 1990s Thailand has been facing an increasing water crisis. Water scarcities have presented long term problems. The water problem has become increasingly salient as Thailand continues to benefit from remarkable economic growth rates.

Sustainable development and the environment

The case studies have shown that dispute resolution is to be found in non-legal procedures. These include informal and customary ways of settling problems. The formal protection provided by environmental law is not applied. There are many reasons for the failure of the 1992 Act to give environmental protection in Thailand. As shown by in the water case studies the concept of sustainable development, adopted from western society and the advanced world, has not been fully integrated and accepted within Thailand. The principles failed to meet the demands of developing countries like Thailand at local levels. They have largely been developed to fulfil the requirements and obligations of developed countries at national and international level.

The clearest conclusion to be drawn from the case studies is that the principles of sustainable development that should play a central part in resolving water resource problems have failed to meet the demands of the problems. This was illustrated for the large dam projects and canal systems in the North, water shortages in the Central region

[5] Bangkok Post daily newspaper, 'Sandbagging a sensitive issue', 13 September, 1998.

and water pollution in the Northeast region of Thailand.

Water resource problems arose at large dam projects and canal systems and in water shortages. These recurred almost annually with the onset of the dry season. Water supply could not keep pace with water demand. This was attributed to a number of factors including population growth, economic development, deforestation, meagre rainfall and improper management of water resources. Problems typically arose between upstream and downstream water use for agriculture and industry. When water conflicts occurred, the question was often asked whether the existing laws or legal mechanisms were able to solve them. The current laws concerning water resources are not able to cope effectively with existing water conflicts. Legal problems occur due to unclear water rights and poor law enforcement mechanisms. These need to be rectified possibly through the introduction of a proper water management system, which may include the requirement of licenses for water use. The water case studies indicate that sustainable development is not currently applied or fully accepted with regard to the resolution of water management problems.

The cases of water pollution in the Northeast illustrate the lack of legal clarity regarding who caused the pollution, overlapping responsibility between authorities, lax law enforcement, and political influence in the form of lobbying and bribery. In each case where water quality continued to decline, the officials or the government did not take seriously the EIA reports. As mentioned above, the concept of sustainable development failed when applied to practical case studies. A number of conclusions are clear from the case studies.

As outlined in the previous chapters, this thesis is the first attempt to provide a systematic analysis and understanding of environmental protection within Thailand. Thai culture, religion and communities are under considerable pressure from the outside world. Thailand is currently taking steps towards adopting a traditional approach to environmental law and policy as evidenced in chapter 7. As the modern world begins to overshadow all aspects of traditional Thai life, fewer people understand or study how Thai traditional ways of informal dispute settlement can promote sustainable development by providing "a mixed approach" in Thai environmental laws and policy. The Thai approach is important because pollution and conservation problems cross all geographical boundaries and what happens in one country affects others, it may also provide a model for use in other Southeast Asian countries or other developing countries

As evidenced in chapter 8, the concept of sustainable development is still evolving. There is, however, a general agreement that it has become highly significant in the development of international environmental law. Many principles have been associated with the concept, some of which are more widely accepted than others. These principles appear to have little practical impact on the achievement of sustainable development in the case of Thailand. The status and development of sustainable development in international law will need to be investigated in future studies. In Thailand, it is clear that the concept of sustainable development is not fully implemented when dealing with local issues due to diversity and uneven development in Thailand. Undoubtedly its effectiveness should be improved in the future. Thailand should address the proposal for using local community action as outlined in Agenda 21, to add impetus to further the development of sustainable development. As outlined in chapter 8, Agenda 21 provides

an important advance to the strategies of sustainable development. It provides an action plan to meet local needs and community action to improve the environment. As shown in the water case studies in chapter 7, clearly that Agenda 21 is an important strategy where the concept of sustainable development failed to apply within a locality.

Conclusion: The way forward

Thailand is entering an age of greater environmental awareness through the adoption of legal measures and policies that accord with the goals and requirements of international environmental law. As evidenced in chapters 5,6, and 7 a number of substantive measures have been taken to control water problems. An outstanding achievement is a draft Water Bill that concentrates on the management of the country's water resources, if approved by the cabinet, this will be Thailand's first water legislation. It is proposed in the Water Bill to change the structure of authority overseeing Thailand water resources. Although this may take some time, it is clear that the trend in Thailand is towards tighter water resource control.

This thesis has sought to demonstrate the difficulties of implementing the emerging concept of sustainable development in the field of water recourses in developing countries such as Thailand. It should be noted that the success of implementation in developed countries cannot be compared with developing countries. While there is evidence that a number of legal and policy measures are being raised in Thailand, the question is whether enough has been done to avoid the mistakes committed by developed countries. Thailand is in the advantageous position of being able to learn from the mistakes and environmental failures of the UK and other developed countries with respect to environmental-water policies. Thai leaders and citizens have important choices

confronting them as they proceed with development and modernisation while seeking to be responsible stewards of their water and other national resources for the benefit of future generations. There is an urgent need to pay more attention to the various principles and concepts referred to throughout this thesis the aims of which are to achieve sustainable development at all levels. It is clear that Agenda 21 and local community participation will play a significant role in the future development of Thailand.

This thesis has investigated environmental laws of Thailand focused on the water resources, analysis of the relevant water pollution legislation, the procedure used to implement the law, the environmental policies and agencies, the political system, the enforcement of the law, analysis of case studies concerning water problems and the relationship between economic growth and environmental protection. It has demonstrated that the new environmental law, the 1992 Act has produced some significant results. But, it proved to be too sophisticated and too complicated for a developing country such as Thailand. It has shown that environmental law in Thailand is still fragile and at too early a stage to achieve sustainable development. Drawing from the findings of the case studies, it has shown the concept failed to be applied locally within different regions.

The level of the law that Thailand currently has in place governing the use and supply of its water resources, the prevention and control of water pollutions and the environmental impact of water resources developments appear to be inadequate. Weak points, especially in the system created for enforcement of the law, problems of ownership, the lack of government intervention in some water case studies and the instability of economic and environmental policies adopted by the government affect

directly the viability of environmental law. It is hoped that when the new Water Bill comes into force, it will overcome all legal problems and obstacles.

The conclusions reached by this study seem to be pessimistic, however, it is necessary to bear in mind that Thailand as with most other developing countries has been facing economic and political instability over the years which is a factor of uncertainty for the development of any kind of policy. It is not possible to affirm that this period of instability is over. Nevertheless, it is crucial that Thailand should take advantage of the present phase that favours the existence of environmental law in order to think about the failure of the balance between economic growth and environmental protection in the past. Choices made now will have a crucial impact upon its water resources and environment for future decades.

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