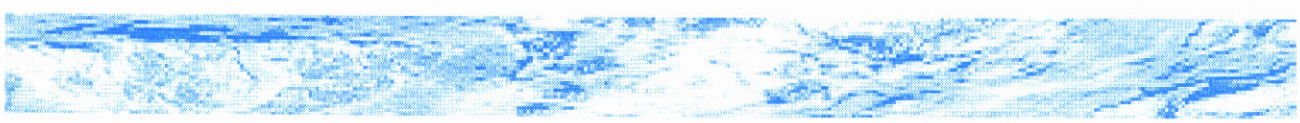
MPP-EAS/Info/99/201

# Assessment of National Marine Pollution Legislation in East Asia



December 1997

# Assessment of National Marine Pollution Legislation in East Asia

December 1997

Published by the GEF/UNDP/IMO Regional Programme
for the Prevention and Management of Marine
Pollution in the East Asian Seas

Printed in Quezon City, Philippines

A GEF Project Implemented by UNDP

MPP-EAS/Info/99/201




## MISSION STATEMENT

The primary objective of the Global Environment Facility/United Nations Development Programme/ International Maritime Organization Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas is to support the efforts of the eleven (11) participating governments in the East Asian region to prevent and manage marine pollution at the national and subregional levels on a long-term and self-reliant basis. The 11 participating countries are: Brunei Darussalam, Cambodia, Democratic People's Republic of Korea, Indonesia, Malaysia, People's Republic of China, Republic of the Philippines, Republic of Korea, Singapore, Thailand and Vietnam. It is the Programme's vision that, through the concerted efforts of stakeholders to collectively address marine pollution arising from both land- and sea-based sources, adverse impacts of marine pollution can be prevented or minimized without compromising desired economic development.

The Programme framework is built upon innovative and effective schemes for marine pollution management, technical assistance in strategic maritime sectors of the region, and the identification and promotion of capability-building and investment opportunities for public agencies and the private sector. Specific Programme strategies are:

- Develop and demonstrate workable models on marine pollution reduction/prevention and risk management;
- Assist countries in developing the necessary legislation and technical capability to implement international conventions related to marine pollution;
- Strengthen institutional capacity to manage marine and coastal areas;
- Develop a regional network of stations for marine pollution monitoring;
- Promote public awareness on and participation in the prevention and abatement of marine pollution;
- Facilitate standardization and intercalibration of sampling and analytical techniques and environment impact assessment procedures; and
- Promote sustainable financing mechanisms for activities requiring long-term commitments.

The implementation of these strategies and activities will result in appropriate and effective policy, management and technological interventions at local, national and regional levels, contributing to the ultimate goal of reducing marine pollution in both coastal and international waters, over the longer term.

Dr. Chua Thia-Eng
*Regional Programme Manager*
GEF/UNDP/IMO Regional Programme
for the Prevention and Management
of Marine Pollution in the East Asian Seas

# Contents

# List of Tables

# Acknowledgments

This report was prepared Ms. Brenda Jay C. Angeles, Ms. Stella Regina Q. Bernad, Mr. James L. Kho, Ms. Carolyn A. Mercado, Ms. Therese Desiree K. Perez and Dr. Zhang Haiwen, consultants, in fulfillment of their contracts with the GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas. The work represents one activity in the International Conventions component of the Regional Programme.

Completion of this report would not have been possible without the generous contribution by members of the Regional Network on the Legal Aspects of Marine Pollution of reference materials to the Regional Programme's Legal Information Database. Sincere gratitude is extended to these persons and institutions.

The advice and support of Dr. Chua Thia-Eng, Regional Programme Manager, GEF/UNDP/IMO Regional Programme, and Dr. Antonio G. M. La Viña, Program Director, Biological Resources, World Resources Institute, are gratefully acknowledged. Technical assistance on the publication of this document by Ms. Maria Socorro Z. Manguiat of the GEF/UNDP/IMO Regional Programme is also acknowledged.

The International Conventions component is coordinated by Mr. S. Adrian Ross, Senior Programme Officer, GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas.

# Executive Summary

This is a report on marine pollution legislation and regulations of nine countries in the East Asian region as well as their adoption and implementation of international conventions relating to marine pollution. During the past few years there has been some development in the ratification of conventions and enactment of legislation relating to marine pollution. Nonetheless, the present record of most countries in the East Asian region still leaves much to be desired. The report is envisioned as a step towards better understanding and further development of marine pollution legislation.

All the countries reviewed have framework environmental laws that contain the basic elements of environmental protection, except for Singapore, which tends to focus on sectoral laws. Four countries have framework maritime transportation laws, but only Indonesia's and Singapore's laws provide good bases for marine pollution management. Most of the countries have provisions of law dealing with marine pollution, but these are spread among many different pieces of legislation. A common requirement of all countries is the conduct of environmental impact assessment (EIA). The use of market-based instruments (MBIs) is less common, although there is some statutory basis for its utilisation in most of the countries. Public participation is required in varying degrees in all the countries.

In general, the Matrix on Ratification in East Asia of International Conventions Relating to Marine Pollution (Table 1) shows a rising number of ratifications[1] but still a relatively poor record of implementation among the countries surveyed. The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989 (the Basel Convention) are the most commonly ratified. Thailand and the Philippines are preparing to ratify MARPOL 73/78, thereby providing a uniform legal framework throughout the region for managing ship-based pollution.

[1] *The term "ratification" is used generically to denote a state's becoming party to a convention, including by the process of accession.*

**Table 1. Ratification in East Asia of International Conventions Relating to Marine Pollution (as of 27 August 1999)**

| COUNTRY | UNCLOS 82 | MARPOL 73/78 Annex I/II | MARPOL Annex III | MARPOL Annex IV | MARPOL Annex V | MARPOL Annex VI | London Conv 72 | London Prot 96 | Intervention Conv 69 | Intervention Prot 73 | CLC Conv 69 | CLC Prot 76 | CLC prot 92 | FUND Conv 71 | FUND Prot 76 | FUND Prot 92 | Salvage 89 | OPRC 90 | Basel 89 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brunei | 96 | 86 | | | | | | | | | 92 | 92 | | 92 | | | | | |
| Cambodia | | 94 | 94 | 94 | 94 | | | | | | 94 | | | | | | | | |
| China | 96 | 83 | 94 | | 88 | | 85 | | 90 | 90 | d | 86 | 99 | | | | 94 | 98 | 92 |
| DPR Korea | | 85 | 85 | 85 | 85 | | | | | | | | | | | | | | |
| Indonesia | 86 | 86 | | | | | | | | | 78 | | 99 | d | | | | | 93 |
| Malaysia | 96 | 97 | | | 97 | | | | | | 95 | | | 95 | | | | 97 | 93 |
| Philippines | 84 | | | | | | 73 | | | | | | 97 | | | 97 | | | 93 |
| Rep. of Korea | 96 | 84 | 96 | | 96 | | 93 | | | | d | 92 | 97 | d | | 97 | | | 94 |
| Singapore | 94 | 90 | 94 | | 99 | | | | | | d | 81 | 97 | | | 97 | | 99 | 96 |
| Thailand | | | | | | | | | | | | | | | | | | | 97 |
| Vietnam | 94 | 91 | | | | | | | | | | | | | | | | | 95 |

Numbers represent year of ratification/accession
d - denounced

However, the level of implementation of MARPOL 73/78 varies from country to country (Table 3, page 6). In a similar vein, most of the countries have legislation on toxic and hazardous waste taking the "cradle-to-grave" approach, but not all implement the Basel Convention to the letter. Many of the countries surveyed are considering the other conventions for ratification. Implementation of conventions does not follow as a matter of course in many of the nine countries, except in Singapore.

The reasons for non-ratification and non-implementation among the countries may be grouped into four categories: a) lack of resources; b) administration issues; c) fragmented legislation; and d) lack of political will. The exception is Singapore, where non-ratification of a convention is usually due to an assessment that the country is not ready to meet that convention's obligations, or does not need to ratify said convention.

Recommended approaches to improve the situation focus on the following actions: a) awareness-building; b) clear designation of authority and delineation of functions, as well as coordination among implementing agencies; c) effective implementation strategies; d) strengthening of enforcement measures; and e) shifting to a pro-active approach.

As part of the study, profiles were prepared for each of the nine countries. These country papers discussed the marine pollution situation in each country, evaluated existing legislation relating to marine pollution, examined the ratification and implementation of international conventions and initiatives and assessed the country's needs in capacity building for legislation and ratification of international conventions on marine pollution. The country papers are in Appendix 1. Set out below are the salient points of each country paper.

**Cambodia** understandably has the least developed legislation among the subject countries, due to its political conditions during the past few decades. However, it has taken the first step by passing a framework environmental protection law. The law provides the basic principles in environmental protection, including EIA, waste management, inventory, prevention, reduction and control of toxic and hazardous substances, determination of protected areas, public participation and access to information, and the establishment of an Environment Endowment Fund.

Cambodia has ratified MARPOL 73/78 and its five annexes as well as the International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC 1969), but has not yet implemented them. Certain laws, mostly old issuances, have some provisions on marine pollution. Aside from these, at present there is little infrastructure dealing with marine pollution in Cambodia. Fortunately, marine pollution is not yet a big problem. It is

still possible to develop such infrastructure in concurrence with the need to respond to future problems.

In response to the challenge of the degeneration of the marine environment, many measures have been taken in **China** since the 1970s.

The Environmental Protection Law is the basic law in the field of environmental protection. There is also a separate Marine Environmental Protection Law as well as specific arbitration rules for settling disputes concerning maritime affairs, including disputes on marine environmental protection. In implementing national legislation on marine environmental protection, some coastal provinces have issued their own local regulations on marine environmental protection. The latest and most important development among the relevant laws is the Criminal Law, to which a new chapter focusing on the punishment of activities that cause severe environmental damage has been added.

EIA was required for certain projects as early as the 1970s, although the requirement was formally enacted into law only in 1979. The EIA system has proven to be one of the most effective environmental management systems in China, although changes will have to be introduced to adapt to the development of the market economy. Complementing the EIA system is the Tripartite Regime, which requires that facilities for the prevention of pollution of any new construction, reconstruction and extension be designed, built and put into production at the same time as the major part of the project.

Discharge fees are collected for the discharge of pollutants in excess of the related state or local standards, over and above other administrative, civil and criminal liabilities. Collections are placed in a special account known as the Subsidy for Environmental Protection, which is in turn loaned to enterprises that wish to upgrade their pollution prevention facilities and provides environmental protection agencies with more abundant financial sources for the improvement of their equipment and installations. Various types of fees are also collected for using natural resources and environmental spaces. The collected fees shall be part of the state and local revenues and shall be used mainly for the management of marine pollution.

To date, China has ratified most international conventions on marine environmental protection. However, most of its laws and regulation on the subject were issued in the 1980s. Thus, while their provisions complied with the provisions of conventions then, subsequent amendments and new stipulations in international instruments have not yet been considered. In addition, China has yet to become a party to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971

(FUND 1971), the International Convention on Oil Pollution Preparedness, Response and Co-Operation, 1990 (OPRC 1990),[2] and the International Convention for the Safety of Life at Sea, 1960, 1974 (SOLAS).

As the largest archipelago in the world, **Indonesia** recognises the importance of its marine environment. Indonesia has a number of laws and regulations dealing with the marine environment, namely on the exclusive economic zone (EEZ), continental shelf, navigation, fishery, water pollution and water quality standards. Each of these laws has some provisions for protection of the marine environment. There is no basic law on marine pollution. There are a number of laws on different land-based sources of marine pollution.

Indonesia first passed a framework environmental protection law in 1982. A new law to replace the 1982 law was passed and took effect in 1997. The old and new laws have provisions on EIA. Indonesia's EIA system is relatively well-developed. The original legislation was amended so that the system could be used in coordination with the law on spatial planning, or zoning, as a management tool.

Indonesia has ratified MARPOL 73/78 (Annexes I and II), CLC 1969 and FUND 1971.[3] Indonesia implements these conventions, although it is still in the process of developing adequate and cost-effective shore reception facilities. OPRC 1990 is in the process of being ratified. So is the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention 1972), although in principle, Indonesia does not allow ocean dumping. It has also developed a national oil pollution contingency plan and participates in the Association of Southeast Asian Nations (ASEAN) Oil Spill Response Action Plan (OSRAP). The country is also developing implementing legislation for the Basel Convention, which it ratified in 1993.

**Malaysia** has the framework Environmental Quality Act (1974, amended in 1996), which has chapters on prevention of pollution in the atmosphere, soil and inland waters, prevention of waste discharges into the sea and environmental labelling, audit and impact assessment. Regulations issued under authority of this law include sewage and industrial effluents, EIA and waste treatment and disposal. Other laws also prohibit pollution of the marine environment, particularly the Exclusive Economic Zone Act and Continental Shelf

---

[2] *China ratified OPRC in 1999.*

[3] *Indonesia ratified CLC 1992 in 1999 and denounced FUND 1971 in the same year.*

Act, 1984. The Merchant Shipping (Oil Pollution) Act, 1994 is the implementing legislation for the CLC 1969 and FUND 1971, both of which Malaysia ratified in 1995.

In the last three years, Malaysia has ratified the United Nations Convention on the Law of the Sea (UNCLOS), MARPOL 73/78 (Annexes I, II and V), CLC 1969, FUND 1971 and OPRC 1990. Implementing legislation for MARPOL 73/78 and OPRC 1990 are still being developed. While it is not a member of the London Convention 1972, the EEZ Act of 1984 substantially follows the Convention's prohibitions. The Basel Convention, which Malaysia ratified in 1993, is implemented by guidelines under the Customs Act.

Among the factors required by Malaysia for effective management of marine pollution is improved coordination among the agencies with jurisdiction over land- and sea-based sources of marine pollution. Malaysia appears to be moving forward in this regard.

The **Philippines** has a framework environmental law and a marine pollution law, in addition to numerous other pieces of legislation concerning the marine environment. However, these laws have not been implemented consistently or effectively. The country has been a member of the London Convention 1972 since 1973. However, its laws and regulations relating thereto are too general for effective compliance and enforcement. Moreover, it still does not have the technical capacity to fully implement the London Convention 1972. Ratification of MARPOL 73/78 is under way. The CLC's and FUND's 1992 protocols (hereinafter, CLC 1992 and FUND 1992, respectively) were recently ratified and will take effect in July 1998. Implementing measures need to be formulated.

The Philippine EIA system is one of the most developed in the region, with the most recent regulations introducing innovative concepts such as the use of environmental risk assessment, an emphasis on social acceptability of the projects or undertakings covered by the system, and the setting up of environmental guarantee and monitoring funds (EGF and EMF, respectively) by the project proponent. Experiments with other MBIs, such as pollution charges are currently being undertaken. Relative to other countries in the region, there is significant public participation in environmental management processes.

The Philippines has a number of government agencies with overlapping mandates in the marine environment, with no single body performing a lead agency or co-ordinating role. There is a recognised need to develop mechanisms to overcome the lack of accountability on the implementation of national regulations.

The **Republic of Korea** is one of the most industrialised countries in the East Asian region. In the early years, such development was often given higher priority than the

enactment and implementation of environmental legislation, resulting in serious environmental degradation. As such effects could not be ignored for long, several initiatives towards better management of the marine environment have been promoted since the late 1980s. Foremost among these reforms were the creation of the Ministry of Marine Affairs and Fisheries (MOMAF), a cabinet-level superagency with primary responsibility for management of the marine environment and the activities therein, and the establishment of an integrated coastal management (ICM) plan at the national level, through the recently enacted Coastal Management Law. In addition, since the 1990s, environmental nongovernmental organisations that were previously suppressed have participated in the decision-making process on natural resource utilisation, and contributed to a change in the national environment policy.

The Republic of Korea's Framework Act on Environmental Policy was passed in 1990. There is also a separate Environmental Impact Assessment Act that took effect in 1993, although EIA has been carried out since February 1982. The Prevention of Marine Pollution Act is the most important statutory law affecting the marine environment, and together with about 19 other laws provides the legal framework for the protection of the marine environment and the control of polluting activities in the Republic of Korea. The ministerial ordinance for said Act follows the requirements of MARPOL 73/78. The Water Quality Conservation Act is the major regulatory statute for controlling land-based sources of pollution.

So far, the country has had a relatively good record of ratifying the pollution conventions including: UNCLOS, MARPOL 73/78 (except Annex IV), the London Convention 1972, CLC 1992 and FUND 1992, the International Convention on Salvage, 1989 (Salvage Convention) and the Basel Convention. The record on implementation of these conventions is not as clear. The Republic of Korea has been actively co-operating with its neighbours to formulate action plans for the protection of the marine environment and has entered into several regional and bilateral treaties with China, Japan and the Russian Federation for this purpose.

**Singapore** is a major player in the field of international shipping and trade. It has participated actively in the work of the International Maritime Organization (IMO) and is a member of the IMO Council. Singapore also actively participates in ASEAN initiatives on marine environmental protection, and is the co-ordinator of the Working Group on Transboundary Pollution.

Singapore takes its responsibilities under international agreements seriously and does not sign onto an agreement unless it is certain to meet its obligations. Passage of implementing legislation is carefully timed to coincide with the entry into force of such agreements in Singapore. Implementing legislation may even go beyond Singapore's

obligations under the convention or protocol. For instance, while Singapore has acceded only to Annexes I, II and III of MARPOL 73/78, the Prevention of Pollution of the Sea Act of 1990 also contains provisions relating to Annexes IV and V.[4]

Singapore has the advantage of being small in size and population. As a result, administrative structures are fairly simple and single-tiered. Thus, despite the involvement of several government agencies in the area of protecting the marine environment, Singapore does not appear to suffer from the same problems which countries with similar multi-agency structures experience. Its optimal size, coupled with its political will, may in part also explain its relative success in the implementation of many of its laws and regulations on the protection of the environment.

**Thailand** amended its Enhancement and Conservation of National Environmental Quality Act in 1992. The Act deals extensively with land-based sources of pollution. Among its innovative features is the establishment of the Environmental Fund for assistance in waste management and other projects to promote and conserve environmental quality. The use of MBIs is more advanced in Thailand than in the other countries. Thailand has also established an EIA system.

While national legislation on land-based sources of marine pollution in Thailand is extensive and scattered in many different laws, legislation on sea-based sources is limited to three articles in the Navigation in Thai Waters Act. The ratification and implementation of the marine pollution conventions would be a good opportunity for Thailand to develop national legislation on marine pollution. Thailand ratified the Basel Convention in 1997 and is in the process of developing regulations to conform thereto. The country has not ratified any other international convention relating to marine pollution. A policy decision has been made in Thailand to ratify MARPOL 73/78, CLC and FUND.

**Vietnam** has a framework Law on Environmental Protection and a Maritime Code. These laws have provisions on the main subjects of marine pollution, but these do not necessarily conform to the requirements of the international conventions. Vietnam ratified MARPOL 73/78 (Annexes I and II) in 1991, and is in the process of developing national legislation conforming to the Convention. It subsequently ratified UNCLOS in 1994 and the Basel Convention in 1995. An EIA law was passed in 1994. There is a currently an effort to

[4] *Singapore ratified Annex V in 1999.*

ratify CLC 1992, FUND 1992, OPRC 1990 and the London Convention's 1996 Protocol (London Convention 1996), with the first two further along in the process.

Currently, there are limited resources and little incentive for environment-friendly practices and equipment in Vietnam. Bureaucracy is complicated. There are also some problems with consistency in regulations and application within the national government as well as between national and local governments. However, there is growing awareness of the necessity for protecting the environment, including the marine environment, and measures such as market-based mechanisms are slowly being introduced for this purpose.

# Introduction

In preparing this review, it is hoped that the first step has been taken to assist participating nations in developing the necessary legislative and technical capability to implement international conventions related to marine pollution. A corollary objective is to assist the countries in the region develop regional policies and agreements with respect to the prevention and mitigation of marine pollution where such regional initiatives are appropriate and necessary.

The GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas has adopted the premise that pollution management in coastal and international waters can be enhanced if countries develop the necessary national legislation and technical capabilities to ratify and implement international conventions and protocols, such as those developed through the International Maritime Organization (IMO) and the United Nations Environment Programme (UNEP), as well as those resulting from the United Nations Convention on the Law of the Sea (UNCLOS).

It is a fact that at present, only a few countries in the region have ratified and are implementing the relevant IMO conventions and other marine pollution agreements. While many of the countries which are party to these conventions and agreements already have legislation in place, many of the laws are either not implemented or need to be revised or replaced for greater effectivity.

In this report, marine pollution legislation and regulations as well as the international conventions ratified and implemented by Cambodia, Indonesia, Malaysia, the Philippines, Thailand, Vietnam, the Republic of Korea, China and Singapore are examined. The nine countries are participating countries of the GEF/UNDP/IMO Regional Programme. Due to language constraints and inaccessibility of legislation, the assessment for Brunei Darussalam and the Democratic People's Republic of Korea could not be completed.

## ORGANISATION OF THE REPORT

The report is organised as follows:

The next section outlines the methodology employed in the review of national legislation. The third section contains the results of the review, starting with a general summation by topic of the national legislation, followed by a statement of implementation status by international instrument. In this part, the Table of National Legislation Relating to Marine Pollution in the East Asian Region and the Matrix on the Requirements of International Conventions have been developed for easy reference and assessment.

The final section contains recommendations for future efforts. The individual country papers, which set out the results of review for each of the nine countries in greater detail and further explain the contents of the two tables found in the third section, are found in the Appendix.

## CONSTRAINTS

This project was completed and the results presented herein with an appreciation of certain limitations. It is basically a desk study, with input from written sources rather than field information.

The project group relied on the material provided to them by contacts composed mostly of members of the Regional Network on the Legal Aspects of Marine Pollution. Where material was unavailable -- mainly due to lack of English translations -- no assessment could be done. Multiplicity of government agencies involved in marine management is common among the subject countries. This means that regulations were spread among these agencies. Many of these were not accessible to the project group. An exception, due to proximity, was Philippine regulations. Thus, the level of legislation studied for each country was unequal.

Relatedly, working with translated material was also a limitation. Only laws from Malaysia, the Philippines and Singapore are originally in English. In Cambodia, Indonesia, Thailand, Vietnam, the Republic of Korea and China, the original texts in the respective national languages are governing.

The subject legislation was constantly changing, perhaps due to the fact that management of the marine environment is a new field, particularly in law. In the duration of the project, many of the subject laws were amended. Most of the country papers were completed as of December 1997. Some of the new laws have not been incorporated in the study because this would have required further extension of the project. Nonetheless, updates on national legislation and ratification of conventions relating to marine pollution have, to the extent possible, been added in the form of editorial footnotes.

Another concern was the very limited access to jurisprudence. One test of the effectiveness of legislation is the application of laws in actual cases. The examination of jurisprudence or case law is an area for further study.

## Review Methodology

In undertaking this study, an innovative methodology was developed and tested, which should be useful to those undertaking similar efforts elsewhere, and in future updating of the progress of countries cited in this report. This approach included four stages of activity, namely collection, collation, analysis/synthesis and summary.

The collection of legislation for the nine countries was accomplished through the research efforts of the consultants and the contributions of members of the Regional Network on Legal Aspects of Marine Pollution.

Collation was achieved in the form of country papers or profiles. A uniform outline for the country papers was first developed, incorporating not only the obvious elements of a study of legislation -- the substantive provisions of the laws -- but also emphasising in the discussion the practical aspects of passing and enforcing legislation and other elements of implementing international conventions. Utilising this format, a Country Paper was prepared, which was composed of eight sections, namely: a) Marine Pollution Situation; b) National Measures on Marine Pollution; c) Legal Regime of Liabilities for Marine Pollution Damages; d) Requirements for Environmental Impact Assessment (EIA) and Actual Practice; e) Requirements for the Use of Market-based Instruments; f) National Legislative/Regulatory Structure and Procedures on Marine Pollution; g) International Conventions and Initiatives; and h) Assessment of the Country's Needs in Capacity Building for Legislation and Ratification of International Conventions on Marine Pollution.

Analysis and synthesis of information was undertaken at two levels, with a view to assessing the comprehensiveness with respect to national issues, as well as completeness with respect to obligations under international conventions.

A table of national legislation classified by subject based on the outline referred to above was prepared. The table provides an overview of the national legislation existing in each country on general and particular subjects related to marine pollution. Table 2 indicates which countries have legislation covering specified categories, while Appendix 2 names the laws which relate to the various categories. The laws identified in this initial tabulation are subjected to closer examination for provisions on specific topics when the main assessment activity begins. The main assessment activity would reveal, for example, how the laws within a country work in relation to each other and their effectivity, matters that cannot be gleaned from Table 2 and Appendix 2. The results of the main assessment activity are

## Table 2. National Legislation Relating to Marine Pollution in the East Asian Region

| Types of Legislation | Country | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Cambodia | China | Indonesia | Malaysia | Philippines | Republic of Korea | Singapore | Thailand | Vietnam |
| Framework Environmental Law | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Other Environmental Legislation | ✓ | | ✓ | | ✓ | ✓ | ✓ | | |
| Environmental Impact Assessment (EIA) | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| General Law on Pollution | | | ✓ | | ✓ | | | | |
| General Law on Marine Pollution | | ✓ | | | ✓ | ✓ | ✓ | | |
| Specific Laws on Marine Pollution | | | | | | | | | |
| Sea-Based Sources | | | ✓ | | ✓ | | | | |
| *Navigation/ maritime/ shipping* | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| *Exclusive Economic Zone* | | | ✓ | ✓ | | | | ✓ | |
| *Continental shelf* | | ✓ | ✓ | ✓ | | | | | ✓ |
| *Fisheries* | | ✓ | ✓ | | ✓ | ✓ | | | |
| Land-Based Sources | | ✓ | | ✓ | | ✓ | ✓ | ✓ | |
| *Water pollution* | | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ |
| *Toxic and hazardous wastes* | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| *Agricultural wastes* | | | ✓ | ✓ | ✓ | | | | |
| *Mineral wastes* | | ✓ | ✓ | | ✓ | | | ✓ | ✓ |
| *Sewage/ Industrial wastes* | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | |
| *Others* | | ✓ | ✓ | | ✓ | ✓ | | | |

embodied in the country papers.

An important tool that was developed in the course of the study was the Matrix on Requirements of International Conventions on Marine Pollution and National Legislation (Appendix 3). Matrices were prepared for 12 international instruments, namely, MARPOL 73/78, CLC 1969, CLC 1992, FUND 1971, FUND 1992, OPRC, the Intervention Convention, the Salvage Convention, the London Convention 1972, the London Convention 1996, the Basel Convention and the GPA. The legal requirements of each of the conventions relating to marine pollution were listed. National laws relating to marine pollution were then compared to the requirements of each of the agreements. Consistency with a particular requirement of an international agreement was noted in the appropriate box, through a description of the applicable legal provision, a direct quotation thereof, or a "yes" or "no" response. When necessary, relevant comments were also included in the matrix. The Matrix on Requirements of International Conventions on Marine Pollution and National Legislation in Appendix 3, is a comprehensive assessment of the state of legislation in the nine countries.

A simplified version of the matrix is shown in Table 3. Listed down on the left-most columns are the basic requirements that a party to MARPOL 73/78 must comply with through the enactment of implementing legislation and the development of appropriate systems. On the right columns are the names of the nine countries subject of the assessment. The first requirement under MARPOL 73/78 is the creation or appointment of an agency with authority over pollution from ships and obligation to perform the functions related thereto. As may be gleaned from the check marks on the first row, all the nine countries, whether parties to MARPOL 73/78 or not, have at least one agency in charge of pollution from ships. Legislation that prohibits discharge of oil, noxious liquid substances, sewage and garbage is the next requirement. All the nine countries also have such type of legislation.

Compliance with the first two requirements does not, however, equate with having a law that gives effect to the requirements of the convention. For instance, none of the nine countries' laws have provisions pertaining to procedures for harmful substances carried by sea in packages. Only half of the countries can be said to have legislation that substantially complies with the requirements of the Convention, as indicated in the fifth row of Table 3.

Sanctions that are adequate in severity to discourage violations must also be enacted. Table 3 reveals that not all countries have such types of sanctions. As the matrix in Appendix 3 will show, sanctions exist for many of these countries, but they are not necessarily adequate. MARPOL 73/78 also requires that the laws relating thereto apply to flag ships wherever they may be. Less than half of the countries exercise extraterritorial jurisdiction over their flag ships. The prohibitions under MARPOL 73/78, as translated into national law, must also apply to all ships that commit violations within a country's jurisdiction. Almost all countries have adopted this principle, as indicated in the ninth row of Table 3.

## Table 3. Matrix on Requirements of MARPOL 73/78 and National Legislation

| | MARPOL 73/78 REQUIREMENTS | Cambodia | China | Indonesia | Malaysia | Philippine | ROK | Singapore | Thailand | Vietnam |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | An agency with authority over pollution from ships and the obligation to perform the functions related thereto. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2 | Legislation which: | | | | | | | | | |
| 3 | - prohibits, according the requirements of the Convention, discharge of oil, noxious liquid substances, sewage, and garbage. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4 | - provides for proper procedures for harmful substances carried by sea in packages; | | | | | | | | | |
| 5 | - gives effect to the requirements of the Convention; | | | ✓ | ✓ | ✓ | | ✓ | | |
| 6 | Provides sanctions which: | | | | | | | | | |
| 7 | -are adequate in severity to discourage violations, | | | ✓ | ✓ | | ✓ | ✓ | | |
| 8 | -apply to all its flag ships wherever they may be, | | ✓ | ✓ | | | ✓ | ✓ | | |
| 9 | -apply to all ships which commit violations within its jurisdiction | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 10 | Systems for certification, survey and inspection of ships, to ensure compliance with the requirements of the Convention as to construction, equipment, and procedures. | | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| 11 | Systems for monitoring and detection: | | | | | ✓ | | | | ✓ |
| 12 | - to detect violations and enforce requirements | | | | | ✓ | ✓ | ✓ | | |
| 13 | - using appropriate and practicable measures of detection and environmental monitoring | | | | | ✓ | | ✓ | | |
| 14 | - including procedures for reporting and accumulation of evidence | | | | | | | | | |
| 15 | Provision for investigation upon receiving evidence of violation by its ship or any casualty occurring to any of its ships producing a deleterious effect upon the environment | | | ✓ | ✓ | ✓ | | ✓ | | |
| 16 | Procedures for taking proceedings | | | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 17 | Measures incorporating all possible efforts to avoid a ship being unduly detained or delayed in connection with inspection, monitoring, and violations. | | | ✓ | | ✓ | | | | |
| 18 | Provision of compensation to be paid to ships so unduly detained or delayed for any loss or damage suffered. | | | | | | | | | |
| 19 | Report by the master or other person in charge of the ship of any incident involving a discharge or probable discharge of oil or noxious liquid substances carried in bulk or harmful substances in packaged form. | | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| 20 | Ensuring the provision of adequate reception facilities in ports | | | ✓ | | ✓ | | ✓ | | |
| 21 | Measures to enforce the reporting and documentation requirements of the Convention. | | | | | ✓ | | ✓ | | |

The next requirement is for a country to have a system for certification, survey and inspection of ships, to ensure compliance with the requirements of MARPOL 73/78 as to construction, equipment and procedures. A considerable number of countries have such a system in place (Row 10). Aside from the certification system, MARPOL 73/78 also requires a system for monitoring and detection to detect violations and enforce requirements, using appropriate and practicable measures of detection and environmental monitoring. Procedures for reporting and accumulation of evidence must also be developed. Few countries have such a system in place, as the dearth of checks on the 11th to 14th rows reveals.

MARPOL 73/78 also requires investigation upon receiving evidence of violation by its ship or any casualty occurring to any of its ships producing a deleterious effect upon the environment. The countries whose laws come closest to the provisions of MARPOL 73/78 have such a system (Row 13). Clear procedures for taking proceedings are also necessary to effectively implement MARPOL 73/78. Not surprisingly, those countries that have a system of investigation also have a well-established procedure for taking proceedings, as may be seen from the 16th row of Table 3.

To balance a State's power, MARPOL 73/78 also requires the institution of measures incorporating all possible efforts to avoid a ship being unduly detained or delayed in connection with inspection, monitoring and violations. Only the Philippines and Indonesia appear to have provisions relating to such measures (Row 17). Those ships that are unduly detained or delayed should be compensated for any loss or damage. No information in this regard could be found, hence, the blank 18th row.

The master or other person in charge of the ship should, by law or regulation, be required to report an incident involving a discharge or probable discharge of oil or noxious liquid substances carried in bulk or harmful substances in packaged form. Those countries that have a system for certification, survey and inspection of ships tend to be the same countries that have clear reporting requirements in case of such incidents (Row 19). Parties to MARPOL 73/78 are also required to have adequate reception facilities in ports. Only three countries have legal provisions relating to such facilities, although it is possible for such facilities to exist despite the absence of such provisions (Row 20). Finally, countries that have ratified MARPOL 73/78 should put in place measures to enforce the reporting and documentation requirements of the Convention. Only two countries appear to have such legislation (Row 21).

The matrix gives a clear objective picture of the status of implementation in each of the countries and was the basis for the follow-on discussion concerning the status of international conventions in the respective countries.

The results of individual assessments were then consolidated into a summary found in the next section. The summary discusses similarities and disparities and evaluates the status of ratification and implementation across the region. The summary also outlines the obstacles to ratification and effective implementation of the marine conventions in the nine countries.

# Summary of National Legislation Assessment

## NATIONAL LEGISLATION ON MARINE POLLUTION IN GENERAL

Following is a summary and synthesis by topic of the national legislation of the nine surveyed countries: Cambodia, China, Indonesia, Malaysia, the Philippines, the Republic of Korea, Singapore, Thailand and Vietnam. The details of the following summary may be found in each of the corresponding sections of the country papers found in Appendix 1.

### *National Measures on Marine Pollution*

The review of the national legislation of the nine countries emphasises both the similarities and the diversity in the region. Most interesting among the countries surveyed is that except for Singapore, they each have framework environmental laws. While these may be diverse in form and approach, each country's law contains most of the basic elements for protection of the environment (except for market-based instruments [MBIs]) that have not been incorporated in all nine countries' legislation). Most the framework laws provide for EIA. The EIA requirements in the Philippines and the Republic of Korea are, however, established under separate laws.

Indonesia, Singapore, Thailand and Vietnam have framework navigation/maritime laws. Indonesia's navigation law has a good chapter on pollution, while the Thailand and Vietnam laws are not very well developed in that respect. Common among the countries except Cambodia are provisions on prevention of sea-based pollution scattered in many pieces of specific legislation. Even Cambodia, probably the exception, has some provisions prohibiting discharge of oil and sewage into the sea in its Harbour Rules for Foreign Ships.

With respect to legislation on land-based sources of pollution, almost all countries have legislation on toxic and hazardous waste. Many of the countries have provisions in sectoral legislation on industrial, agricultural and mineral wastes. Only China, Malaysia and the Republic of Korea have special legislation on sewage. Cambodia's Ministry of Environment has issued a regulation prohibiting the discharge of liquid industrial waste and sewage into the seas, rivers and lakes. Many enumerations on prohibited discharges among the special laws of the Philippines include the word sewage, but there is no specific legislation regarding sewage.

### *Legal Regime of Liabilities for Marine Pollution Damages*

There are more provisions for criminal liability than civil liability in the legislation of the surveyed countries. However, most of the framework environmental laws have at least a general provision on compensation for causing damage to or pollution of the environment.

While Indonesia, Malaysia, the Republic of Korea, Singapore and Vietnam provide for liability of the shipowner for oil pollution damage, only Malaysia, the Republic of Korea and Singapore strictly conform to the requirements of CLC 1969 and FUND 1971. The Indonesian environmental framework law and law on the EEZ provide for strict liability for damage to the marine environment. Malaysia has a shipping ordinance with a detailed chapter on civil liability for oil pollution based on the special law implementing CLC 1969 and FUND 1971. Singapore's Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act of 1998 is the only law that conforms to CLC 1992 and FUND 1992. As to penal and administrative liability as well as civil liability for other types of damage in the marine and coastal environment, most countries have one thing in common: penalties of imprisonment are usually stiff, but most fines are not severe enough to discourage violations. A notable exception is Singapore, with its stringent and sophisticated system of fines.

Except in the case of Singapore, there is not enough information on whether these provisions of law have been effectively utilised to prevent marine pollution.

### *Environmental Impact Assessment*

All the countries have requirements for EIA. Indonesia and the Philippines have the most comprehensive systems. Cambodia, on the other extreme, has just passed its framework law that provides for it generally, and is just beginning to implement a system.

China's EIA system is complemented by the "Tripartite Regime" that requires that facilities for the prevention of pollution of any new construction, reconstruction and extension project be designed, built and put into production at the same time as the major part of the project.

Singapore is the only country that uses EIA not only on the project level, but also at the level of land-use planning. Interestingly, Singapore believes that its present regulatory structure eliminates the need for a mandatory EIA procedure that would otherwise delay the implementation of many industrial projects, giving the Ministry of the Environment the discretion to determine the need for an EIA on a case-to-case basis.

## IMPLEMENTATION MECHANISMS IN GENERAL

### *Use of Market-based Instruments*

With regard to the use of MBIs, the Republic of Korea and Thailand are the most advanced in the region, while Cambodia and Vietnam are only beginning to be exposed to the concept. Indonesia as well, while having the legal authority to impose MBIs, has not yet begun to use it.

The most common forms of MBIs are tax incentives and applications of the "polluter-pays" principle. China imposes a fee for discharges that exceed the set standards and levies fees for the use of natural resources and environmental space. Malaysia imposes an effluent-related fee for major polluting industries such as agro-based industries and toxic and hazardous waste generators and grants tax incentives to them for the reduction of their emissions. Under current EIA regulations, proponents of specified types of projects to be located in the Philippines must set up environmental guarantee and monitoring funds which could potentially enhance private sector responsibility and public sector participation in environmental management. The Philippines is also experimenting on a pollution charge system in a local area, which it is hoped may be expanded to a nation-wide coverage. Thailand uses a combination of incentives (such as forms of tax exemptions) and penalties to promote waste reduction, recycling and reuse. The Republic of Korea uses at least four types of MBIs, i.e., the environmental improvement charge for both stationary and mobile sources of pollution, the discharge due, the deposit-refund system and the expenses for restraint of waste production. Singapore's fines and penalties, while not strictly considered MBIs, are high enough to influence the economic choices of those subject thereto.

China, Malaysia and Thailand are the only countries with a national Environment Fund. In China and Thailand the fund is used to provide loans for waste treatment facilities. In Malaysia, the fund may be used for research on pollution and measures for pollution prevention, response and mitigation. China's Subsidy for Environmental Protection may also be used by the environmental protection agencies for the improvement of their equipment and installations. Cambodia also has an Environment Endowment Fund for environmental protection and natural resource conservation, but this is to be built up from donations rather than fees to be collected by the government.

***Public Participation***

The degree of public participation in marine pollution management processes varies from country to country. In Cambodia, one of the purposes of the Law on Environmental Protection and Natural Resource Management is to encourage and enable the public to participate in environmental protection and natural resource management.

The Constitution, laws and regulations of China encourage the public to participate in environmental protection. In practice, however, NGOs and the private sector have had minimal participation in the field of environmental protection, owing to the perception that only the government and its agencies are responsible for the prevention of pollution and the protection of the environment.

In Indonesia, the Environmental Management Act has a provision on the right of every person to participate in the management of the living resources but this process is not institutionalised. To some extent this is implemented through NGOs, which are, however, scarce in the marine environmental protection field.

In Malaysia, there is no explicit provision of law requiring public participation, but there are provisions in the Constitution and in the EIA provisions of the Environmental Quality Act on a National Land Council, a National Financial Council and a National Council for Local Governments, which may be used to promote public participation.

The Philippines has a national policy (expressed in the Constitution) of consultation with the public in the legislative process. The law on EIA also specifies public consultation. The role of NGOs in the affairs of government has been institutionalised and is the main link between government and people.

In the Republic of Korea, NGOs have played a substantial role in enhancing public awareness and changing local resource utilisation policy. A significant number of these groups may be found in the coastal areas and are potentially important in managing natural resources in a sustainable manner and in enhancing the capacity of local authorities. While many of these groups underwent political suppression by the Government before the 1990s, they are now experiencing a renewal.

Public participation in Singapore is best manifested in its strong awareness and capacity-building programs. The members of the academe provide policy research and extend training to ensure that the shipping community is kept updated regarding the latest developments in the industry.

Thailand's National Environmental Quality Act provides for the right of the public to participate and to be informed. However, the requirement to register with the Ministry of Science, Technology and Environment discourages many NGOs from requesting government assistance. Moreover, there are presently only a few NGOs in the field of marine environment.

In Vietnam, the Constitution provides for citizens' participation. This is implemented in the legislative process through which comments from the public may be solicited on bills and draft ordinances.

## NATIONAL LEGISLATION AND REQUIREMENTS OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

Appendix 3, the Matrix on the Requirements of International Conventions on Marine Pollution shows that while there is a rising number of ratifications, there is still a relatively poor record of implementation among the countries surveyed, except in the case of Singapore.

In many cases, there is similarity between the provisions in the national legislation on the same topic as a particular requirement of an international convention, but the laws do not completely conform to the requirements of the convention.

Below is a summary and synthesis of the results of the study on each of the global instruments relative to the adequacy of national legislation. The details of the discussion may be found in the corresponding sections of the Country Papers found in Appendix 1.

***International Conventions and Initiatives: Specific Instruments Implemented***

It is noted that among the nine countries, only Cambodia and Thailand have not ratified the UNCLOS. Thailand has been considering ratification of the Convention. Thus the majority of the countries has accepted the framework for management of pollution provided by Part XII of the Convention. The IMO conventions implement the general provisions of Part XII. It is for precisely this reason that Singapore has not passed legislation specifically to implement the provision of UNCLOS, believing that it is sufficient to have passed implementing legislation for the conventions recognised by UNCLOS.

**MARPOL 73/78**

All the surveyed countries except Cambodia implement MARPOL 73/78 to a certain extent. Cambodia is the only country that has ratified all the annexes of MARPOL 73/78. China's major laws and regulations relating to the control of marine pollution from vessels were issued before China's ratification of the Annexes I, II, III and V of MARPOL 73/78. It is thus necessary to review and add some crucial clauses to these laws and regulations to ensure their consistency with Annexes III and V of MARPOL 73/78.

Indonesia's framework navigation law (1992) contains many elements of MARPOL 73/78 framed in general provisions. The regulations containing the implementation details are not available, although it is known that Indonesia implements the Convention.

Malaysia acceded to MARPOL 73/78 (Annexes I, II and V) only in 1997 and implementing legislation is not yet ready. For the present, only the general provisions are found in Malaysian environmental laws.

The country with the most number of laws consistent with MARPOL 73/78 is the Philippines, which is ironic, because the Philippines has not yet ratified the Convention. However, many of the provisions of these national regulations are not enforced. Indonesia ratified Annexes I and II in 1986.

The Republic of Korea acceded to MARPOL 73/78 and its Annexes I and II and 1984 and Annexes III and V in 1996. It incorporated most provisions of Annexes III and V of the Treaty into its Prevention of Marine Pollution Act.

While Singapore has acceded only to Annexes I to III of MARPOL 73/78, its Prevention of Pollution of the Sea Act of 1990 also implements Annex V thereof. It is also planning to ratify Annex V in 1999.[1]

Thailand has not yet ratified MARPOL 73/78, but it has been getting ready to do so for a number of years now. Vietnam is also currently developing the national legislation to implement Annexes I and II of the Convention.

**CLC/FUND**

Cambodia acceded to CLC 1969 in 1994 but has not adopted any implementing measures. China acceded to CLC 1969 in 1977 and its 1976 Protocol in 1986.[2] The regulations on compensation for pollution damage do not, however, fully implement CLC. Moreover, China is not a party to FUND 1971. Indonesia ratified CLC 1969 and FUND 1971 in 1978, but the implementation is not framed in the national legislation.[3] This is unlike Malaysia which, acceding to the same conventions in 1995, has a very clear implementing law (Act 515, 1994). The Philippines acceded to CLC 1992 and FUND 1992 only in 1997, and implementing legislation is not yet ready. The Republic of Korea acceded to CLC 1969 and FUND 1971 in 1979 and 1993, respectively, and enacted the 1992 Oil Pollution Damage Compensation Security Act to implement these two conventions. It subsequently acceded to CLC 1992 and FUND 1992 in 1997. Thailand and Vietnam have yet to accede to CLC and FUND. Singapore is a party to CLC 1969 and its 1992 Protocol. It did not ratify the original FUND Convention but acceded to FUND 1992. The Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act of 1998 implements CLC 1992 and FUND 1992. If there are any equivalent provisions in Thai law, these were not available for inclusion in the Thai country report. While Vietnam has provisions of law on liability and compensation, these conform to traditional maritime law rather than the regime under CLC and FUND.

**OPRC 1990**

Among the surveyed countries, only Malaysia has ratified OPRC 1990.[4] Implementing legislation is being developed. Singapore is preparing amendments to existing legislation in support of OPRC 1990 to make way for its plan to ratify the convention in

---

[1] *Singapore acceded to Annex V of MARPOL 73/78 in 1999.*

[2] *China acceded to CLC 1992 in 1999, thereby denouncing CLC 1969 in accordance with the Protocol.*

[3] *Indonesia ratified CLC 1992 in 1999 and denounced FUND 1971 in the same year.*

[4] *This statement was true as of 1997, when most of the Country Papers were completed. Subsequently, however, China acceded to OPRC in 1998 and Singapore followed suit in 1999.*

1999. It must be noted that region-wise, the ASEAN to which these countries belong, has an Oil Spill Response Action Plan (OSRAP) that promotes regional cooperation in combating oil spills. Many of the ASEAN countries have developed national oil contingency plans under OSRAP, although these are not reflected in their national legislation.

**Intervention/Salvage**

Only China has ratified both the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (the Intervention Convention), including its 1973 Protocol and the Salvage Convention.

China's legislation concerning salvage and dealing with marine casualty focuses on technical requirements, but has no provision directly requiring the protection from marine pollution when salvage has been undertaken. Additionally, there are no definite provisions concerning measures for intervention of threatened pollution damage to seas outside its jurisdiction in the laws or regulations concerned. There does not appear to be national legislation in any of the other countries implementing the environmental provisions of the Salvage Convention.

**London Convention**

Only China, the Philippines and the Republic of Korea among the nine countries have ratified the London Convention 1972. None of them has ratified the 1996 Protocol. In the case of China, the Regulations Concerning the Dumping of Wastes at Sea were issued in 1985, the same year that China ratified the London Convention 1972. Several other laws and regulations contribute to the effective implementation of the Convention. The Philippines implements the Convention generally in two laws on pollution and specifically by several regulations. The generality of such legal instruments, however, makes compliance with and enforcement of their provisions difficult. Information on how the Republic of Korea implements the London Convention 1972 is not clear or complete. The provisions of the Marine Pollution Act pertaining to ocean dumping are very general and do not adequately reflect the requirements under the London Convention 1972. All the other countries have general laws forbidding dumping and discharge of various polluting substances into marine waters.

The requirements of the 1996 Protocol to the London Convention or its principles have not been adopted into national legislation of the surveyed countries as yet.

**Basel Convention**

As mentioned above, all of the nine countries have legal provisions aimed at the proper management and disposal of toxic and hazardous wastes, but with different levels of thoroughness. Regulations on the transboundary movement of hazardous wastes and their

disposition are scattered in various administrative rules and circulars which were issued prior to China's ratification of the Basel Convention which must thus be updated to conform to its obligations under the Convention. Indonesia, Malaysia, the Philippines, the Republic of Korea and Singapore have ratified the Basel Convention, and each of their statutes substantially complies with the Convention's requirements. This might also be said of Thailand, which has a law on hazardous substances. Vietnam has a number of provisions in the environmental protection law, while Cambodia has a very general provision.

An ASEAN Cooperation Plan on Transboundary Pollution was adopted in 1995 in Kuala Lumpur. The Plan encourages ASEAN countries to accede to the Basel Convention, promotes information exchange between ASEAN countries regarding hazardous wastes and foreshadows the development of national legislation with respect to such matters as liability and compensation issues relating to movements of hazardous waste.

### Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

It is probably safe to say that none of the surveyed countries has embarked on Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA). China comes closest to fulfilling the requirement of the GPA, with its many laws and regulations dealing with land-based sources of marine pollution. While many of their environmental laws already have provisions on the different types of wastes generated on land, they have not yet been unified into the co-ordinated approach recommended by the GPA.

#### *Reasons for Non-Ratification, Non-Implementation*

Following is a summary and synthesis of the obstacles to ratification and effective implementation of the relevant international conventions in the nine countries.

**Lack of resources.** The most common block to ratification and implementation of international conventions is the lack of resources. Aside from the Republic of Korea and Singapore, all the subject countries are developing countries whose budgets have to be allocated among many competing interests. Marine pollution typically has low priority, and thus the appropriate human and technical resources are not affordable. This leads to a very limited capacity to collect the information necessary for the formulation of policy, to translate policy into implementing measures and to effectively enforce the measures.

In this matter, the situation in Cambodia regarding human resources is more acute. Because of the country's recent history, there is a shortage of managerial and technical staff. However, for the same reason, the problem of marine pollution is not yet as extreme in Cambodia, and therefore has a lower priority than in the other countries.

**Administration issues.** A common situation among the surveyed countries is the diffusion of authority over marine-related activities to many agencies. The first problem associated with this is the unclear division of functions leading to conflicts due to overlapping jurisdiction or, on the other extreme, the absence of accountability of any agency. This was noted in China, Indonesia, the Philippines, Vietnam, and to a certain extent in Malaysia.

Another characteristic of the situation is little or no coordination among agencies, resulting in piecemeal, duplicate or even conflicting efforts.

In some countries, e.g., Vietnam, it was observed that the relationship between national and local governments might also be characterised by turf conflicts.

In this connection, the Republic of Korea is an interesting case study. Through the creation of the MOMAF in August 1996, marine-related authority previously spread among some 10 government agencies has been lodged in one agency, which has been given the primary responsibility for management of the marine environment and activities therein.

**Fragmented legislation.** As mentioned elsewhere, in most of the countries' legislation, individual provisions on marine pollution are found in many separate laws. Piecemeal passage of laws is not a problem per se, provided that it is guided by a coherent overall policy. However, in the case of these countries, the effort -- often futile -- to co-ordinate pieces of legislation is left to the implementing agencies after passage of the law rather than exercised as part of the drafting process.

In some countries, legislation does not provide for enforcement measures such as documentation, reporting, monitoring and the use of MBIs. The laws may be heavy with penalties, but still end up ineffective because the implementing agencies are not sufficiently equipped with enforcement authority or strategies.

The Republic of Korea's attempt to establish an ICM plan at the national level will be an interesting showcase for co-ordinated implementation of international conventions and national legislation at the national level.

**Lack of awareness.** The above problems may all be traced to the underlying cause, which is the lack of awareness regarding the causes of marine pollution and the means which have been developed to control them. Except for Singapore, these countries are not traditionally active at the IMO, and do not participate in the formulation of the international conventions on marine pollution. Thus, there is little knowledge and no sense of commitment to adopting the initiatives made.

This has begun to change due to awareness-building efforts in the region, and

especially due to the increasing visibility and urgency of the problem of marine pollution. Such is the case, for instance, in the Republic of Korea, where increased national wealth and enhanced awareness regarding the need for environmental protection have led to an accelerated response to addressing the environmental situation. However, the process of ratification and implementation is still slow.

In the end, it is the level of political will which will determine the extent of the countries' ratification and implementation. The lack of resources and other common problems are not insurmountable obstacles if the country is determined to deal with the problem of marine pollution. It may be said that the level of political will among the surveyed countries, very low not too many years ago, has been rising steadily.

## Conclusions and Recommendations

A main feature of the East Asian region is its extensive marine waters, and the high level of biodiversity found in them. Preservation of the marine environment is inextricably linked to the survival of those who live in the region.

Through the development of the international instruments on marine pollution, the IMO, UNEP and other international organisations have done much of the preparatory work to combat the degradation of the marine environment. The states may move on from there by adopting the standards to their national systems.

The nine countries have begun to take the first steps towards knowing more about the international conventions on marine pollution and their national applications. But more effort is needed to go beyond paper and to actually create favourable effects on the marine pollution situation.

Like ratification, the passing of national legislation is an extended process. A law is usually passed long after its need is recognised. In this sense, existing national legislation reflects national developments only to a certain extent. But legislation is a necessary tool for achieving goals. Thus, an effort to update national legislation and frame them in such a way as to be effectively enforced is essential.

Giving effect to the legislation and applying the standards for dealing with marine pollution is even more difficult work. However, strategies are constantly being developed. The learning process should include not just the application of the international instruments in the national legislation but also in the means of enforcing these laws.

Political will comes not only from the policy level but also from the administrative level, as well as from the general public. It is the stakeholders and civil servants at the operational level that can most effectively influence the policy-makers into action by providing the rationale and the solutions.

It is recommended that future efforts concentrate on the following:

Heightening of **awareness-building** activities at different levels, to reach all levels of bureaucracy and the general public. This includes efforts to participate in the international standard-setting process, at the IMO or other forums. This would allow the countries to move from the position of being fed with ready-made standards to the position of continuing a process in which they participated from the start. Efforts at collection of relevant information should begin with first understanding what information is needed, and then co-ordinating efforts.

The **clear designation of authorities** and delineation of their functions is a very important factor in implementation where there are multiple implementing agencies. The other part of this factor is the **co-ordination of efforts** at both policy and operational levels. The mechanisms for co-ordination must be institutionalised.

Much of the success in implementation of international conventions depends upon the **use of effective implementation strategies**. An effort to learn and apply them is important. A prime example is decentralisation, particularly to local governments. There is a tendency among the surveyed countries to concentrate efforts at the central government level. Common sense shows that sharing some implementing authority with the local governments is very effective. Adequate technical assistance and capacity-building must, however, be provided to the local government to ensure that they will be ready to take on such tasks.

Down the line is enforcement, the day to day operations of the marine administration. It has been observed that unenforced laws are worse than no laws at all, because they breed contempt for the law and its subject. There are **enforcement measures** short of policing which are effective despite the lack of resources. Many of these, such as reporting and inspection, are built into the international conventions. Their adoption and use is a big determining factor for success or failure of efforts.

In undertaking efforts to manage marine pollution, a move from purely reactive measures to a more **pro-active approach** would provide a psychological edge by giving a sense of getting ahead in the fight against pollution rather than forever lagging behind. This approach, which anticipates problems before they happen, is built into the international conventions on marine pollution.

# Appendix 1: Country Papers

# Cambodia

## THE MARINE POLLUTION SITUATION IN CAMBODIA

Cambodia has approximately 435 km of coastline that lies on the Gulf of Thailand, extending from the Thai border to the Vietnamese border. The Cambodian coastline consists mainly of a large estuary in the northern part of Koh Kong province and the large bay of Kampong Som. Two provinces, Kampot and Koh Kong, and two autonomous cities, Sihanoukville and the resort city of Kep, lie along the coast.

The total population of the coastal provinces and cities was approximately 840,000 in 1997. Of this number, around 575,000 live in Kampot province, 132,000 live in Sihanoukville, 105,000 live in Koh Kong province, and the rest in the city of Kep. Koh Kong province has a low population density of only nine persons per sq. km, the majority of whom live away from the coast. Hence, little domestic sewage is discharged into the sea in this province. Kampot, Kep and Sihanoukville, however, have population densities of 115, 192 and 340 persons per sq. km, respectively, thus making pollution from municipal sewage something of a problem. For instance, domestic sewage in Sihanoukville is discharged directly into the sea without prior treatment.

Sewerage systems are lacking in Cambodia. Large cities are partially serviced by combined sewage and storm water collection systems. Over the past two decades there has been little maintenance work done on the combined systems, most of which are damaged. In Phnom Penh, for example, about 80% of the piping are damaged.

There is no sewage treatment plant in the coastal provinces and cities. The sewage of these centres has been discharged through the drainage system, to open canals or streams, and then to coastal waters without treatment, contributing to pollution of the seawater.

The sorry state of sewage management in Cambodia and the lack of proper sanitation facilities, particularly in the rural areas, have health and environmental implications.

The government of Cambodia recognises that the management of solid waste in urban centres of the coastal area is extremely poor. Although these centres are not industrialised and thus do not as yet have high consumption levels, all urban areas have significant waste disposal problems. Only half of the solid waste in the urban areas is collected and transported to open dumpsites where they are burned. The remaining 50% of the waste are disposed of directly into the sewerage system or the sea. At present, the

marine dumping by ship has been prohibited. Although not much solid waste is generated, the uncontrolled dumping of wastes into the waters poses a threat to the health of the people and to the environment.

About 12% of the total land area of the coastal provinces are used for agriculture and these areas are located far from the coast. Farmers use relatively few chemical pesticides and fertilisers. Hence, although Cambodia's economy is predominantly agricultural, agricultural run-off is not considered to be a significant source of marine pollution.

Shrimp farming is an environmental concern in Cambodia. The number of shrimp farms has increased rapidly since mid-1991. In Kampot province alone, there are already about 1000 hectares of shrimp farms, principally established through mangrove conversion. Untreated wastes from shrimp farms are discharged directly into the sea. In order to prevent the marine pollution caused by shrimp farming, the Ministry of Environment has issued an order prohibiting the construction of new shrimp farms.

During the last two decades, there has been little industrial activity and development in the coastal areas and the marine zone. Because of the low level of industrial development in Cambodia, marine pollution from industrial wastes is not a problem. In Kampot province, there are only two factories, one a cement factory and the other producing phosphate fertiliser. In Sihanoukville, there are also two factories, one a beer brewery and the other an oil refinery. The liquid wastes from these factories are being discharged into the sea without treatment. Effluent standards for industrial wastewater have not yet been developed in Cambodia.

In order to improve the economic development of the country the government has set up a policy to encourage the development of agro-industrial enterprises and the production of fertiliser petroleum and heavy construction and mechanical equipment. With the recent announcement by the government of plans to establish an industrial zone with an area of 900 hectares and an export processing zone with an area of 260 hectares in Sihanoukville, however, the problem of marine pollution from industrial waste disposal may become considerable in the near future.

Sources of hazardous waste in Cambodia include acid and heavy metals from vehicle batteries, vehicle crankcase oil, diesel fuel and gasoline, pesticides and pesticide containers, solvents and other metal cleaners. While quantitative surveys of hazardous waste have yet to be made, the total annual hazardous waste generated in Cambodia is estimated to be 35,000 to 75,000 tonnes per year. Cambodia has no specialised treatment facilities or disposal sites for hazardous waste.

As for offshore exploration, Cambodia's portion of the Gulf of Thailand is divided into 10 petroleum blocks. The government of Cambodia has already entered into

contracts permitting companies to conduct offshore exploration for gas and oil. The contracts contain a clause prohibiting waste disposal into the sea. These companies have demanded that the government provide environmental inspectors to evaluate, monitor and control environmental problems. Unfortunately, the country currently lacks local experts in the field of environmental assessment.

In the Cambodia coastal area, there are presently eight minor harbours. Four of these harbours are located in the coastline of Koh Kong province, two are located in Sihanoukville's estuary, and two are located in the coastline of Kampot province. These harbours are used only for transit or shipping goods among the provinces of the Cambodian coastline and for docking of the fishing boats. Some of the harbours can accommodate vessels loaded up to 15 tons. The provincial and town authorities have expressed a desire to deepen some harbours so that ships of up to 30 tonnes can access the harbours.

There is only one international port, which is located in Sihanoukville. This is Cambodia's only deep-water marine port, which was built in 1956 with a total capacity of 1.2 million tonnes per year. This port does not have proper facilities for wastewater discharge and for responding to dangers that may occur during handling operations. The port plays a key role in handling the import of goods for reconstruction and development of the country. Since it is anticipated that growth in imports and exports at Sihanoukville port will result in the maximum capacity of this port being reached in the year 2000, new wharves and access channels have been built.

## NATIONAL MEASURES ON MARINE POLLUTION

### *Legislation and Regulations on Marine Pollution in General*

Issuances regarding marine territory from the old communist regime continue to be valid despite the change in government.[1] In a statement issued on 15 January 1978, the Spokesperson of the Ministry of Foreign Affairs of the People's Republic of Kampuchea reaffirmed that the State has exclusive sovereign rights for the purpose of exploring and exploiting, conserving and managing all the natural resources of the "superjacent waters, the bed and the subsoil of its exclusive economic zone situated beyond its territorial sea and extending up to 200 nautical miles from the baselines."

Article 5 of the Decree of the Council of State (13 July 1982) defines the EEZ of the People's Republic of Kampuchea (PRK) as:

---

[1] *This is provided for in Chapter XIV Transitional Provisions of the Constitution, Article 139 of which provides:*

> *"Laws and standard documents in Cambodia that safeguard State properties, rights, freedom and legal private properties, and are in conformity with the national interests, continue to be effective until altered or abrogated by newer texts, except those provisions that are contrary to the spirit of this Constitution."*

> "a maritime zone located beyond its territorial waters and adjacent to the latter. This zone extends to 200 nautical miles measured from the baseline used to measure the width of the territorial waters of the PRK."

Article 5 also states that in its EEZ, the PRK has exclusive jurisdiction regarding the setting up and use of installations, devices and artificial islands and marine research. Likewise, it has jurisdiction over the preservation of the marine environment and the control of pollution.

Cambodia also claims exclusive sovereign rights over its continental shelf, "comprising the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory", for the purpose of exploring and exploiting, conserving and managing all the natural resources of the seabed and subsoil. (Statement of the Spokesman of the Ministry of Foreign Affairs, 15 January 1978.) Article 6 of the Decree of the Council of State provides that all activities carried out by foreigners on the continental shelf, for whatever end, must have the authorisation or agreement of the government and shall conform with the laws and regulations of Cambodia.

Environmental protection is provided for in the Constitution of Cambodia. Article 59 states that:

> "the State protects the environment and balances of abundant natural resources and establishes a precise plan of management of land, water, air, wind geology, ecological system, mines, energy, petrol, and gas, rocks and sand, gems, forests and forestal products, wildlife, fish, and aquatic resources."

In December 1996, the National Assembly of Cambodia passed the Law on Environmental Protection and Natural Resource Management. This law provides a framework for subsequent sectoral laws, decrees, sub-decrees and regulations for environmental protection and natural resource management, including environmental action planning, park/protected areas management, environmental impact evaluation, pollution control, solid waste management, public participation and monitoring/inspection. The law also provides for the creation of an Environment Endowment Fund for environmental protection and natural resource conservation in Cambodia (Article 19).

The Ministry of Environment has recently completed three final Draft Sub-Decrees on water pollution control, solid waste management and EIA.

The draft Sub-Decree on Water Pollution Control is a framework regulation generally prescribing the control of effluent discharge from any source of pollution,

including transport facilities, into public water areas. According to the Draft Sub-Decree, Cambodia's sea is included in the public water areas. The provisions of the draft Sub-Decree on water pollution control generally specify requirements for different sources of pollution. The draft Sub-Decree states that sources of pollution shall have a discharge license from the Ministry of Environment before discharging their effluent. These sources of pollution do not, however, include ships.

According to Cambodia's environmental protection law, the Ministry of Environment will develop the marine pollution sub-decree, but to meet this objective the Ministry of Environment needs technical assistance especially from the IMO, the United Nations Environment Programme, and other international organisations.

***Legislation and Regulations on Marine Pollution from Vessels***

Although Cambodia has acceded to MARPOL 73/78 and its annexes, implementing laws and regulations for the Convention have not yet been developed. At present, to prevent marine pollution from ships, the Port Authority of the Ministry of Public Works and Transport applies Sub-Decree No. 11 on Harbour Rules for Foreign Ships (5 March 1983), especially Article 13. Article 13 prohibits foreign ships that moor at Cambodia's ports from discharging sewage or used oil and from dumping any waste into the water or on the dock. A ship captain wishing to release waste from his ship or to discharge sewage or used oil shall ask the navigation office to arrange for such disposal, and the captain shall bear the cost of such measures. Unfortunately, as this Sub-Decree does not provide sanctions for violations, it is not always followed. Moreover, this regulation applies only to marine pollution from foreign ships mooring at Cambodian ports.

Due to the lack of marine pollution regulation on the control of activities from ships that are likely to have a significant impact on marine water, water quality monitoring could not be conducted.

There are also existing regulations concerning marine affairs, such as Royal Decree No. 902 on the Registration of Vessels.

The Decree established the Ministry of Public Works and Transport in 1994. The Decree deals with the registration of ships, mainly foreign-owned ships flying the Cambodian flag and operating internationally. The certification of registry, transfer of ownership of the vessel, the nationality of the ship, and other registration procedures are likewise the subject of the Decree. The most important provision on ownership may be found in Article 4, which requires that foreign shipping companies that wish to operate in Cambodia which enter into a joint venture with Cambodians must own less than 51% of the capital and have a Cambodia-based office. Furthermore, the Decree requires all merchant ships, fishing boats and cruise ships to have licenses for their operation.

However, foreign ships with less than 100 dead-weight tons are not permitted for registration.

The Sub-Decree on Cargo Handling, Transport, Received-Delivery, and maintenance in Ports applies to the operations of all ports in Cambodia.

***Legislation and Regulations on Marine Pollution from Land-Based Sources***

The Ministry of Environment has issued a regulation prohibiting the discharge of liquid industrial waste and sewage into the sea, rivers and lakes (Prakas No. 992, 23 May 1994). Regulation to control solid waste treatment and disposal is not yet in place.

The Law of Land Management of Urbanisation and Construction (1993) regulates the environmental aspects of urban development and construction and stipulates land-use plans for the provinces and a licensing system for construction.

***Legislation and Regulations on Marine Pollution from Seabed Activities***

There are no specific regulations governing seabed activities. However, the contracts entered into by the government of Cambodia and offshore exploration companies contain a clause prohibiting waste disposal into the sea.

***Legislation and Regulations on Marine Pollution from Other Sources***

The Ministry of Environment has rejected a proposal to import hazardous waste and has confirmed its position that hazardous waste should not be imported into Cambodia as long as there is no effective management and control system for waste in place.

At present the Ministry of Environment has completed the Draft Sub-Decree on Solid Waste Management. The sub-decree is the framework regulation dealing with all aspects of environmentally safe management of all types of solid waste, including the handling, storage, processing, collection, transport, brokerage, recovery and disposal of solid wastes. It is expected to be adopted by the government soon.

## LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGE

There is a lack of a legal regime of liabilities for marine pollution damages in Cambodia. However, as regards offshore exploration, the Ministry of Environment has strongly recommended that all contracts entered into between the Royal Government of Cambodia and oil and gas exploration companies include a provision that such companies shall be responsible for and shall bear the cost of clean up of any spills resulting from their activities.

## REQUIREMENTS FOR EIA AND ACTUAL PRACTICE

There is no EIA law in Cambodia. The 1996 Law on Environmental Protection and Natural Resource Management, however, contains a chapter on EIA. Chapter 3, Article 8 of this law requires an EIA of proposed projects and activities, whether public or private, before these are submitted to the Royal Government for decision. Existing activities whose environmental impact has not been assessed must also undergo the EIA process. The kind of projects which will require an EIA and the manner of conducting the assessment shall be determined by a sub-decree following a proposal of the Ministry of Environment. Article 9 provides that all investment project applications and all proposed State projects shall likewise be subject to an initial EIA or to an EIA as specified in the sub-decree to be enacted.

The pending National Mining Law and Mineral Agreement will contain provisions requiring the preparation of an environment protection plan prior to mining activities and the implementation of the plan during operation. An Environmental Impact Evaluation regulation, which may eventually be in the form of a law, decree or sub-decree, is currently being developed.

## THE USE OF MARKET-BASED INSTRUMENTS

So far, Cambodia is not yet utilising any MBIs in the protection of the environment.

## NATIONAL LEGISLATIVE/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

### *Legislative Mechanisms*

Cambodia is a constitutional monarchy. Legislative power is vested in the 120-member National Assembly, the members of whom are elected for a term of five years by universal adult suffrage. Executive power is held by the Cabinet, headed by the Prime Minister who is appointed by the King upon the recommendation of the Chairman of the National Assembly from among the representatives of the winning party. For local administration, the Kingdom of Cambodia is divided into provinces, municipalities, *Khan*, *Khum* and *Sangkat*.

### *Distribution of Mandates and Obligations*

The Ministry of Environment is responsible for environmental action plans, parks and protected areas management, EIA, pollution control, and monitoring and inspection.

### *Role of Non-Government Organisations (NGOs) and Public Participation*

One of the declared purposes of the Law on Environmental Protection and Natural Resource Management is to encourage and enable the public to participate in environmental protection and natural resource management. Towards this end, Article 16 of the law requires the Ministry of Environment, following a request from the public, to provide information on its activities, and to encourage public participation in environmental protection and natural resource management. The procedures for public participation and access to information on environmental protection and natural resource management shall be determined by Sub-Decree following a proposal of the Ministry of Environment (Article 17).

## INTERNATIONAL CONVENTIONS AND INITIATIVES

Cambodia has ratified MARPOL 73/78 and its Annexes I to V as well as CLC 1969, but has not yet implemented either of these.

### *Reasons for Non-ratification or Non-implementation (Identification of Constraints)*

Because of the political unrest in her recent history, there has been little industrial development in Cambodia and, as a consequence, not much marine pollution. The Cambodian government's present priorities are the rebuilding of the country and improvement of her economy, and not environmental concerns. Moreover, if the government would have any pressing environmental concerns, these are likely to be concentrated on the terrestrial environment, not on the marine environment, as it was the land and the forests that suffered the most damage during the years of war and strife in Cambodia.

In general, the following factors are perceived as hampering environmental management in Cambodia: (1) lack of quantitative data on environmental parameters; (2) lack of security in many places; (3) lack of enabling legislation and regulations; (4) limited capability for enforcement of resource laws and pollution control laws; and (5) shortage of managerial and technical staff in this field.

There is a lack of national policy on water and sanitation, and no central authority exists to implement water and environmental sanitation projects. Technology for management of liquid, airborne and solid wastes is largely absent throughout the country. Waste management personnel have little knowledge or skill in developing and implementing waste management strategies.

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

Due to her recent history, Cambodia lacks the human resource capacity to develop environmental legislation. For example, oil exploration companies have demanded that the government provide environmental inspectors to evaluate, monitor and control environmental problems, but the country lacks local experts in the field of environmental assessment.

The Ministry of Environment needs the co-operation and assistance of international agencies. At present, the United Nations Development Programme's (UNDP) Environmental Technical Advisory Project and the European Union (EU) are assisting the Ministry in developing appropriate additional policies and legal instruments that may be required to implement the national environmental protection law recently enacted by the National Assembly.

The Ministry of Environment developed the first general framework for environmental education in Cambodia in 1993, in co-operation with UNDP's Cambodian Environmental Advisory Team, the EU, the Asian Development Bank (ADB), and other international organisations. The framework identifies health, pollution, sustainable use of resources, conservation and biodiversity as priorities. Four lectures on general environmental issues have been organised for Ministry of Environment staff.

The *"First State of the Environment Report"* prepared by the Ministry of Environment in 1994 identified priorities for management in the following areas, among others: (1) inland/marine fisheries habitat and population degradation from water resource management activities, sedimentation and habitat destruction; (2) coastal zone degradation from inadequate land use planning/zoning, and potential impacts from petroleum exploration and exploitation; and (3) inadequate sanitation practices in urban areas including solid waste and sewage.

The report identified the following needs for institutional capacity building in waste management and marine pollution prevention: (1) development of an EIA process; (2) operation of an integrated information management system for resource and pollution data; (3) background monitoring of air, surface water and groundwater; (4) identification and development of laboratory support service at the Ministry of Environment, including quality control and certification; (5) development of a permit system for significant waste discharges to air and water; (6) initiation of enforcement actions against illegal resource exploiters, waste permit violators, and other polluters; and (7) expansion of environmental education and awareness.

The following urgent actions to improve the waste management situation were proposed: (1) preparation of education programmes on recycling and proper ways of disposing of wastes; (2) provision of waste containers for public use to reduce the extent of uncontrolled waste disposal; (3) provision of garbage trucks; (4) improved waste

management by construction companies; (5) adoption of safety standards for landfill sites to protect the local people; (6) establishment of a system for internal recycling of plastics, papers, glass, metals and foam, and the imposition of a relatively low tax on recycled products; (7) regulation of waste disposal and collection for domestic, handiwork and factory waste; and (8) promotion of private operators for cleaning and disposal of waste for private land owners.

Cambodia is in the enviable position of having relatively few environmental problems at present and has the option to take a pro-active approach to her environmental policies. A comprehensive environmental strategy setting policies and standards will be needed to protect and maintain the environment, and the personnel of the Ministry of Environment will need to acquire technical expertise for the formulation of standards.

# China

## THE MARINE POLLUTION SITUATION IN CHINA

China is a continental and a coastal state composed of 9,600,000 sq. km of mainland area, approximately 6,000 islands and 18,000 km of mainland coastline. China is located in the west of the Pacific and surrounded by four sea areas, namely the Yellow Sea, the East China Sea, the South China Sea and the western part of the Pacific Ocean. In the Northeast portion is Bohai, which is a historic bay of China. Out of the total 33 local administrative components of China, 12 provinces and municipalities that fall directly under the central government are located in the eastern coastal area of China. This area constitutes a significant part of China due to its rapidly developing economy.

Among the administrative components of China, two provinces, Hainan and Taiwan, consist of islands, in addition to the special administrative zone, Hongkong. The mainland coastal region supports 40% of the country's whole population of 1,300,000,000 and contributes more than 60% to the national GNP. Along with the rapid economic development, the coastal region faces severe pressure from population growth. As a result, the environment of the coastal region degenerates.

The status of marine pollution in China can be generally described as follows:

1) The environmental quality of the coastal zones is declining and the extent of pollution is growing each year;

2) Water quality in areas outside the coastal zone is good on the whole;

3) Pollution by heavy metals has been controlled but pollution caused by organic matter and nutritional salt is worsening;

4) The frequency of emergent pollution events is increasing; and

5) Chronic damage of pollution is manifest.

The major source of marine pollution in China is land-based pollutants from the discharge of industrial, agricultural and municipal sources. According to preliminary estimates, there are nearly 1,000 million tonnes of land-based sewage with harmful

substances, such as petroleum, organic matter and heavy metal discharged annually into the seas of China.

The second main source of pollutants is ships from which oil, sewage and garbage are discharged. Oil spills are likewise sources of marine pollution.

Other activities in the seas and coastal zones such as aquaculture are the third major source of marine pollution in some areas.

Consequently, prevention and management of marine pollution is of great significance not only for the sustainable economic and social development of the coastal region but also of the country as a whole. In response to the challenge of the degeneration of the marine environment, many measures have been taken in China since 1970.

For instance, China has ratified and signed 12 international instruments concerning marine environmental protection. This makes China ahead of the other countries in the East Asian region. In addition, China has adopted legal and administrative measures to implement international conventions that it ratified, not only at the national level but also at the local level.

At the national level, a special legal department relating to marine affairs has been established in China. Legislation specifically on marine pollution is one of the important outputs of this system (See Section Two of this paper). In terms of local legislation on marine pollution, the local practice in Xiamen City in Fujian Province provides a good example. To implement national legislation on marine environmental protection, Fujian Province, one of the southern coastal provinces of China, has enacted its own local regulations on marine environmental protection according to its particular relevant economic, environmental and other circumstances. The *Regulations on Environmental Protection of Fujian Province (1995)* were issued by the Local People's Congress of Fujian Province, consistent with the provisions of *The Marine Environmental Protection Law of PRC*, which is a national law. As a direct consequence, Xiamen City, one of the administrative divisions of Fujian Province, issued its own local legislation. *The Regulations on Environmental Protection of Xiamen City (1994)* and *The Regulations on Marine Environmental Protection of Xiamen City (1997)* were issued by Xiamen's Local People's Congress in order to implement provisions both of national legislation and of the province's legislation related to the seas under its administration.

## NATIONAL MEASURES ON MARINE POLLUTION

### *Legislation and Regulations on Marine Pollution in General*

In China, legislation on marine environmental protection includes laws, administrative regulations and administrative rules. From the 1970s up to the present, the legal system of marine environmental protection has begun to take shape under the framework of legislation on general environmental protection. The legal system can be divided into the following five areas:

#### The Constitution

#### The Constitution of the People's Republic of the China (1982)

The articles concerning environmental protection in the Constitution of China contain general principles. These provisions form the legal bases of all activities and legislation relating to the protection of the environment. Article 9 (ii) reads: "The state insures the suitable usage of natural resources, protects rare animals and plants." Article 26 provides: "The state protects and improves the environment of residential quarters and ecosystems and prevents and eliminates pollution and other hazards to the public."

#### Laws Promulgated by the National People's Congress and Its Standing Committees

These laws include general laws relating to marine environmental protection, special laws on prevention and management of marine pollution and procedural laws for their enforcement. Laws on the settlement of maritime disputes, including disputes regarding compensation for pollution damage, are also included. According to the related articles of the Constitution, these laws provide the policy and guideline for marine environmental protection.

The following laws focus directly on the protection of the marine environment and resources:

1) *The Environmental Protection Law (1989; hereinafter, EPL)*

This is the basic law in the field of environmental protection in China. The Law is applicable to "territory and seas within the jurisdiction of the People's Republic of China" (Art. 3).

Article 4 of said law mandates the integration of the state environmental protection plan with the overall national economic and social development plan. Thus,

> "x x x. The state adopts economic and technological policies and measures that are advantageous to x x x environmental protection so as to harmonise the work of environmental protection with economic and social development." (Art. 4)

On the matter of protection of the marine environment, the law states:

> The State Council and the people's governments at various levels in coastal areas shall provide better protection for the marine environment. The discharge of pollutants and the dumping of wastes into the seas, the construction of coastal projects, and the exploration and exploitation of offshore oil must be conducted in compliance with legal provisions so as to guard against the pollution and damage of the marine environment. (Art. 21).

In addition, the law created the agencies in charge of environmental protection. It has established a series of legal systems to address environmental protection. These are as follows:

a) a system of EIA;

b) a system to apply the "polluter pays" principle;

c) a system of fees for excessive discharge of pollutants;

d) a system of eliminating pollution within a given period of time;

e) a system of production scale limitation or production stoppage to minimise pollutant damage; and

f) a system of economic incentives.

2) *The Marine Environmental Protection Law (1983; hereinafter, MEPL)*

The objective of the MEPL is to protect the marine environment and resources therein, prevent pollution damage, maintain ecological balance, protect human health and promote marine development programs (Art. 1).

As stated in the EPL, the different governmental agencies are empowered to take charge of environmental protection in different aspects. In compliance with this, the MEPL has designated authorities responsible for marine pollution.

In this law, there are specific chapters that relate to the prevention of pollution damage to the marine environment caused by different pollutant sources. There are five such chapters, namely Chapter II concerning pollution damage by coastal construction projects, Chapter III on pollution damage by offshore oil exploration and exploitation, Chapter IV regarding land-based pollutants, Chapter V on vessels and Chapter VI on dumping of wastes. Chapter VII of the law pertains to the legal obligations arising from any violation of the law.

3) *Fisheries Law (1986)*

In accordance with the MEPL and the Water Pollution Prevention Law, people's governments at all levels shall take measures to protect and improve the ecosystem of fishery waters, prevent pollution and investigate the responsibility of any unit or individual that pollutes the fishery waters (Art. 26).

4) *Mineral Resources Law (1996)*

Article 30 of the Law states that in exploiting mineral resources, the legal provisions on environmental protection to prevent environmental pollution shall be observed. If a mine is to be closed down, a report must be prepared containing information on the mining operations, hidden dangers, land reclamation and utilisation and environmental protection. An application for approval of the mine closure must be filed in accordance with the relevant state provisions (Art. 18).

5) *Arbitration Rules of the Maritime Arbitration Commission of China (1988)*

This Rule lays out the procedure for settling disputes concerning maritime affairs, including disputes on marine environmental protection. According to Article 2 of this Rule, the Arbitration Commission shall take cognisance over the following disputes:

a) disputes regarding remuneration for salvage services rendered by sea-going vessels to each other or by a sea-going vessel to a river craft and vice versa;

b) disputes arising from collisions between sea-going vessels or between sea-going vessels and river craft or from damages caused by sea-going vessels to harbour structures or installations;

c) disputes arising from chartering, agency, towage, raising, sale, repairing and building of or in respect of sea-going vessels, carriage by sea by virtue of contracts of affreightment, bills of lading or other shipping documents and marine insurance;

d) disputes regarding pollution damages to the marine environment; and

e) other maritime disputes submitted for arbitration by agreement between the parties.

Understandably, there are more laws relating to marine environmental protection that do not focus solely on maritime affairs. For instance, the laws on control and management of equipment and construction of ships, management of navigation safety, and the customs law are geared more towards the prevention of marine pollution and the protection of the marine environment.

**Regulations and Rules Issued by the State Council**

The detailed provisions on marine environmental protection are embodied in many administrative regulations and rules issued by the State Council as well as implementing regulations and measures issued by related governmental agencies.

In implementing the MEPL, six regulations with provisions governing different pollution sources were issued by the State Council. These are as follows:

1) Regulations Concerning Environmental Protection in Offshore Oil Exploration and Exploitation (1983; hereinafter, ROE);

2) Regulations Concerning Prevention of Pollution of Sea Areas by Vessels (1983; hereinafter, RPV);

3) Regulations Concerning Dumping of Wastes into the Sea (1985; hereinafter, RDWS);

4) Regulations Concerning Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects (1990; hereinafter, RCP);

5) Regulations Concerning Prevention of Pollution Damage to the Marine Environment by Land-based Pollution (1990; hereinafter, RLP); and

6) Regulations Concerning Prevention of Environmental Pollution by Ship-breaking (1988).

Apart from the above-mentioned regulations, other regulations contain certain provisions concerning protection of marine environment and natural resources in a more general sense. These are as follows:

1) Regulations Concerning Exploitation of Offshore Petroleum Resources in Cooperation with Foreign Enterprises;

2) Regulations for Implementation of the Fisheries Law of the People's Republic of China (PRC);

3) Regulations Concerning Management of Marine Protected Areas;

4) Regulations Concerning Combining Industrial Pollution Elimination with Technical Renovation;

5) Regulations Concerning Countrywide Environmental Monitoring;

6) The Regulations on Marine Environmental Survey (Survey Regulations);

7) Management Measures on Administrative Penalties for Damage to the Environment; and

8) Interim Measures on Non-Gratuitous Utilisation of the Special Fund for Treatment of Pollution Sources.

More regulations on marine pollution are further discussed in the later sections of this paper.

**State Standards Issued by the State Council and Governmental Agencies and Local Standards Issued by Local Governments**

In order to implement provisions of laws and regulations concerning the marine environment, it is necessary to lay down some national standards and local standards based on local circumstances. At the state level, the major standards concerning marine environment are listed in *The National Standards of Environmental Quality, The Standards of Discharge of Pollutant Substances* and *The Standards of Seawater Quality.*

**Local Codes Promulgated by the Local People's Congress and Its Standing Committee as Empowered by the Constitution, and the Administrative Stipulations Issued by the Local Government**

In implementing national legislation on marine environmental protection, some coastal provinces, depending on their relevant particular circumstances, have issued their own local regulations on marine environmental protection. This is best illustrated in the case of Fujian Province. Another example is the *Regulations on Environmental Protection of Yingtai City of Shandong Province* issued by the local people's congress of Yingtai City, an important harbour city of China.

***Legislation and Regulations on Marine Pollution from Vessels***

Laws and regulations on management and control of marine pollution from vessels can be categorised into two. The first category concerns technology, such as requirements for equipment and construction of vessels including the requirement of certificates to be kept on board. The second category covers measures and procedures in dealing with pollution by operation of vessels and related activities.

The following list relates to the general legislation on the control of ships:

1) Maritime Traffic Safety Law (MTSL);

2) Regulations Concerning Seagoing Ships Register (RSSR);

3) Regulations Concerning Inspection of Ships and Offshore Installations (RISOI);

4) Regulations Governing Supervision and Control of Foreign Vessels (RSCFV);

5) Regulations Concerning Management of Old Ships (RMOS); and

6) Measures for Management of Salvage (MMS).

Examples of legislation relating specifically to the prevention of marine pollution from vessels are as follows:

1) MEPL;

2) Fisheries Law;

3) Regulations for Implementation of the Fisheries Law (RIFL);

4) RPV;

5) RSCFV; and

6) RISOI.

There is also a local legislation on the prevention of pollution from vessels, which is the *Rules of Maritime Traffic Safety and Prevention of Polluting Waters by Vessels of Yantai Harbour.*

**The Authority**

According to the relevant provisions of the EPL, MEPL and RPV, the Harbour Superintendency Administration is the primary authority responsible for the prevention of marine pollution from vessels.

In addition, the state fishery and fishing harbour superintendency departments are responsible for supervising the discharge of wastes by vessels at fishing ports, and for the investigation and settlement of traffic accidents between fishing vessels.

**Management of Discharge of Pollutants**

**Prohibition Against the Discharge of Wastes in General**

"Wastes" refer to oils, oily mixtures and any other poisonous or harmful substances. Article 45(5) of the MEPL defines ''discharging'' as ''acts to drain pollutants into the sea, including pumping, spilling, releasing, spraying and pouring''.

No vessel may discharge oils, oily mixtures, wastes and other harmful substances into the sea areas and seaports under the jurisdiction of China in violation of the law (Art. 26, MEPL and Part 6, RSCFV). The RPV contains more specific provisions on the control of waste discharges into the sea (Arts 4 and 5).

All vessels regardless of which flag they bear, ship-owners and other persons within the seas and seaports of the China shall not discharge wastes into fresh water areas of the ports close to estuaries, special marine conservation zones or marine natural conservation zones.

Part 9 of the RPV is about preventing pollution caused by building, repairing, salvage and scrapping of vessels on or under water. Article 34 states that entities engaged in building, repairing, salvage and scrapping of vessels are required to install facilities and adopt precautionary measures of pollution prevention. The other articles of this Part state in detail the measures for the prevention of pollution by relevant activities.

**Prevention of Pollution from Discharging Harmful Substances**

Articles 30 and 31 of the MEPL refer to the discharge of hazardous and radioactive substances. The discharge of hold-washings and other residues by vessels carrying noxious or corrosive goods shall be conducted in compliance with the state regulations on sewage discharged from vessels, and should be accurately recorded in the Log Book. The discharge of radioactive substances from nuclear-powered vessels or vessels carrying such substances shall likewise be conducted in compliance with the same law, particularly Article 19 which reads:

> "It is prohibited to discharge wastewater containing high-level radioactive matter into the sea. Any discharge of wastewater containing low-level radioactive matter into the sea, when actually necessary, shall be carried out in strict compliance with the state regulations and standards concerning radioactive protection."

Part 5 (Arts. 21-23) of the RPV covers "Dangerous Cargoes Shipped by Vessels". The Chapter requires the observance of necessary safety and preventive measures together with the relevant international and national standards for transportation and carriage of inflammable, explosive, corrosive, poisonous or radioactive cargo, including loading poisonous liquids in bulk. Article 36 of the RSCFV and Part 6 (Arts. 24-26) of the RPV include strict procedures for discharging "other dirty water from vessels". "Dirty water" means ballast water and hold washings of ships that contain nuclear, radioactive, epidemic and poisonous and corrosive substances.

Foreign vessels are required to apply for an approval from the Harbour Superintendency Administration before discharging any ballast water, tank washings or bilge water into the sea. If such waters come from holds where dangerous or harmful cargoes have been stowed, they shall be discharged only at designated areas after the sanitation departments concerned have conducted tests. If a vessel is from a plague-infested port, such discharge shall require treatment by the Quarantine Authorities (Art.36, RSCFV).

**Control of Garbage from Vessels**

Article 33 of the RSCFV and Part 7 (Arts. 27-30) of the RPV relate specifically to the control of garbage from vessels. Article 28 of the RPV enumerates the regulations

that must be observed by vessels in disposing garbage. Vessels are not allowed to dump garbage into port areas. Vessels carrying harmful cargoes or dusty bulk cargoes must not wilfully wash decks or holds or discharge the residues into the port. Any vessel in need of carrying out deck washing first must acquire the approval of the Harbour Superintendency Administration (Art. 27, RPV).

Vessels that must dispose of their garbage at sea shall observe the following regulations:

1) Plastic products must not be thrown into the sea;

2) The vessel's galley garbage as well as foodstuff discards, which have not been broken into grains can be thrown into the sea 12 miles from the nearest land; and

3) The galley garbage and foodstuff discards that have been broken into grains with a diameter of less than 25 mm can be thrown into the sea three miles from the nearest land (Art. 30).

**Flag State and Port State Control**

On one hand, under the MEPL, the RPV and the RSCFV, China applies flag state control on all of her vessels regardless of where they may be. On the other hand, China executes port state control on foreign vessels within waters under its jurisdiction as well as those beyond said jurisdiction whenever the resulting pollution affects the sea areas under the jurisdiction of China.

**Systems for Certificates**

There are various kinds of certificates that are required to be carried on board, and some events that need to be recorded in various books under the MEPL, the RPV and the RSCFV.

1) Oil Record Book. Article 28(1) of the MEPL requires that any oil tanker of 150 tonnes gross tonnage and above or any other vessel of 400 tonnes gross tonnage and above shall carry on board an Oil Record Book. The discharge of oily water from these vessels must be accurately recorded in the Oil Record Book. In order to implement these provisions, a number of strict requirements for abundant equipment, measures and rules for oil operation and oil water discharge from ships in the MEPL and the RPV must be observed. Furthermore, in order to enforce the MEPL, Article 47 of the RPV stipulates the imposition of a fine in the

maximum amount of renminbi or yuan (RMB) 1,000 (US$121) in the following cases:

a) using oil dispersant without authorisation;

b) failure to keep an Oil Record Book as required;

c) inadequate or false entries in the Oil Record Book; and

d) hindering the inspection conducted by the Harbour Superintendency Administration.

For the control of foreign flag vessels within waters under the jurisdiction of China, oil tankers and vessels with oil as fuel shall carry their Oil Record Book on board and shall make appropriate entries as required (Art. 37, RSCFV).

2) Credit Certificate. According to paragraph 2 of Article 28 of the MEPL, any vessel carrying more than 2,000 tonnes of oil in bulk as cargo shall have a valid Certificate of Insurance or other Financial Security in respect of Civil Liability for Oil Pollution Damage, or a Credit Certificate for Civil Liability Against Oil Pollution Damage, or hold other financial credit guarantees.

3) Log Book. Article 30 of the MEPL and Article 26(6) of the RPV call for the accurate recording in the Log Book of the discharge of different pollutants from vessels. The discharge of hold-washings and other residues by vessels carrying noxious or corrosive goods must be accurately recorded in the Log Book. Where pollution has occurred within the port area or coastal waters, the vessel at fault shall have all relative particulars entered in the Oil Record Book and the Log Book while taking other preventive measures (Art. 38, RSCFV).

**System for Survey and Inspection**

The MTSL and the Rules of Sea-going Vessels Register are the major legislation concerning systems for survey and inspection of vessels for purposes of traffic safety. They do not deal directly, however, with prevention of marine pollution. Several chapters of the law focus on survey and registration of vessels (Part 2), assurance of safety (Part 5), investigation and settlement of maritime traffic accidents (Part 9) and legal responsibilities (Part 10).

In general, the MEPL requires that vessels and involved enterprises, such as shipbuilding, repairing, scrapping and salvaging, shall be provided with pollution-prevention equipment and shall undertake preventive measures (Arts. 32-33).

The RPV provides strict requirements for anti-pollution equipment for oil tankers over 150 tonnes gross tonnage and other vessels over 400 tonnes gross tonnage (Art. 15) as well as for tankers and other vessels less than above mentioned gross tonnage (Art. 16). Vessels involving oil operation and oily water discharge shall observe the operating rules and procedures stipulated in Articles 17 and 20. Article 28 provides regulations for discharging of garbage from vessels and of hold washings containing poisonous or corrosive substances.

**System for Monitoring and Detection**

The Harbour Superintendency Administration has the power to take coercive measures to avoid or minimise pollution damage caused or likely to be caused by a marine accident (Art. 35, MEPL). In the event of a pollution case which has happened within the seas under the jurisdiction of China, the Harbour Superintendency Administration or authorised officers from relevant government departments may go on board the vessel in question to examine and handle the case (Art. 37, MEPL). Furthermore, all vessels have the obligation to watch out for pollution of the sea. Upon discovering acts in violation of law or occurrences of pollution, they shall immediately report such incident to the nearest Authority (Art. 36, MEPL).

Disputes regarding compensation for pollution damage and the amount thereof shall be referred to the Harbour Superintendency Administration which shall resolve the dispute through conciliation or settle the same based on the result of investigations (Art. 45, RPV).

**Incident Report**

The main provisions of the laws and regulations concerning a marine pollution incident report focus on two obligations. First, when pollution has taken place, the vessel concerned must undertake measures to control and eliminate pollution. Two, it makes the reporting of the incident to the Harbour Superintendency Administration for investigation and settlement mandatory on the vessel concerned. Clauses of the same import are provided both in Article 34 of the MEPL and Article 6 of the RPV.

***Legislation and Regulation on Marine Pollution from Dumping***

The existing national legislation concerning dumping in the ocean in China are the MEPL (Chapter VI - Prevention of Pollution Damage to the Marine Environment by

Dumping of Wastes), the RDWS, and the RPV. The provisions of these laws and regulations implement the London Convention 1972. An amendment of these laws and regulations, however, is necessary once China ratifies the 1996 Protocol.

Art. 45(6) of the MEPL defines "dumping" as follows:

> "`Dumping' means disposal of wastes or other harmful substances into the sea from vessels, airborne vehicles, platforms or other conveyances, including the disposal of vessels, airborne vehicles, platforms and other floating apparatus."

Implementing the MEPL is the RDWS, which imposes strict control on the dumping of wastes at sea so as to prevent pollution damage to the marine environment, maintain ecological balance, preserve marine resources and promote the marine cause. Article 2 of the RDWS provides a more detailed definition of ''dumping'', to wit:

> "For the purpose of these Regulations, 'dumping' means the disposal of wastes or other matter from vessels, aircraft, platforms or other vehicles at sea; the disposal of vessels, aircraft, platforms or other man-made structures at sea; the disposal at sea of wastes or other matter arising from, or related to the exploration and exploitation of seabed mineral resources and offshore processing related thereto.
>
> 'Dumping' does not include the discharge of wastes arising from the normal operation of vessels, aircraft, or other vehicles and facilities."

**The Authority**

Under the MEPL and the RDWS, the competent authority in charge of the dumping of wastes at sea is the State Oceanic Administration and its agencies (hereafter referred to as the Authority). The Authority has the power to designate dumping areas in the sea, in consultation with the departments concerned, on the basis of scientific, rational, safety and economic principles, subject to approval by the State Council (Art. 5, RDWS). The Authority shall examine the application for dumping at sea within two months of the receipt of such application and shall issue permits for dumping after approval. Such permits may be changed or revoked by the Authority.

Under the RDWS, wastes are classified into three categories, depending on its toxicity, harmful substance content, and impact upon the marine environment, among others. The Authority may amend the criteria in the light of the variation of the marine ecological environment, the development of science and technology and the need for the preservation of marine environment.

**System of Permits for Dumping**

**Prohibition Against Dumping in General**

Article 38 of the MEPL provides a general prohibition on dumping without the permission of the Authority. Article 6 of the RDWS, on the other hand, states the procedure of application for the permit. No entities, ships, aircraft, platforms or other vehicles may dump any kind of waste into the sea areas under the jurisdiction of China without permission from the Authority. Wastes from foreign countries are prohibited from being shipped for dumping into the seas under the jurisdiction of China (Art. 7, RDWS).

Any vessel passing the seas under the jurisdiction of China must notify the Authority of the time of their entry, their routes, and the names, quantities and composition of the wastes to be dumped 15 days prior to entering the said seas (Art. 8, RDWS). Foreign vessels and platforms within the seas under the jurisdiction of China which intend to dump wastes or other matters arising from, or related to the exploration, exploitation and associated offshore processing of seabed mineral resources should report to the Authority for approval (Art. 9 RDWS). Refuse dumping operations, including abandoning ships or other floating objects, in the sea areas under the jurisdiction of China by foreign vessels is not allowed (Art. 33 RPV).

**Permits**

Wastes at sea are classified into three categories in accordance with the London Convention 1972.

There are three kinds of permits for dumping under Article 11 of the RDWS:

1) The emergency permit. The Authority may issue an emergency permit for allowing dumping of wastes listed in Annex 1 (Black List) at designated areas at sea in emergency cases where their disposal on land may pose serious dangers to human health.

2) The special permit. The dumping of the wastes listed in Annex II (Grey List) requires a special permit, which must be obtained prior to the dumping of the wastes.

3) The general permit. Prior to dumping low toxic and non-toxic wastes not included in Annexes I and II, a general permit must first be secured.

**The Control of Marine Pollution from Dumping**

With regard to the control of marine pollution from dumping, port state jurisdiction and coastal state jurisdiction are the legal measures embodied in the relevant laws and regulations in China. These laws and regulations cover the following subject matters:

1) the dumping of wastes into the internal sea, the territorial sea, EEZ and the continental shelf of China;

2) the transporting of wastes passing the sea areas under the jurisdiction of China for the purpose of dumping;

3) the loading of wastes on land or in the harbours of China for the purpose of dumping; and

4) the incineration and disposal of wastes in the sea areas under the jurisdiction of China.

**Monitoring**

The entities that have secured permits to dump wastes at sea shall notify the Authority, which, in turn, shall verify such wastes after their loading. The verification shall be conducted by the Harbour Superintendency Administration at the port of departure (Art. 39, MEPL). After completion of dumping entities and vessels shall prepare a written report to the approving department and to the Harbour Superintendency Administration, respectively (Art. 40, MEPL). The Authority shall monitor and supervise the dumping of wastes at sea and, when necessary, send officials to go with the vessel. The dumping entity shall provide facilities for such officials (Art. 13, RDWS). Ocean dumping areas shall also be regularly monitored by the Authority. In case any of the area is found to be no longer suitable for further dumping, the Authority may decide to have it closed (Art. 16, RDWS).

***Legislation and Regulation on Marine Pollution from Land-based Sources***

Considering that land-based sources are the major source of marine pollution in the coastal waters and surrounding seas of China, the State Council and governmental agencies of China have issued a number of regulations and administrative management measures for controlling and managing these pollutant sources. The following are the major national legislation concerning the prevention of marine pollution by land-based sources:

1) MEPL;

2) RLP;

3) RCP; and

4) RS.

The following are some administrative rules and management measures that have been issued to control certain pollutant sources such as municipal and industrial pollutant sources that cause marine pollution. The State Council promulgates a number of these rules while others are issued by concerned governmental agencies:

1) Regulations on Country-wide Environmental Monitoring;

2) Measures Governing Sewage Treatment Facilities and Environmental Protection;

3) Interim Measures for Governing Permitting License of Sewage Discharge;

4) Measures Governing Permitting License of Municipal Sewage Discharge;

5) Measures Governing Municipal Domestic Garbage;

6) Management Rules of Environmental Protection in Transportation Industry;

7) Interim Measures Governing Environmental Protection in Coal Industry;

8) Interim Rules Governing Environmental Protection in Chemical Mineral Industry;

9) Rules of Monitoring Environmental Protection in Chemical Industry; and

10) Regulations on Agricultural Environmental Monitoring Works.

**The Authority**

Under the MEPL and related regulations, the Environmental Protection Department under the State Council is in charge of the prevention of marine pollution from land-based pollutants in China.

## The Management System

### Land-Based Pollutant Sources

Article 2 of the RLP defines "land-based pollutant sources" as follows:

> "For the purpose of the present Regulations, 'land-based sources of pollution' refers to the sites and installations, etc. where the pollutants discharged from the land into the sea have caused or are likely to cause damage to the marine environment.
>
> 'Land-based pollutants' refers to pollutants that are discharged from the land-based sources provided in the previous article."

The MEPL classifies land-based sources, which may cause marine pollution into three main categories:

1) various land-based sources of sewage discharged into sea areas;

2) coastal projects; and

3) ship-breaking.

Consequently, some regulations and management measures for the management and control of these sources have been published for the implementation of the MEPL.

### Main Principle of Management

The discharge of harmful land-based sewage into the seas shall be operated in compliance with standards and relevant regulations regarding the acquisition of permits. Any discharge in excess of state and local standards shall be subject to a fee and the entity which undertook the discharge operations shall be responsible for the improvement of the environment within a given period (Art. 18, MEPL and Arts. 5–8, RLP).

### System of Reporting and Registration

Any entity or individual that discharges land-based pollutants into the sea is required to report to, and register with the local Authority the following:

1) the installations for discharging and treatment;

2) the varieties, quantities and concentration of pollutants for discharge in case of normal operation; and

3) the data of environmental protection of marine pollution from land-based sources.

Any major change involving any of the aforementioned matters shall be subject to the consent and approval of the Authority. A duplicate of the above-said information shall be sent to the state marine administrative authority (Art. 6, RLP).

**Control and Management of Land-Based Sources**

According to continuing surveys, the main reason for marine pollution in coastal waters and bays of China is the discharge of land-based sewage. Therefore, the main focus of the national legislation governing the control of land-based pollutant sources is on the management of the discharge of industrial, agricultural and municipal sewage. The MEPL sets forth the different measures for dealing with land-based sewage in general while the RLP specifies the measures and provides the punishment in case of any violation.

Generally, the management of land-based pollutant sources includes both administrative and technological aspects. First, there is a system of permits. All discharges of sewage require a permit to be secured in advance. Second, there is the control on the total amount of discharge. The limitation of the amount of discharge to be made is based on the allowable capacities of different sea areas. Third, there is a strict criterion for levying discharge fees for discharges in excess of what is allowable. Fourth, discharge areas are under strict control and are subject to the prohibition and/or limitation of discharge. Fifth, discharge of sewage shall be subject to the state or local standards. Certain sewage may be discharged into the sea only if it satisfies the established state or local standards.

**Control of Discharge of Land-Based Sewage**

Prohibition against discharge in certain sea areas. It is prohibited to build an outlet for discharging sewage into the following sea areas: the special marine reserves, marine natural reserves, seashore scenic and tourist areas, salt-fields, bathing beach, major fishing waters, and areas which need other special protection. Those outlets already in existence in the above-said areas discharging in excess of the state and local standards, shall be improved within a prescribed time limit (Art. 8 RLP).

Management of solid waste along seashores and beaches. It is prohibited to pile up, discard and treat solid wastes, including tailings, slag, cinders, garbage and other wastes along seashores and beaches, without authorisation. If it is necessary to do so, it shall be

carried out subject to the approval of the Authority concerned. (Art. 24, MEPL and Art. 11, RLP)

Management of sewage containing radioactive matter. It is prohibited to discharge wastewater containing high-level and medium-level radioactive matter into the sea. Any discharge of wastewater containing low-level radioactive matter into the sea must be carried out in strict compliance with the state regulations and standards concerning radioactive protection (Art. 19 MEPL, Art. 14 RLP).

Management of industrial and medical sewage. No medical sewage or industrial wastewater carrying pathogens may be discharged into the sea until it is properly treated and strictly sterilised, with the pathogens therein exterminated (Art. 20, MEPL and Art. 16, RLP). Expired or forbidden medicines and medicinal paraphernalia are prohibited from being discharged along the seashores and beaches (Art. 19, RLP).

The discharge of industrial wastewater and domestic sewage containing organic and nutrient matter into bays, semi-closed seas and other sea areas with low capacities of absorption shall be put under control (Art. 21, MEPL, Art. 18, RLP).

When discharging heated wastewater into the sea, the variation in the water temperature caused by said discharge shall be within the relevant state criteria (Art. 17 RLP).

Management of hazardous sewage. It is prohibited to employ indiscriminate methods of diluting and draining for the purpose of discharging hazardous and harmful wastewater in the seashores.

It is prohibited to discharge oils, acid liquid, alkaline liquid and venom into the sea. No industrial wastewater containing oily wastes, harmful heavy metal, and other industrial wastewater may be discharged into the sea until it is treated in conformity with the state and local standards and regulations. Furthermore, the residues after treatment are prohibited from being discarded into the sea (Art. 15, RLP).

Management of the use of chemical substances. The use of chemical pesticides in coastal farmlands shall conform to the state regulations and standards for its safe use (Art. 23, MEPL).

Management of pollution from rivers. The Authorities at different levels shall strengthen the control of the rivers emptying into the sea and shall ensure the good quality of the water in the estuaries by preventing these rivers from being polluted (Art. 25, MEPL).

Management of municipal sewage. There is no national legislation with regards domestic sewage. However, some administrative management measures for control of the discharge of municipal sewage have been issued. These measures include the management of sewage treatment and discharge facility, and the collection of discharge fees.

1) Management of sewage treatment facilities

*Measures Governing Sewage Treatment Facilities and Environmental Protection.* These Measures are applicable to the following facilities:

a) industrial sewage purifying facility;

b) facility for integrated use and repeat-use of sewage;

c) facility of closed-circuit cycle system of sewage;

d) municipal sewage treatment facility;

e) medical sewage treatment facility; and

f) hotel sewage treatment facility.

Under this, the Authorities at different levels are tasked with the responsibility of supervising, inspecting and managing the operation and closure of sewage treatment facilities and of the collection of discharge fees, in addition to the monetary penalty imposed for any violation of these Measures.

2) System of discharge permit

*Interim Measures for Governing Water Pollutants Discharge Permit* and *Measures Governing Municipal Sewage Discharge Permit.* The main measure to control the discharge of sewage is the system of discharge permits based on the overall control of total quantity of discharge. There are detailed procedures for applying for discharge permits and the function and powers of the Authorities at different levels to implement the above mentioned Measures are therein provided.

3) Collection of discharge fee

*Interim Measures on Levying Waste Discharge Fees.* The purpose of levying discharge fees is to prompt enterprises to strengthen their management and to economise and integrate the use of resources, to bring pollution under control and to improve the environment. The payment of discharge fees does not excuse enterprises from satisfying their other liabilities, such as putting pollution under control, paying compensation for pollution damage and other liabilities stipulated in other laws and regulations. The discharge fees collected shall be placed in a special account known as Subsidy for Environmental Protection. The Measures are supplemented by *The Standards of Levying Discharge Fees of Waste Gas, Wastewater and Waste Residue.*

Management of pollution incidence. Any entity and individual who causes the accidents resulting in pollution damage to the marine environment by land-based pollutants must adopt immediate measures for treatment, make a primary report to the Authority, and make a duplicate of such report to the relevant departments within 48 hours after the occurrence of the accident. After receiving such reports, the Authority at the level concerned shall take measures to eliminate or mitigate the pollution in cooperation with the relevant departments, and shall be in charge of investigation. In case the party concerned objects to the administrative penalty, it may seek reconsideration of the penalty notice or directly initiate proceedings in the people's court within 15 days of the receipt of the penalty notice (Art. 33, RLP).

**Management of Coastal Construction Projects**

Under Article 2 of the RCP, "coastal construction projects" refer to constructions which are carried out for purposes of controlling seawater or making use of the sea, either wholly or in part, resulting in much impact on the marine environment. These are basic construction projects, technological renovation projects and construction projects for regional development on the seashore or adjacent to it. Specific examples include:

1) ports and wharves;

2) shipyards and ship-repairing yards;

3) littoral thermal power station, nuclear power stations and tidal-power stations;

4) oil depots, mines, chemical plants, paper mills, iron and steel works along the seashore;

5) construction projects to treat and dispose solid wastes, construction projects to discharge municipal wastewater into the sea and other construction projects to discharge pollutants into the sea;

6) irrigation works and sea-lane construction projects in the estuaries;

7) bridge and tunnel across the sea; and

8) coastal filling projects, fishery projects, sea-embankment projects, seashore protection projects and all other development construction projects which can change the natural characters of the seashore and tidelands.

Chapter II of the MEPL gives some general requirements for the prevention of marine pollution from coastal construction projects while the RCP is the implementing regulation. An EIA is needed for coastal construction projects.

Development of coastal construction projects at certain seashores, such as marine protected areas, bathing beaches and major fishing areas under the RCP, is prohibited. According to the same Regulations, pollution prevention measures and equipment or emergency response measures and equipment are needed when developing the aforementioned construction projects. In addition, there are penalty clauses relating to any violation of these Regulations.

**Management of Ship-Breaking**

For the purpose of preventing marine pollution from ships, the RS *was* issued by the State Council. These Regulations apply to ship-breaking activities on the coast and on the water within such areas under the jurisdiction of China.

"Ship-breaking on the coast" means dismantling an abandoned ship alongside the ship-breaking wharf, or in dock, or grounded to the seashore. This excludes such instance when the ship is grounded by reason of marine casualties. "Ship-breaking on the water", on the other hand, means completely dismantling an abandoned ship on the water (Art. 2, RS).

The prevention of marine pollution from ship breaking is the responsibility of the local government as well as the Authorities in charge of the control of land-based marine pollution. The local people's government shall draw the comprehensive plan for promoting ship-breaking programs alongside environmental protection. Such plan shall determine the best location of the ship-breaking enterprises in view of the necessity of the industry, the characteristics of the regional area, the environmental situation and technical

conditions (Art. 5, RS). The competent authorities are empowered to inspect the activities of ship-breaking units.

The main obligation of parties engaged in the ship-breaking industry is the prevention of marine pollution from their activities by taking appropriate measures. The environmental impact statement of the ship-breaking enterprise shall be formulated before its establishment (Art. 6, RS). All units of ship breaking shall be provided with necessary installations for preventing pollution caused by ship-breaking activities such as oil-defender and equipment for receiving waste oil and oil polluted water (Art. 10, RS). Every person or unit involved shall comply with the rules and standards during the course of their work (Arts. 11-14, RS). If a unit has caused severe environmental pollution, it shall be ordered to eliminate and control the pollution within a certain period (Arts. 7 and 8, RS). The Regulations include penalty clauses for violations thereof, such as fine or closure of the violating enterprise.

***Legislation and Regulation on Marine Pollution from Toxic, Hazardous and Nuclear Waste***

Insofar as the management of hazardous substance and its waste are concerned, the focus on China is two-sided. On one hand, the management is through the control of importation and exportation of hazardous substances and wastes. On the other hand, appropriate measures are required to be undertaken in order to prevent environmental pollution by hazardous substances. In general, the rules and measures treat the different kinds of hazardous substance and its wastes individually. The following are the major administrative rules and measures concerning the management of the transboundary movement of hazardous substance and its wastes:

1) Rules Governing the Supervision of Ships Loading Dangerous Goods;

2) Rules Governing the Inspection of Imported Wastes before Loading (Interim);

3) Rules Governing the Inspection of Packing of Exported Dangerous Goods by Sea-Going Transportation (Interim);

4) Rules for Environmental Management of Chemicals Imported for the First Time and of Imported and Exported Toxic Chemicals;

5) Rules for Waste Importation Environmental Protection (Interim);

6) Rules of Preventing Environmental Pollution by Electrical Power Installations Containing Polychlorinated Biphenyl (PCB) and its Wastes;

7) The Circular on the Resolute Control of Transferring Harmful Wastes from Abroad into China; and

8) The State Council's Urgent Circular on Prohibiting Importation of Radioactive Polluted Old and Scrap Metal Matters.

**The Authority**

There are many governmental agencies involved in the management of the prevention of environmental pollution by harmful and dangerous substances and their wastes based on their respective mandates. The competent authorities on the management of transboundary movement of toxic and hazardous wastes include the Environmental Protection Administration, the Ministry of Communication, the Import and Export Commodity Inspection and Testing Administration, the Ministry of Energy, and the Customs of China.

These authorities are responsible for issuing permits, supervising and inspecting importation/exportation of hazardous substances, and prohibiting the importation of hazardous wastes. In addition they manage and survey the surrounding environment of places where these substances are stored.

**Management of Transportation of Hazardous Wastes**

**Measures of Prohibiting Importation of Hazardous Wastes**

Administrative regulations prohibit the importation of harmful wastes into China. There are two circulars concerning the importation of hazardous wastes. One is the *Circular on the Resolute Control of Transferring Harmful Wastes from Abroad into China* issued jointly by the Environmental Protection Administration and the Customs of China. The purpose of this Circular is to control the transfer of harmful industrial and domestic wastes into the territory under the jurisdiction of China pursuant to the Basel Convention, which it has ratified. The Circular provides that "the importation of wastes, which are listed in Annex I attached to this Circular, for purpose of dumping and dealing is not allowed. In case such wastes are needed as raw material and energy for recycling, the importation shall be examined and approved by the Authority in advance" (Item III). The other circular is *The Urgent Circular on Prohibiting Importation of Radioactive Polluted Old and Scrap Metal Matters* issued by the State Council. Provisions of the same import can be found in other rules. For example, the *Rules of Preventing Environmental Pollution by Electrical-Power Installation Containing Polychlorinated Biphenyl and its Wastes* stipulates that it is prohibited to import any electrical-power installation containing PCBs, its liquid and substances polluted by it (Art. 17). Legal

sanctions shall be imposed and administrative obligations shall be demanded for any violation of the regulations and rules.

**National Definition**

Harmful wastes are prohibited from being imported into China. There is a list on the "Categories of Harmful Wastes and Rubbish" attached as Annex I to *The Circular on Resolute Control of Transferring Harmful Wastes from Abroad into China.* The list includes wastes generated in the course of using and producing 23 kinds of chemicals, medicines, oil products, and domestic and industrial rubbish as well as residues of incineration.

**System of Permit**

It is provided by various administrative rules that any unit or individual involved must obtain a permit in advance from the competent authority in case it is necessary to import or export some toxic and hazardous substances. It is prohibited to transport or dispose of hazardous wastes unless it is authorised in advance. The procedure for acquiring a permit and the competent authority from which it will be secured depends on the substance to be transported.

**Requirement of Management in an Environmentally Sound Manner**

According to administrative rules and measures, management systems, which include supervision, survey and inspection, shall be established in order to put hazardous substances and their wastes under strict control. The control of transboundary movement of harmful substance and its waste shall be on the whole process of the movement, that is from the packing before loading to the process of transferring and storing of such substance and its waste. These rules and management measures require all units and individuals involved in the transportation and/or use of hazardous substance and its waste to provide preventive measures, appropriate storing facilities and regulations for their operation and transfer in order to prevent environmental pollution from hazardous and toxic substances and their wastes. The laws require that there shall be adequate labels to indicate the toxic and harmful nature of the substances of wastes stored therein. The hazardous and harmful substances shall be identified with visible and prominent labels. The transportation of such substances and wastes is required to be carried out in compliance with related international and national standards. In addition, these rules make it mandatory for the above mentioned units and individuals to accommodate the supervision, survey and inspection of the authorities.

***Legislation and Regulation on Marine Pollution from Seabed Activities and Other Activities Concerned***

Activities that cause marine pollution in seabed and other sea areas under the jurisdiction of China fall into two categories. One is the utilisation of marine natural resources, such as exploration and exploitation of mineral and offshore oil resources, fishery and aquaculture. The other refers to seabed activity, such as the laying of submarine pipelines and cables and scientific research, among others.

In comparison with other activities in the seabed or the seas, the exploration and exploitation of offshore oil is most likely to cause marine pollution. Thus, there are specific regulations concerning the prevention of oil pollution from offshore drilling rigs and floating or fixed platforms. There are only a few general provisions on other activities in seabed and sea areas.

In general, the list of national legislation and regulations concerned with marine pollution from seabed activities and other activities is as follows:

1) MEPL;

2) Mineral Resources Law;

3) Fisheries Law;

4) ROE;

5) Regulations on the Exploitation of Offshore Petroleum Resources in Cooperation with Foreign Enterprises (RPCF);

6) Regulations on the Protection of Underwater Cultural Relics;

7) Regulations on Management of Laying Submarine Cables and Pipelines (RLCP); and

8) Measures to Implement Regulations on Management of Laying Submarine Cables and Pipelines (IRLCP).

There is also local legislation regarding the prevention of marine pollution from activities in the seabed. Nine out of the 12 coastal provinces and municipalities that are directly under the central government have issued their respective “Rules Governing the Utilisation of Sea Areas”. At least 13 coastal cities of these provinces have also issued

their own local circulars. However, the local regulations on marine pollution by activities in the seabed are usually incorporated into legislation on the utilisation of sea areas under the concerned administrative jurisdiction.

The prevention of marine pollution caused by activities in the seabed and other sea areas is carried out by means of a permit system and a system of payment for the use of sea areas at the local level. Sea area use is defined as the exclusive occupation of certain sea areas for more than three months, including exploration and exploitation of offshore oil and other mineral resources, zones of discharge of land-based pollutants, and of dumping and other activities concerned.

**The Authority**

There are several governmental agencies involved in marine environmental protection from maritime activities. There is the State Oceanic Administration, which is concerned with offshore oil exploration and exploitation as well as laying submarine pipeline and cable. Another agency, in charge of fishery administration and fishing harbour superintendence, is responsible for supervising the discharge of wastes by vessels in the fishing harbours and for keeping the waters under surveillance. Moreover, there is the department in charge of geology and mineral resources under the State Council, which is charged with the supervision and administration of the exploration and development of mineral resources including the prevention of marine environmental pollution caused thereby.

**Regulations**

**Requirement of Approval**

Under related laws and regulations, any activity, which may cause marine pollution in the seas under the jurisdiction of China, must apply for an approval from the Authority.

**Requirement to Comply with Relevant Laws and Regulations**

Laws and regulations involving maritime activities emphasise the relation of such laws with other laws and regulations on marine environmental protection and the importance of taking appropriate measures to prevent marine pollution. Below are some examples of these provisions:

1) "In exploiting mineral resources, it is essential to observe the legal provisions on environmental protection to prevent pollution of the environment." (Art. 30, Mineral Resources Law)

2) "In accordance with the Marine Environmental Protection Law and the Water Pollution Prevention Law, people's governments at all levels shall take measures to protect and improve the ecosystem of fishery waters, prevent pollution and investigate the responsibility of any unit or individual that pollutes the fishery waters." (Art. 26, Fisheries Law)

3) "Any institution or individual, when conducting archaeological exploration and excavation for underwater cultural relics, must also comply with other relevant laws and regulations of China, be subordinate to the administration of the departments concerned; observe rules and procedures of underwater archaeological activities, diving and navigation, x x x; x x x and prevent pollution." (Art. 9, Regulations on the Protection of Underwater Cultural Relics)

4) "In the course of implementing petroleum operations, the operator and subcontractors shall comply with the relevant laws and provisions on environmental protection and safety of China as well as taking account of international customs, protect fishery resources and other natural resources and prevent the environment, including the air, seas, rivers, lakes and land, from being polluted and damaged." (Art. 24 RPCF)

**Prevention of Pollution from Offshore Oil Exploration and Exploitation**

The legislation on prevention of marine pollution from offshore oil exploration and exploitation are the MEPL and the ROE. Chapter III of the MEPL includes some general requirements for taking measures preventing marine pollution from offshore oil exploration and exploitation.

Under the MEPL and the ROE, "offshore oil exploration and exploitation" refer to such operations as offshore oil exploration, exploitation, production, storage and transportation through pipelines. The control of marine pollution from offshore oil exploration and exploitation is carried out in the following manner:

1) Requirement of an EIA. Enterprises engaged in offshore oil exploitation shall produce Environmental Impact Statements including effective measures to prevent pollution, and shall submit them to the Authorities for examination and approval.

2) Management of discharging wastes. Oily water, oily mixtures and oily industrial wastes from offshore drilling rigs and floating or fixed platforms shall not be directly discharged into the seas. When the water is discharged after treatment, its oil content must comply with the state standards concerned (Art. 11, ROE).

3) Requirement for emergency action plan and equipment. An enterprise, institution or operator engaged in offshore oil exploration and exploitation shall have the ability to meet emergencies with regard to the prevention and control of oil pollution accidents. Such units or individuals shall work out emergency plans, and be provided with oil-recovery facilities as well as oil enclosure and elimination equipment (Art. 6, ROE). In exploring and exploiting offshore oil resources, effective technical measures shall be taken to prevent blowouts or oil spill accidents, in consonance with appropriate anti-pollution facilities and equipment. Offshore oil pipelines and oil storage shall always be kept in good condition through regular inspections and shall comply with the requirements against seepage, leakage and corrosion, so as to prevent oil pollution (Art. 14, ROE).

4) Requirement of Anti-pollution Record Book. Fixed or floating platforms shall have an Anti-pollution Record Book printed in a form approved by the competent authority (Art. 10, ROE). The operator shall make a truthful and detailed account of relevant circumstances in the Book (Art. 18, ROE).

5) Monitoring and inspection. Persons designated by the competent authority are empowered to board any fixed or floating platform and any other relevant installation for the purposes of monitoring and inspection (Art. 20, ROE).

6) Financial insurance. Each enterprise, institution or operator shall carry insurance or other financial guaranties in respect of civil liabilities for pollution damage (Art. 9, ROE).

7) Compensation and discharge fees for excessive discharges. Any unit or operator shall compensate the pollution damage caused by their operations. Any unit or individual who has violated relevant laws and regulations shall be ordered by the competent authority to remedy the pollution damage within a definite time, pay the clean-up expenses incurred in eliminating the pollution and compensate for the losses sustained by the state. Those who have discharged pollutants in excess of the set standards may be ordered to pay discharge fees for such excess (Art. 26, ROE).

## LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGES

### *System of Remedies for Pollution Damage*

In China, the legal regime of liabilities for marine pollution damage consists of relevant chapters and provisions of laws and regulations as well as administrative rules and circulars, including the following:

1) Criminal Law;

2) The EPL;

3) The MEPL;

4) Other laws concerning the utilisation of sea areas and natural resources therein, such as the Fisheries Law and the Mineral Resources Law;

5) Regulations on management of marine pollution; and

6) Administrative circulars and rules.

Laws and regulations also impose the legal responsibilities that violators should bear, be it administrative, civil or criminal.

### *Entities Subject to Liability for Pollution Damage*

According to the laws and related regulations, enterprises and individuals whose activities have caused or may cause marine pollution damage are the main subjects for determining liabilities for pollution damage.

### *Exemption from Liability*

Compensation liabilities may not be imposed if pollution damage to the marine environment cannot be avoided due to *force majeure*, in spite of the prompt and reasonable measures taken. In case of pollution damage arising entirely from the acts of a third party, said party shall be held liable for compensation.

***Measures to Ensure Response for Damage Liability***

The systems of registration and permit are practical measures to prevent marine pollution damage and to ensure responsibility for damage. Any activity to be conducted by any unit or individual, which may cause an impact to the marine environment, shall be reported to the competent authorities and an approval therefor obtained prior to its operation. Moreover, some activities may be undertaken only after complying with the requisite EIA and after securing a permit or certificate from the concerned authorities. These measures are essential to enable the authorities to determine the environmental protective liabilities of the parties initially concerned and to ensure that adequate preparations for appropriate preventive measures and equipment as well as emergency action plans as required by laws and regulations are met. Violators of these requirements of the laws and regulations shall bear the corresponding responsibility.

***Kinds of Liability for Pollution Damage***

The enterprise or individual may be ordered to bear either one or more than one of the following liabilities, depending on the gravity of pollution damage caused. Hence, the violator may incur "multi-liabilities".

**Administrative Liability**

Administrative liabilities for pollution damage are provided in relevant laws and regulations. The following are some of them:

1) Charges or fees. In cases where the release of pollutants goes beyond the limits of specific national standards, a fee shall be charged against those responsible for such release.

2) System of setting a time period for eliminating or controlling the pollution caused. Entities responsible for the release of pollutants beyond the limits of state standards are given a specific period of time within which pollution should be eliminated and controlled.

3) System of limiting or closing down production. This system shall be employed if pollution results from production. The enterprises that cannot comply with the national standards of pollutant release within a given date will be ordered either to limit their scale of production, stop production, or transfer to another place.

4) System of administrative warning and/or fine. An administrative warning and/or a fine in the light of the seriousness of the pollution damage may be issued to the head of enterprise and the person directly responsible for the pollution damage.

**Civil Liability**

Any enterprise or individual, whose activity caused marine pollution damage, shall be responsible for the elimination of pollution and compensate for the damage directly caused by its activities.

The laws and regulations provide the procedure of application for compensation for pollution damage.

**Criminal Liability**

Any official of the competent authorities who commits abuse of authority, dereliction of duty or practices favouritism and perverts the laws and regulations, shall suffer a disciplinary penalty, to be imposed by the unit to which he belongs or by the higher competent authority. If his acts cause severe damage to the national and people's welfare, and constitute a crime, he shall be put under investigation pursuant to the law for criminal liability.

In cases of violation of the law resulting in major pollution damage to the marine environment and causing deaths or injuries to persons or heavy losses of public and/or private property, judicial bodies may criminally prosecute those who are directly responsible.

## REQUIREMENTS FOR EIA AND ACTUAL PRACTICE

The EIA was required during the building of large and medium construction projects in the 1970s in China. The requirement for an EIA was formally enacted into law through the Interim Environmental Protection Law in 1979. Thereafter, this legal system was duly incorporated in laws and regulations concerning environmental protection. For instance, in 1981, the Management Measures on Environmental Protection of Construction Projects was issued as a special measure for executing the system of EIA. In 1989, the EIA requirement was reiterated in the EPL.

***Requirements for an EIA***

**Laws and Regulations Requiring EIA**

EIA is required by following laws and regulations concerning marine environmental protection:

1) EPL;

2) MEPL;

3) RLCP;

4) ROE;

5) Regulations Concerning Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects;

6) Regulations Concerning Prevention of Environmental Pollution by Ship-breaking;

7) Management Measures for Environmental Protection of Construction Projects;

8) Management Measures for Certification of Environmental Impact Assessment of Construction Projects; and,

9) Interim Measures and Principles for Standards of Fee Charging of EIA of Construction Projects.

**Implementation of the EIA**

**Procedures for and Content of the EIA**

Building projects that may cause environmental pollution shall comply with regulations concerning environmental protection of construction projects. Reports on EIA related to these projects shall assess the pollution caused by the construction project and its impact thereto and provide preventive measures. After passing the pre-examination by the competent authority, this EIA report must be approved by the environmental protection departments according to the set procedure. The department of planning shall not ratify the design plan descriptions of the construction project until after

the environmental impact statement on the construction project is approved. (Art. 13, EPL).

The examination of the procedure and contents of the EIA of the construction project are stipulated in the related regulations such as the regulations relating to the management of coastal construction projects, ship-breaking projects and projects for offshore oil exploration and exploitation.

In general, the EIA shall cover the following:

1) the environmental condition of the area where the project is located and of the area nearby;

2) the impacts the projects are likely to cause on the marine environment during the building process and after they are constructed;

3) the measures taken to protect the marine environment and the conclusion of the technical and economic feasibility thereof; and

4) the conclusion of an assessment of the marine environmental impact concerning the construction projects.

Additionally, according to the scale of the construction project, the examination and approval of the EIA shall be carried out by relevant competent authorities at different levels.

**Penalty for Violations**

Overall, the penalties for violating the EIA system are of two kinds based on the particular situation.

Those who proceed with the construction project without an approved EIA (Form), shall be ordered to stop and to take remedial measures by the environmental protection departments in the county or higher level, or be ordered to remove the construction within a period of time. The construction project may also be confiscated by the people's governments at the county or higher level. Likewise, the project may be imposed a fine of no less than 10,000 yuan (US$1,208) but no more than 100,000 yuan (US$12,077).

Those construction projects which are built but are not in accordance with the requirements and conditions under the approved EIA, or those which are put into

operation without completing the necessary environmental protection facilities, shall be ordered to stop their production or operation and may also be imposed a fine of no less than 10,000 yuan (US$1,208) but no more than 50,000 yuan (US$6,039) by the environmental protection departments.

### *Actual EIA Practice*

The EIA system is one of the most effective environmental management systems in China. From 1979 up to the present, it has played a very important role in the prevention of marine pollution. At present, the rate of compliance with EIA for large and medium construction projects has reached 100%. However, following the development of the market economy, new problems are emerging. Consequently, the EIA system needs to be strengthened to address these changes.

## REQUIREMENTS FOR THE USE OF MARKET-BASED INSTRUMENTS

### *The "Tripartite Regime"*

The "Tripartite Regime" refers to a legal system that requires the installation of facilities for the prevention of pollution of any new construction, reconstruction and extension project at the same time as the major part of the project. The Tripartite Regime is a significant legal regime of environmental protection in China. It is a very effective regime for executing the "prevention priority principle" and, in combination with the EIA, for controlling the newly emerging pollutant sources. This regime is also a legal guaranty for the investment of major funds into the control of new pollutant sources. Practically speaking, this regime reinforces the system of the EIA.

The Tripartite Regime is established by the EPL and is implemented by other laws and regulations in special fields:

> "Installations for the prevention and control of pollution at a construction project must be designed, built and commissioned together with the principal part of the project. No permission shall be given for a construction project to be commissioned or used, until its installations for the prevention and control of pollution are examined and considered up to the standard by the competent department of environmental protection administration that examined and approved the environmental impact statement." (Art. 26)

The execution of the Tripartite Regime is set forth in the same law:

> "When any construction project is put into production or operation without installation of [facilities for] preventing pollution or its installation is not consistent with state standards, it should be ordered to stop its production or operation and may be fined as well by the same competent authority in charge of examining and approving its EIA." (Art. 36)

In compliance with provisions of the EPL, the Tripartite Regime is stipulated in the MEPL and several Regulations concerning prevention of marine pollution. Thus, the Tripartite Regime is applicable to the construction projects and activities concerning marine environment, such as coastal construction projects, ship-breaking and offshore oil exploration and exploitation.

***Fee for Excessive Discharge***

The legal regime of levying fees on discharge is an important measure for executing the principle of "polluter pays". Under this system, any unit or individual, which discharges pollutant substances exceeding the related state or local standards, shall pay the discharge fee. Those fees are then collected and used as a special fund for the prevention and handling of environmental pollution. This regime not only prompts enterprises to control and eliminate the discharge of pollutant substances in order to reduce their production costs but also ensures a sustainable financial source for the management and prevention of environmental pollution.

This system is mandatory. Any unit or individual, which refuses to pay the fee for excessive discharge, will be fined. The competent authorities may apply for an order of mandatory execution from courts when the parties concerned neither pay nor bring a suit contesting the decision to impose a fine. Any unit or individual who fails to pay the fee for excessive discharge on time, will be ordered to pay an additional 0.1% of the amount of fine per day of delay from the date it was due.

Those who do not pay the discharge fee in accordance with regulations, in addition to paying the discharge fee for the excess of the standards and fine for delayed payment, shall be imposed a fine ranging from 1,000 (US$121) to 10,000 yuan (US$1,208) by the environmental protection departments concerned (Art. 29, RLP).

New pollutant sources and serious pollution caused calls for a higher fine. Enterprises which do not accomplish the required improvement within the fixed time limit shall be fined double the discharge fee and may be imposed a fine between 10,000 (US$1,208) to 100,000 yuan (US$12,077), or be ordered to stop and close down depending on the degree of damage and loss (Art. 28, RLP).

The discharge fee is collected as a special fund for the management of marine pollution. The fund is loaned as subsidies for the recovery of point pollutant sources and for integrated handling measures for management of environmental pollution. This fund serves as an important financial source for enterprises to reform their technologies and old installations for the prevention of pollution. The fund also provides the environmental protection agencies with more abundant financial sources for the improvement of their equipment and installations. Consequently, there are a series of rules and regulations relating to the management of this fund.

This system is carried out in conjunction with other legal regimes. All units or individuals are still responsible for relevant administrative, civil and criminal liabilities, even though they have paid the fee for excessive discharge.

***Recovery Fees***

Three kinds of fees are collected for using natural resources and environmental spaces.

Resources tax and compensation. According to the principle of "polluter pays, developer protects, destroyer recovers and user compensates" and the provisions of laws and regulations concerned, any unit or individual who is using the state-owned or collectively-owned natural resources and environment shall pay the resources tax as well as compensation for the use of natural resources. These collected taxes and compensation shall form part of the national and local revenues.

Fee for the use of sea areas. Sea area usage refers to activities that need exclusive occupation of certain sea areas including the seawater, airspace and seabed thereof for more than three months. This concept is defined by *The Interim Rules for Management of Sea Areas Usage (IREAS)* which was jointly issued by the Financial Ministry and the State Oceanic Administration in 1993. In compliance with the IREAS, eight coastal provinces out of 12 have issued their own rules and regulations for the management of the use of sea areas under their respective administrative jurisdictions.

Under the above mentioned Regulations, "sea areas usage" covers coastal construction projects, exploration and exploitation of offshore oil, mine and other natural resources, marine entertainment, discharge zones of land-based pollutants and dumping zones and such other activities. Consequently, any unit or individual that is engaged in these activities shall pay fees. The collected fees shall be part of the state and local revenues and shall be used mainly for the management of marine pollution.

## NATIONAL LEGISLATION/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

### *Legislative Mechanisms and Process*

The national legislation on marine pollution includes "Laws" and "Regulations". The national legislative bodies in China are the National People's Congress and its Standing Committee. At the local level, there are the Provinces' People's Congresses and their Standing Committees, and the Cities' People's Congresses and their Standing Committees, all of whom are directly under central government.

The State Council may issue "Administrative Regulations", "Management Measures" and "Regulations" for the implementation of laws at the national level. Governmental agencies are responsible for issuing rules and circulars applicable to their individual fields.

There are two ways by which a law or regulation is created. The drafting of the law or regulation may be initiated by government agencies, which may submit their legislative proposals and suggestions to the Legal Bureau of the State Council. The other is based on a suggestion coming from the delegates to the People's Congress.

After considering all relevant elements, the Legal Affairs Commission, which is one of organs under the National People's Congress, may empower the Legal Bureau of the State Council to organise the drafting of the Regulation or the Law. After drafting, the Legal Bureau shall submit the drafts of the law or regulation to the Commission. The draft will be formalised into law when it has been so decided by ballot and promulgated by the People's Congress or its Standing Committee. A Regulation, on the other hand, needs only to be checked and issued by the State Council.

Governmental agencies may issue management rules and measures within the scope of their official mandates.

### *Distribution of Mandates and Obligations*

The Constitution of China declares that "the State ensures the rational use of natural resources" (Art. 9), and "the State protects and improves the living environment and ecological environment, prevents pollution and other public hazards" (Art. 26).

Articles 6 and 7 of the EPL designate in general terms the agencies responsible for marine pollution:

> "**Article 6.** All units and individuals shall have the obligation to protect the environment and shall have the right to report on or file charges against units or individuals that cause pollution or damage to the environment.
>
> **Article 7.** The competent department of environmental protection administration under the State Council shall conduct unified supervision and management of the environmental protection work throughout the country.
>
> The competent departments of environmental protection administration of the local people's governments at or above the county level shall conduct unified supervision and management of the environmental protection work within areas under their jurisdiction.
>
> The state administrative department of marine affairs, the harbour superintendency administration, the fisheries administration and fishing harbour superintendency agencies, the environmental protection department of the armed forces and the administrative departments of public security, transportation, railways and civil aviation at various levels shall, in accordance with the provisions of relevant laws, conduct supervision and management of the prevention and control of environmental pollution.
>
> The competent administrative departments of land, minerals, forestry, agriculture and water conservancy of the people's governments at or above the county level shall, in accordance with the provisions of relevant laws, conduct supervision and management of the protection of natural resources."

The MEPL provides more detail with respect to the aforequoted provisions. Article 5 of the MEPL reads as follows:

> "The environmental protection department under the State Council is in charge of marine environmental protection in the whole country.
>
> The state administrative department of marine affairs is responsible for organising investigations, monitoring and surveillance of the marine environment and for conducting scientific research therein, and it is in charge of environmental protection against marine pollution damage caused by offshore oil exploration and exploitation and by the dumping of wastes into the sea.

The Harbour Superintendency Administration of the People's Republic of China is responsible for overseeing, investigating and dealing with the discharge of pollutants from vessels and for keeping under surveillance the waters of the port areas, and it is in charge of environmental protection against pollution damage caused by vessels.

The state agency in charge of fishery administration and fishing harbour superintendency is responsible for supervising the discharge of wastes by vessels in the fishing harbours and for keeping under surveillance the waters thereof.

The environmental protection department of the armed forces is responsible for supervising the discharge of wastes by naval vessels and keeping under surveillance the waters of the naval ports.

The environmental protection departments of the coastal provinces, autonomous regions, and municipalities directly under the Central Government are responsible for organising, co-ordinating, overseeing and checking marine environmental protection in their respective administrative areas, and are in charge of environmental protection against pollution damage caused by coastal construction projects and land-based pollutants."

### *Public Participation*

The Constitution, the Laws and the Regulations encourage the public to participate in environmental protection. The common expression is that "the People's Government encourage[s] and reward[s] units and individuals who have made remarkable contributions to protect and improve the environment".

In terms of actual practice, this is not sufficient. The contribution of the NGOs and the private sector is very small in the field of marine environmental protection in China. The primary reason is that in the mind of the public only the government and its agencies are responsible for the prevention of pollution and the protection of the environment.

## INTERNATIONAL CONVENTIONS AND INITIATIVES

### *Introduction*

China highly values the management of marine pollution through international or regional cooperation. Thus, China participated in many international conventions,

attended meetings and ratified most of these international conventions concerning the prevention of marine pollution and protection of the marine environment.

According to the Constitution of China, the international conventions to which China is a party, have the same effect as its domestic laws. However, on the basis of Civil Law and Civil Procedural Law of China, the application of international conventions shall prevail over the domestic laws of China whenever there is any contradiction between the provisions of the two, unless it involves provisions to which China has declared its reservation. In the absence of any provision as to which law shall apply, international law takes precedence over domestic laws (Art. 142, The Civil Law).

International conventions concerning marine environmental protection, which are ratified by China, therefore, shall be implemented, at least at the same level as the domestic laws in China. Furthermore, stipulations in international conventions concerning civil liabilities prevail over those in domestic laws should there be any conflict between them.

The supremacy of international conventions over domestic laws is expressly stated in some special laws for the purpose of emphasising the importance of the implementation of international conventions in certain fields. Below are some examples of such provisions:

1) "When there is a difference between the domestic laws of the People's Republic of China and the international conventions concerning environmental protection, which are ratified by People's Republic of China, the provisions of international conventions shall be implemented, unless China has declared reservation thereto." (Art. 46, EPL)

2) "Vessels engaged in international trade with a bulk oil carrying capacity of 2,000 tonnes shall, besides observing these regulations, be bound by the provisions of the International Convention on Civil Liability for Oil Pollution Damage, 1969." (Art. 13, RPV)

3) "All foreign vessels shall, besides observing these regulations, be subject to the same treatment as those accorded to Chinese vessels by the foreign countries concerned." (Art. 53, RPV)

4) "In the course of implementing petroleum operations, the operator and subcontractors shall comply with the relevant laws on environmental protection and safety of the People's Republic of China, and shall, by taking account of international practice when conducting operations, protect fishery resources and

other natural resources and prevent the environment, including the air, seas, rivers, lakes and land, from being polluted or damaged." (Art. 24, RPCF)

***Specific Instruments Ratified and/or Implemented***

**International Instruments Signed and Ratified by China**

To date, China has ratified most international conventions on marine environmental protection. The following is the list of international conventions and other instruments that have been signed and/or ratified by China:

1) Agenda 21;

2) the Washington Declaration (GPA);

3) UNCLOS;

4) MARPOL 73/78, Annex III and Annex V;

5) the London Convention 1972;

6) the Intervention Convention and its 1973 Protocol;

7) CLC 1969 and its 1976 Protocol;

8) the Salvage Convention; and

9) the Basel Convention.

So far, two out of the 11 important international conventions concerning the prevention of marine pollution and protection of the marine environment have yet to be ratified by China. These are FUND 1971 and the OPRC.[1]

[1] China ratified OPRC in 1999.

**Special International Instruments for Implementation of International Conventions**

Agenda 21 and the UNCLOS

In the spirit of UNCED in 1992, the Chinese Government has formulated China's Agenda 21 - White Paper on China's Population, Environment and Development in the 21st Century. It is determined to implement the sustainable development strategy for its future development. In the light of implementing Agenda 21 in the marine territory, China's Agenda 21 makes the conservation and sustainable development of marine natural resources one of its major program areas. As a result, China Ocean Agenda 21 was issued in 1996 as an integral part of China's Agenda 21. The China Ocean Agenda 21 sets forth the basic strategies, strategic objectives and fundamental countermeasures for the sustainable development of the ocean, in addition to major program areas.

In 1982, China signed UNCLOS, and, consequently, issued its Law of Territorial Sea. China falls behind with its legislation for implementing UNCLOS as compared to the other countries in the East Asian Region. To date, its Law of Exclusive Economic Zone and Continental Shelf is yet a draft and is still being discussed by the National People's Congress. However, with regard to the national legislation on the implementation of Part XII of the UNCLOS on the Protection and Preservation of the Marine Environment, China is ahead of the other countries with the passage of its MEPL in 1982, followed by six implementing Regulations on the prevention of marine pollution from different sources.

GPA

Having suffered the serious consequences of marine pollution caused by land-based sources, China has already made great efforts to promulgate national legislation concerning the prevention of marine pollution from land-based sources prior to the formulation of the Washington Declaration in 1995 to which it is a signatory.

The legislation on the control of land-based pollutant sources is quite detailed. It includes the prevention of marine pollution from land-based pollutants in general and it deals with coastal construction projects and ship breaking in particular. National legislation on the prevention of marine pollution from land-based sources are embodied in Chapters II and IV of the MEPL, and three special Regulations (See Section Two, "IV"). In addition, there are a number of regulations and management rules for management of wastes coming from industrial, agricultural and municipal sources.

Of great importance is the control and prevention of pollutants from land-based sources into sea areas. It is obviously necessary to amend and update the national

legislation of China on land-based pollutant sources to properly comply with the new requirements of the GPA.

MARPOL 73/78

China ratified MARPOL 73/78 in 1983, its Annex V in 1988 and Annex III in 1994. The laws and regulations for the implementation of MARPOL 73/78 are divided into two categories. One concerns general requirements for ships, including technical standards of ships, proper equipment as well as crew training in order to build proper capacities for preventing marine pollution. The other involves the prevention of marine pollution from vessels. The list of legislation on the prevention of marine pollution from vessels can be found in Part 2.0, Section Two of this paper.

Because the major laws and regulations relating to the control of marine pollution from vessels were issued before China's ratification of the MARPOL annexes, it is now necessary to review and add some crucial clauses to these laws and regulations for the proper implementation of MARPOL Annexes III and V.

The London Convention

The London Convention 1972 was ratified by China in 1985. The Regulations Concerning the Dumping of Wastes at Sea to implement the MEPL, particularly Chapter VI, were issued in the same year. The provisions concerning the control of marine pollution from dumping are also scattered in other relevant laws and regulations (See Part 3.0 of Section Two for detailed information). In practice, the laws and regulations concerning the management of dumping of wastes into the sea are effectively executed through several governing measures, such as a system of permit, zoning of dumping areas in the seas and supervision of the whole process of dumping by the competent authorities. The provisions of the laws and regulations are only for compliance with the London Convention 1972, but are not in response to the requirements of Protocol 1996 which is yet to be ratified by China.

The Intervention /Salvage Convention

China has ratified two international conventions concerning the prevention of marine pollution from marine casualties and incidents, namely, the Intervention Convention and its 1973 Protocol in 1990, and the Salvage Convention in 1994.

The current national legislation concerning salvage and dealing with marine casualty focuses on technical requirements, but has no provision directly requiring the protection from marine pollution when salvage has been undertaken. Additionally, there

are no definite provisions concerning measures for intervention of threatened pollution damage to seas outside its jurisdiction in the laws or regulations concerned.

The CLC and the FUND Conventions

China ratified CLC 1969 in 1977 and its 1976 Protocol in 1986 but not FUND 1971. With regard to the implementation of CLC 1979, the laws and regulations concerned have some general provisions. In practice, some measures have been taken to ensure compensation for pollution damage, such as requirements of financial insurance for ship owners. However, these regulations do not fully implement CLC 1969.

The Basel Convention

With regard to the control of marine pollution from transboundary movement of hazardous wastes and their disposition, there is no law or regulation in China specially focusing on this matter. There are, however, a number of provisions concerning the storage, transportation, use and disposition of hazardous substances and their wastes scattered in some administrative rules and circulars concerned. Some of these administrative measures have been carried out prior to China's ratification of the Basel Convention in 1992. New laws or regulations are thus needed for the purpose of fully implementing the Basel Convention.

***Reason For Non-Ratification or Non-Implementation of Conventions***

On the one hand, China has adopted a policy of active participation in international events concerning environmental protection. As a result, China has signed all of the significant international instruments concerning environmental protection and ratified most of the international conventions on the prevention of marine pollution. On the other hand, due to complex legal and technical circumstances, the situation relating to the implementation of conventions leaves much to be desired.

The primary reason for the non-ratification of some annexes or protocols of the conventions is that it is still impossible for domestic technical standards to measure up to the requirements in those instruments.

Additionally, the capability of personnel resources, be it in the law and policy making level or in the implementing level, is another major reason for the non-implementation of some requirements of the conventions.

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

### Capacity-Building for Legislation

China is one of the countries in the East Asian Region with well-developed environmental legislation. The general legislation substantially follows international instruments/conventions. Under an "umbrella" framework or a general-hierarchical structure, the legislation on marine pollution has the advantage of focusing on all possible pollutant sources separately.

As a framework of legislation on marine pollution, the basic laws and regulations for implementation of international conventions concerned are quite sufficient. Thus, at the level of legislation, focus may be on, at least, the following areas discussed hereunder:

There is a need to unify the existing rules and administrative measures for the purpose of complying with international conventions at a higher and more effective level. One area of legislation that is not yet well developed in China is the implementation of the Basel Convention. Although currently, there are a number of rules and administrative measures in this field, the disadvantage is that they are issued by different governmental agencies dealing with relevant matters on a case to case basis and under the terms of office of different government officials. Consequently, the requirements and measures for the management of the transboundary movement of hazardous substances and their wastes and their disposal are scattered and not properly classified. Hence, it is necessary to set forth specific requirements and governing measures, including both general provisions and detailed technical standards, into an integrated law or regulation.

One of characteristics of the legislation on marine pollution is that it is more closely linked with international standards than national legislation. Hence, new developments in particular international conventions can not be ignored. It is necessary to review and amend existing laws and regulations as frequently as possible to make it more responsive to the new principles and requirements of international conventions, such as recent protocols or amendments to MARPOL 73/78 and the London Convention 1972.

In China, most of the existing regulations on the prevention of marine pollution from ships and dumping were issued in the 1980s. Thus, while their provisions complied with the provisions of conventions then, subsequent amendments and new stipulations in international instruments have not yet been considered.

It is important to ensure that new legislation is consistent with the existing national legislation on marine pollution. Furthermore, consideration of all laws and regulations concerning natural resources, environmental protection and sustainable development as well as penalties for violations shall be included. The latest and most important development among the relevant laws is in the Criminal Law. There is a new special chapter added, focusing on the punishment of activities that cause severe environmental damage.

Briefly, the basic provisions are already in the framework of the "umbrella" or general legislation. What is needed is for these provisions to be implemented by more definite and practicable management rules and measures. In the field of legislation and rule-making on marine pollution, one must consider that there is more than one governmental agency empowered to issue implementing rules and measures for the prevention of marine pollution within their own administrative jurisdiction in China. Hence, from the view of making more effective and practicable administrative ordinances, strengthening inter-agency consultation and cooperation is of great significance in order to avoid gaps, overlaps and conflicts in implementing the same laws and regulations.

***Capacity-Building for Implementation***

**Execution of Laws**

The task of examining the execution of laws concerning environmental protection in China has been carried out annually by the Standing Committee of the People's Congress and the State Council since 1993. However, more attention has been given to the enforcement of laws on land instead of those concerning marine environmental protection.

The enforcement of laws and regulations is hampered by unclear mandates or indistinct delineation of duties among maritime agencies at some levels. Among the agencies involved are the environmental protection department under the State Council (Environmental Protection Administration [EPA]), the state administrative department of marine affairs (State Oceanic Administration [SOA]), the Harbour Superintendency Administration, the state agency in charge of fishery administration and fishing harbour superintendency and the environmental protection department of the armed forces.

One of the consequences caused by the unclear mandates is the creation of duplicative systems of monitoring marine pollution. A monitoring network was built by the SOA under its function of organising investigations, monitoring and surveillance of the marine environment. However, similar networks have been re-built by other agencies, one after another.

The other obvious consequence of overlapping duties is the multiplicity of enforcement bodies or agencies executing laws in the seas. Several law enforcement bodies have been organised separately by the above-mentioned agencies.

Other than the overlapping of duties, there are some gaps as well in the light of the enforcement of laws concerning marine pollution. One of them is the lack of coordination among agencies concerned in responding to oil pollution due to the same gap in legislation.

The nature of management of marine pollution is that it involves various sectors and interagency cooperation. It will be helpful to resolve these problems if all agencies concerned are made aware of this fact. Moreover, a more definite law clarifying the mandates and duties of each agency is needed. With regard to capacity-building for the enforcement of laws at different levels, both national and local levels, it is of great importance that a mechanism of regular consultation and cooperation among concerned agencies be established.

**Technical Resource**

Certain equipment, such as waste reception facilities and treatment facilities are required for the implementation of the technical provisions of laws in compliance with the requirements of related international conventions. Some legal and financial systems have to be set up to ensure that these technical requirements are satisfied. However, there will be great difficulty in setting up such systems due to financial constraints and other reasons.

**Public Participation**

The prevention of marine pollution is still perceived by the public as being the task of the government and its agencies and not society nor the industries concerned. This is so, notwithstanding the many years of awareness-building and education programs as well as the embodiment of marine pollution prevention in laws and regulations.

Majority of the enterprises view the requirement for installation of equipment and adoption of measures for prevention of marine pollution as a heavy burden. Greater efforts are still needed to attract industrial circles and private sectors to invest in the field of marine environmental protection.

With the exception of those in government and its agencies, there are only a few scholars in universities and institutes currently engaged in relevant programs concerning

marine environmental protection, and in drafting legal instruments at both the national and local levels.

At this point, personnel capacity-building, including those involved in law and policy making and execution, and public education are arduous and long-term tasks in China.

The public, which includes those in industrial circles, agricultural circles and private sectors as well as NGOs, is a great force in China. They shall play an important role in capacity-building, drafting of legislation and enforcement of laws at present and in the future.

# Indonesia

## THE MARINE POLLUTION SITUATION IN INDONESIA

Indonesia is the biggest archipelago in the world, with over 17,000 islands stretched over a distance of 5,000 km from east to west, and 1,800 km from north to south. It has a coastline of 81,000 km. Total land area is 1,904,569 sq. km while the archipelagic waters and territorial sea together cover 3.1 million sq. km. The exclusive EEZ is an additional 2.7 million sq. km.

There are high mountain ranges, extensive lowlands and dense tropical rainforests in the large islands and abundant coastal and marine ecosystems: coral reefs, seagrass, mangroves and other tidal swamps.

An estimated 22% of the Indonesian population of 210 million lives in coastal areas. Sixty percent lives in the island of Java, which also has 76% of all Indonesia's factories and 80% of large and medium-sized industries.

There is no treatment system for domestic sewage. Most of Indonesia still uses septic tanks for disposal. The population concentration in Java and Bali contributes to untreated sewage and industrial effluent in the surrounding waters, especially in harbour areas and river estuaries. An ADB-funded pre-feasibility study for critical coastal areas is currently being undertaken. No lead agency has been identified as yet. Currently, BAPEDAL (*Badan Pengendalian Dampak Lingkungan*, or Agency for Environment Impact Management) together with other government units are undertaking awareness programs.

Industry -- composed mainly of the following: palm oil, tapioca, pulp, sugar textiles, leather tanning, electroplating, chemical (pesticides, caustic soda, ammonia) and petrochemical -- contributes 50% of the pollution.

Agricultural sources of pollution come from fertiliser and pesticide use. The contamination of the shallow groundwater in major cities is also a problem. Hazardous

wastes are generated from many sources and at all points of production, utilisation and disposal. There is a central treatment facility for hazardous waste in Jakarta that is privately owned but controlled by BAPEDAL. Three others are being constructed in East Kalimantan, Aceh in Northern Sumatra and Eastern Java. For the rest of the country, landfills are still the most common disposal method. BAPEDAL monitors these landfills according to its technical requirements.

The principal mineral resource of Indonesia is petroleum. It is the world's leading producer of liquefied natural gas. Tin, bauxite, nickel, copper, gold and coal are also mined. Indonesia's activities relating to offshore oil and gas, its geographic location along major world shipping lanes, and its nature as an archipelago make oil a major pollution threat to the country.

## NATIONAL MEASURES ON MARINE POLLUTION

In the Constitution of the Republic of Indonesia (1945) is the preambular statement: ". . . the Government of the Indonesian State . . . shall protect the whole of the Indonesian people and their entire native country . . . "

This statement is considered the basis for the duty of the State to protect the "Indonesian human resources and their environment." Article 33, paragraph 3 contains the fundamental guidelines for its national environmental policy: "Land and water and the natural resources therein shall be controlled by the State and shall be utilised for the greatest welfare of the people."

In the years following the 1972 Stockholm Declaration on the Human Environment, the five-year GBHNs (Guidelines of State Policy) issued by the People's Consultative Assembly, Indonesia's national legislature, included provisions on a national environmental policy. GBHN 1993-1998 has provisions relating to sustainable development. Repelitas (five-year development plans) translated the principles in the GBHNs into implementation policies. In 1982, pursuant to Repelita III, Act No. 4 of 1982, the Basic Provisions for the Management of the Living Environment (EMA-1982), was passed. EMA-1982 was the framework environmental legislation of Indonesia. Realising that EMA-1982 lacked effective implementation and recognising the need to revise EMA-1982, on September 19, 1997, Act No. 23, The Law Regarding Environmental Management (EMA-1997) entered into force. EMA-1997 is expected to be more effective than EMA-1982, especially in promoting sustainable development. EMA-1997 incorporates certain principles of environmental protection related to

sustainable development as follows:

1. Principles of State responsibility;

2. Principle of sustainability; and

3. Principles of beneficial exploitation.

After one year of enactment, the implementation as well as the enforcement of EMA-1997 remains weak. In fact, the provisions of the Act lack specific instruments of environmental law, such as an integrated licensing system and economic instruments. Hitherto, there have been no concrete steps to enact implementing regulations for EMA-1997, including regulations pertaining to the marine environment.

Other laws relating to the environment are the following:

- Act No. 5, passed in 1990, on Natural Resources and Ecosystem Conservation is the framework legislation for biodiversity, with provisions on protected areas, endangered species and wildlife protection.

- Act No. 24 of 1992 on Spatial Planning is the national legislation providing for an integrated national zoning plan. The Act mandates the formulation of national, provincial and district/municipality spatial use plans. The national plan must contain the following elements: a) national designations for protected areas, cultivation areas, and special areas; b) other norms and criteria of spatial utilisation; and c) guidelines for the control of spatial utilisation. These shall be implemented over a 25-year period.

  Land, sea and air are all encompassed in the requirements of this law (Art. 1(1)). The first objective of spatial use management (Art. 3) is "the realisation of an environmentally sound spatial utilisation based on the Wawasan Nusantara and National Resilience". *Wawasan Nusantara* is the Indonesian Archipelagic Concept, or its national definition of territory and self-identification. Coastal and marine areas are therefore integrated into the spatial use plan.

- Presidential Decree No. 75/1993 creates the National Co-ordinating Agency for Spatial Planning to implement the spatial use plan.

- Act No. 5 of 1994 ratified the United Nations Convention on Biological Diversity. It should be noted that in Indonesia, ratified international conventions have the force of law.

The environmental legislation that have particular application to the marine environment are Act No. 5 of 1983 on the EEZ and its implementing Government Regulation 15 of 1984 on the management of the living resources within the Indonesian EEZ. UNCLOS was ratified and obtained the force of law in the country through Act No. 17 of 1985.

***Marine Pollution in General***

Article 14, paragraph (2) of EMA-1997 provides that: "[s]tipulations on environmental quality standards, prevention of and coping with pollution and the restoration of its carrying capacity are regulated by Government Regulations."[1]

Coastal water quality standards are established by Section IV of Ministry of Environment Decree No. Kep-02/MNKLH/I/1988 on Guidelines on Environment Quality Standards.[2] Coastal waters are classified according to use as follows:

1. tourism and recreation area for bathing and swimming;

2. tourism and recreation area for the public and aesthetics;

---

[1] *Article 17 of EMA-1982 states that "[p]rovisions on the overall and sectoral prevention and abatement of damage and pollution of the living environment and its control shall be established by legislation." We have no knowledge of any regulations issued pursuant to EMA-1997 and therefore assume that the laws previously issued under EMA-1982 are still in force, in accordance with Article 50 of EMA-1997 which declares that "[u]pon enactment of this Law all existing regulations which are involved with environmental management continue to apply to the extent that they do not conflict with and are not replaced based on this law."*

[2] *While this law has been superseded by Government Regulation No. 20 of 1990 on Control of Water Pollution as regards water quality standards for Categories A-D, the provisions on water quality standards for coastal areas remain in effect.*

3. cultivation area of marine life;

4. ocean park and conservation area;

5. area for basic commodity and energy mining process and industry; and

6. water source cooler area for energy mining and industry.

However, these water quality standards have been found to be difficult to enforce because of technical and institutional constraints.

### *Land-Based Sources of Pollution*

Laws governing land-based sources of pollution focus on prevention of water pollution. The objective is the prevention of water pollution through regulation of water and effluent quality standards, established by Government Regulation No. 20 of 1990 on Control of Water Pollution. The regulation focuses primarily on the categorisation of water bodies according to use, determining the quality standards for these bodies and the effluent standards of discharges into them. The regulation mandates the Provincial Governor to perform these tasks. The State Minister of Environment is required to issue regulations for non-point sources of pollution as well. Effluent standards shall be determined for each type of activity (e.g., fertiliser, tapioca, and palm oil), presumably by the sectoral agencies.

#### **Industrial Waste**

Article 21, paragraph (1) of Act No. 5 of 1984 on Industry states:

> "Industrial enterprises have the obligation to make efforts in maintaining the balance and sustainability of natural resources to prevent damage and pollution resulting from their industrial activities."

Failure to comply will subject the violator to a prison term of up to 10 years and a fine of up to 750 million rupiah (about US$321,888[3]). This responsibility is reiterated in Article 14 of Government Regulation No. 13 of 1987 on Industrial Business License. However, these provisions are all couched in general terms and do not prescribe specific measures. Actual implementation is carried out through the EIA process, as applied until 1993 by Letter of Decision of the Minister of Industry No. 134/M/SK/1988 on the Prevention and Abatement of Pollution as a consequence of industrial activities. This regulation required different levels of analysis and planning for existing or new industrial enterprises depending on their impact on the environment. This regulation has been superseded by Government Regulation No. 51 of 1993, as implemented by Decision of the State Minister for Environment No. 11/MENLH/3/1994. This is discussed below in the section on EIA.

Ministry of Industry Decree No. 20/M/Sk/1/1986 on Control of Industrial Pollution to the Environment grants control of industrial pollution to the Ministry of Industry. "Control" is extensive, starting from the planning phase to actual production. The Ministry is also required to determine and promulgate "waste quality standards" for each industrial activity/type, study the causes of pollution and provide mitigation guidelines.

For the mining sector, the regulation issued by Minister of Mines and Energy No. 04/P/M/Pertamben/1977 on the Prevention and Abatement of Disturbances and Pollution as a Consequence of General Mining Undertakings (mining operations other than in oil and gas) and the Circular Letter of the Minister of Mines and Energy No. 02E/002/M.PE/1988 on the Supervision on the Management and Monitoring of the Environment in the Field of General and Mineral Oil and Gas Mining and the Exploitation of Geothermal Resources regulate pollution. They require the inclusion of measures for the prevention and handling of pollution in the workplan for mining operations. A bond may be required to be deposited by the holder of the mining authority for the purpose of insuring the proper implementation of such measures at the discretion of the Director General of General Mining or the Minister. Violation will result in cancellation of the Mining Authority and the sanction for a petty offence (as opposed to a crime or felony).

---

[3] *The US dollar exchange rates used throughout the report are the pre-Asian crisis exchange rates., i.e., the average US dollar equivalent of the pertinent currencies from January to June 1997.*

**Toxic and Hazardous Waste**

Article 17, paragraph (1) of EMA-1997 makes it the duty of every party responsible for a business and/or activity to carry out management of hazardous and toxic materials. Article 21 of EMA-1997 prohibits the importation of hazardous and toxic wastes. To emphasise this prohibition, Article 49 of the same law enjoins the issuance of a license for a business and/or activity which uses imported hazardous and toxic wastes.

Implementation of the Basel Convention was formerly regulated through Government Regulation No. 19 of 1994 regarding Hazardous and Toxic Waste Management. This Regulation was later amended by Government Regulation No. 12 of 1995. The latter Regulation established a permit system for the processing and transportation of hazardous substances.

Procedures on how to apply for a license have been regulated in the Decision of the Head of the Agency for Environmental Impact Control No. 68 of 1994 regarding Procedures on How to Apply for a Permit for the Storing, Collecting, Operation of Processing Equipment, Management and the Final Discharge of Hazardous and Toxic Substances. Further regulation can be found in the Decision of the Head of the Agency for Environmental Impact Control No.: KEP-01/BAPEDAL/O9/1995 regarding Procedures and Technical Requirements in Storing and Collecting Hazardous and Toxic Substances Wastes.

Government Regulation No. 19 of 1994 on Management of Hazardous and Toxic Substances Disposal provides the control mechanisms for "B3 wastes," which include hazardous and toxic wastes except radioactive substances. The regulation utilises the "cradle to grave" approach, or the treatment and handling of these wastes from production to disposal. Industrial enterprises are prohibited from dumping their toxic and hazardous wastes into the groundwater or air (Art. 5), and must instead install waste treatment facilities. If they are unable to do so, they must bring their toxic wastes to a waste treatment centre (Art. 6(1) and (2)). The importation of toxic and hazardous waste is also prohibited.

Procedures and a permit system for production, storage, collection, transportation and processing of such wastes are imposed by the regulation.

B3 waste processors are required to go through the EIA process (Art. 18). If an enterprise puts up its own waste treatment facility, its EIA must be integrated into the EIA of the main activity (Art. 25). Violations of provisions of Government Regulation 19 of 1994 result in an order to stop operations. The producer, collector, transporter and processor of B3 waste shall be responsible for emergency response in case of emission or spilling of the waste "under their responsibility" (Art. 35). This has been interpreted to mean individual and collective responsibility.

**Rivers**

In 1989, due to a lack of regulations on water pollution control despite the extreme pollution of rivers in densely populated areas and industrial estates, the Clean Rivers program called *Prokasih* was initiated. The program identifies priority rivers and priority factories discharging effluent into those rivers. Representatives of these priority factories sign a statement committing the factories to reduce waste. Through the years, the program has been expanded to include more rivers and more industries and factories. Sanctions for failure to comply with their commitments include temporary closure, closing of waste-producing activities, and sanctions that may be specified in the permit.

While data show that the target factories have reduced their waste, the rivers remain polluted. Such continuing pollution has been attributed to non-industry polluters. Recently, BAPEDAL found over a hundred factories discharging waste into rivers, although it was not specified whether any of these factories were participants of *Prokasih*. The factories were identified for the purpose of facilitating lawsuits by victims.

Even after the issuance of regulations on water quality standards, compliance remains low and enforcement by the government a problem. A factor that BAPEDAL is looking into is the possibility that Indonesian water quality standards are inappropriate, not being adapted to the situation of Indonesia.

One criticism against the program is that it creates an unfair advantage for the excluded enterprises, since only certain rivers are included in the program.

**Agricultural Waste**

The law governing the use of chemicals in agriculture is Act No. 12/1992 on Horticulture System, Regarding Fertiliser and Pesticide Use, implemented by

Government Regulation No. 7/1973 on the Control, Distribution, Storage and Use of Pesticides. Other detailed regulations are:

- Ministry of Agriculture Decree No. 280/Kpts/Um/6/1973 on Registration and License Application Procedure for Pesticide;

- Ministry of Agriculture Decree No. 429/Kpts/Um/9/1973 on Packaging and Labelling Conditions for Pesticide; and

- Ministry of Agriculture Decree No. 944/Kpts/Tp.270/11/1984 on Limitation for Pesticide Registration.

However, studies suggest that the elimination of pesticide subsidies from the government is the more critical factor for reduction of pollution from pesticides rather than regulation.

***Pollution from Sea-Based Sources***

In general, pollution of the marine environment within the EEZ (which includes all waters from the archipelagic baselines to 200 nautical miles beyond) is prohibited. Article 8 of Act No. 5 of 1983 provides: "(1) Whoever undertakes activities in the Indonesian Exclusive Economic Zone has the duty to take steps towards preventing, minimising, controlling and surmounting the pollution of the environment."

Article16(3) of the same Act also makes the polluter criminally liable.

Since this law does not cover the archipelagic waters (the marine area within the archipelagic baselines which enclose the archipelago through the outermost points of the outermost islands) or the territorial sea (a 12-mile strip around the archipelagic baselines), it is EMA and the laws on navigation that govern pollution therein.

Article 8 of the Continental Shelf Act provides that:

"anyone who engages in the exploration, exploitation and scientific study of natural resources in the Indonesian Continental Shelf, shall adopt measures to: a) prevent marine pollution in the Indonesian Continental Shelf and the atmosphere

above it; and b) prevent the spread of pollution in case it happens."

**Ocean Dumping**

Article 8 of Act No. 5 of 1983 on the EEZ provides: "(2) Discharge of waste in the Indonesian exclusive economic zone may be effected only after having obtained permission of the Government of the Republic of Indonesia."

The licensing system covers the place, method and frequency of dumping, and the type, content and volume of wastes to be dumped.

Pursuant to Article 20, paragraph (1) of EMA-1997, every person is prohibited from dumping waste to an environmental medium. In addition, paragraph (2) stipulates that every person is prohibited from dumping waste that originates from outside Indonesian territory to an Indonesian environmental medium. The authority to grant or reject a licensing application for dumping waste lies with the Minister of Environment. Under Article 20, paragraph (4), waste disposal to an environmental medium, as authorised by a permit, may only be carried out at a disposal site that is determined by the Minister of Environment.

Dumping is also indirectly regulated through the EIA process. EIA is required for several activities that may utilise dumping as a means for waste disposal. (See discussion on EIA below.)

There is no data regarding ocean dumping being utilised as a means of disposal of wastes from land-based sources, such as industry. However, as a policy, Indonesia does not allow dumping.

**Vessel-Source Pollution**

Act No. 21/1992 on Navigation is a comprehensive legislation on all aspects of shipping, including navigational aids and procedures, harbour and shipping management, prevention of and response to pollution by ships, transportation policies, search and rescue, human resources, and enforcement. It also provides penal provisions for violations. The law applies to all ships navigating within Indonesian waters and all Indonesian ships wherever they may be (Art. 4).

Chapter VIII is devoted specifically to prevention of and response to pollution from ships. Article 65 prohibits all ships from disposing of wastes or other substances except in accordance with the requirements. A violation of this provision is punishable by a maximum prison term of five years or a fine of 120 million rupiah (US$51,502). If any damage results, the prison term and/or fine shall be doubled.

The ship's captain, manager and all crewmembers are held responsible for preventing pollution from the ship on the ship's surroundings (Art. 66(2)). Failure by the ship's captain or manager to comply with this responsibility makes them criminally liable as well (Art. 120).

Article 66(1) requires all ships to be equipped with pollution prevention equipment, a requirement for a certificate of ship safety in accordance with Article 35. Should the ship's captain or ship's manager detect any pollution in the sea, whether or not coming from their own ship, Article 67 requires them to immediately tackle the pollution as well as report the matter to the nearest government official or nearest agency authorised to handle sea pollution. Failure to so respond makes them liable to a maximum prison term of two years or a fine not exceeding 48 million rupiah (US$20,601).

The ship owner is responsible for any pollution coming from the ship and must be insured to cover this responsibility (Art. 68). Failure to comply produces criminal liability (Art. 121).

In connection with oil pollution from ships, the Ministry of Communications has issued the following regulations: Decree of the Directorate General of Sea Communications (DGSC) No. Py.69/1/11-86 (31/10/86) requires ships to have oily-water separators and an oil discharge monitoring system according to the requirements of MARPOL 73/78. The Decision of the Ministry of Communications No. KM 86 of 1990 on the Prevention of Oil Pollution from Ships extended the requirement to both Indonesian and foreign ships of at least 100 gross tons operating permanently in Indonesia, including tug boats with a main engine propulsion of 200 HP and above.

Regulations implementing MARPOL certification requirements are found in the Ministry of Communications Decree No. 167/HM.207/Phb-86 on the International Certificate for the Prevention of Pollution by Oil and the International Certificate for Prevention of Pollution from Poisonous Liquid Material.

Regulations to implement the provisions of the Law on Navigation are still in the drafting stage.

With regard to port facilities, Minister of Communications Decree No. KM 215/AL/506/PHB-87 (19/9/87) on the Procurement of Shore Reception Facility also instructs the four gateway ports (Tanjung Priok in Jakarta, Tanjung Perak in Surabaya, Belawan and Makassar) to establish ship waste reception facilities. However, only Tanjung Priok and Tanjung Perak have done so. There are also facilities in Dumai, Plaju, Cilacap and Sorong that belong to Pertamina, the State-owned oil company. Sadly, the use of these facilities is far from optimal.

A Decree of the DGSC on the implementation of port state control according to the Tokyo Memorandum of Understanding on Port State Control has recently been issued.

Indonesia participates in regional agreements on preparedness and co-operation. The organisational centre of the ASEAN OSRAP is in the Office of the DGSC in Jakarta. Other agreements are the Sulawesi Sea Oil Spill Network Action Plan together with Malaysia and the Philippines and the Malacca Strait Agreement together with Malaysia and Singapore. The ASEAN countries co-operate with Japan under the Oil Spill Preparedness and Response (OSPAR) Project for equipment stockpiles and communications systems. Indonesia also has an oil spill response and co-operation program with Australia.

A draft Presidential Decree on Emergency Control of Oil Pollution at Sea is pending. This decree would define the composition and structure of response teams at national, regional and local levels. The DGSC would be the lead agency while Pertamina would be the supporting agency.

After the decree is issued, it will become the basis for the preparation of the National Oil Spill Contingency Plan. However, the operations prescribed by the draft decree have already been put into use during actual accidents and exercises. There are contingency plans at several levels. These levels are the: individual response management (for enterprises such as Pertamina), local response management (co-ordination level at Port Administrator level), provincial response management (co-ordination level at the Regional Office of the Department of Communications), and national response management (at the level of the DGSC).

Further regulation on the matter was provided in the Decision of the Minister of Communication No.: KM 86 of 1990 regarding the Prevention of Oil Pollution from Ships.

### Fishing Activities

Article 7 of Law No. 9 of 1985 prohibits any act which causes damage or pollution to fishery resources or their environment, except when done in connection with research or other scientific purposes. Violation shall be punishable by a maximum prison term of 10 years and/or a maximum fine of 100 million rupiah (US$42,918).

## LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGES

Under Article 30(1) of EMA-1997, environmental dispute settlement can be reached through the court or out of court based on the voluntary choice of the parties in dispute.

In case of court settlement of an environmental dispute, compensation is based on the following principle enunciated in Article 34(1) of EMA-1997:

> "Every action which infringes the law in the form of environmental pollution and/or damage which gives rise to adverse impacts on other people or the environment, obliges the party responsible for the business and/or activity to pay compensation and/or to carry out certain actions."

In addition to whatever action may be called for under Article 34(1), Article 34(2) of EMA-1997 authorises the judge to impose compulsory monetary payment "for every day of lateness in completion of such certain actions."

Article 35 of the EMA imposes strict liability on "the party responsible for a business and/or activity which gives rise to a large impact on the environment, which uses hazardous and toxic materials, and/or produces hazardous and toxic waste." The compensation is to be paid "directly and immediately upon occurrence of environmental pollution and/or damage."

One such application of the principle of strict liability may be found under CLC

1969 which Indonesia has ratified. Another application is Article 11 of Act No. 5 of 1983 on the EEZ providing for the strict liability of anyone who pollutes or damages the sea or resources within the EEZ. However, Article 12 provides that a ceiling for damage claims, as well as the method for "ecological investigation" should be specified. Article 11 of Act No. 5 of 1983 has not yet been implemented.

While time limits for bringing legal action are provided under the applicable Civil Procedures Law, Article 36(2) of EMA-1997 expressly exempts "environmental pollution" and/or damage which is caused by a business and/or activity which uses hazardous and toxic materials and/or produces hazardous and toxic waste" from such prescriptive periods.

Act No. 1 of 1973 on Indonesia's Continental Shelf also provides for a criminal penalty of up to six years imprisonment and/or a fine of one million rupiah (about US$42,900) for any violation of Article 8 thereof regarding prevention of marine pollution or the spread thereof in the Indonesian continental shelf.

The polluter in the EEZ is also liable for the rehabilitation cost. Article 16(3) of the same Act also makes the polluter criminally liable, to be punished under existing environmental law.

Chapter IX of EMA-1997 contains the criminal provisions of said law. Under Article 41 thereof, any person who, in contravention of the law intentionally carries out an action which results in environmental pollution and/or damage may be imprisoned for a maximum period of 10 years and fined up to 500 million rupiah (US$214,592). If a criminal act causes death or serious injury of a person, the person who carried out the criminal action is liable for a maximum imprisonment of 15 years and a maximum 750 million rupiah (US$321,888).

In case of negligent acts which cause environmental pollution or damage, the penalty is imprisonment for a maximum period of three years and a fine in the maximum amount of 100 million rupiah (US$42,918). If such negligence causes the death or serious injury of a person, the maximum period of imprisonment will be increased to five years and the maximum fine increased to 150 million rupiah (US$64,378) (Article 42).

Intentional release or disposal of substances, energy and/or components which are toxic or hazardous onto or into land, into the atmosphere or the surface of water, or the

importation, export, trade, transport or storage of such materials, operation of a dangerous installation, knowing or with good reason to suppose that the action concerned can give rise to environmental pollution and/or damage or endanger public health or the life of another person shall result in imprisonment for a maximum period of six years and a maximum fine of 300 million rupiah (US$128,755). The same criminal liability befalls one who intentionally provides false information or destroys or conceals or damages information which is needed in connection with an action enumerated above, knowing or with good reason to suppose that the action concerned can give rise to environmental pollution and/or damage or endanger public health or the life of another person. If the aforementioned acts cause the death or serious injury of a person, the person who carried out the criminal action is liable for imprisonment for a maximum of nine years and a maximum fine of 450 million rupiah (US$193,133) (Article 43). Performance of similar acts through carelessness will result in criminal liability of imprisonment for a maximum of three years and a maximum fine of 100 million rupiah (US$42,918). If the negligent act causes the death or serious injury of a person, the person who carried out the criminal action is liable for a maximum of five years imprisonment and a maximum fine of 150 million rupiah (US$64,378) (Article 44).

If the criminal act is done by or in the name of a legal body, company, association, foundation or other organisation, Article 45 provides that the fine shall be increased by a third.

Aside from the criminal penalties, those who commit any of the acts enumerated above may suffer the following consequences:

1. seizure of profits which were received through the criminal action;

2. closure of all or part of a business;

3. reparation of the consequences of the criminal action;

4. “requiring that what was without right neglected be carried out”;

5. “destroying what was without right neglected”; or

6. placing the business under administration for a maximum of three years (Art. 47).

Article 35 of Government Regulation No. 19/1994 on Management of Hazardous and Toxic Substances provides for civil liability for violation. Criminal liability is provided by reference to Article 43 of EMA-1982.

Environmental court cases in Indonesia have had mixed results, with more losses than victories for complaining victims. Reasons given are the following:

1. Based on Article 35 of EMA the strict liability principle is applied for the imposition of criminal liability;

2. Technical skills regarding environmental law enforcement are limited, from the administration offices to the police, prosecutors, and courts;

3. Public pressure, which plays an important role in enforcement, is not strong enough;

4. There is lack of consistency among government officials on the enforcement of environmental laws and the perception that such laws hinder development persists;

5. There is a lack of confidence in the integrity of law enforcers;

6. EIA has not been used effectively; and

7. Pursuit of criminal and civil actions involves high cost in terms of time, effort and money.

**REQUIREMENTS FOR EIA AND ACTUAL PRACTICE**

Every plan of a business and/or activity that can possibly give rise to a large and important impact on the environment must possess an environmental impact analysis pursuant to Article 15 of EMA-1997. An environmental impact analysis is necessary to obtain the license to conduct such business and/or activity (Art. 18).

Article 8 of the implementing Government Regulation No. 29 of 1986 requires such analysis for "development proposals" likely to have a significant impact on the

environment. Government Regulation No. 29 established an integrated process for co-ordinating the planning and review of proposed development activities. The process is called AMDAL (*Analisis Mengenai Dampak Lingkungan*).

Government Regulation No. 51 of 1993 simplified the EIA process. Some of the innovations of this instrument are:

1. Merging the EIA and the environmental monitoring and management plans into one document and evaluation process, and requiring implementation of such monitoring and management plans for issuance of a permit license;

2. Shortening the processing time;

3. Centralising evaluation where covered projects or activities are multi-sectoral;

4. Requiring planned projects affecting the government on a smaller scale to prepare just a Standard Operating Procedure (SOP) document overseen by the concerned government agency rather than an AMDAL; and

5. Expanding the scope of AMDAL to include multi-sectoral activities, zone-wide AMDALs and regional AMDALs.

Government Regulation No. 51 intends that the EIA process be used together with the Law on Spatial Planning (Act No. 24 of 1992), which deals with zoning, as a management tool.

Decision of the State Ministry of the Environment No. 11/MENLH/3/1994 (Guidelines for EIA) lists the following activities among others as having significant impact on the environment (and therefore needing an AMDAL):

1. exploitation of oil/natural gas;

2. transmission of oil/natural gas;

3. coastal reclamation;

4. drilling of the seabed;

5. establishment of a naval base;

6. sea park; and

7. waste disposal facility.

The relationship between environmental quality standards, EIA and environmental license is vaguely referred to in EMA-1997. As a consequence of the need for an "integrated environmental licensing system", there should be a competent authority in granting environmental licenses as an instrument of pollution prevention.

## USE OF MARKET-BASED INSTRUMENTS

In addition to establishing policies and taking measures to encourage the efforts to sustain continued development, "the government . . develops a funding system for efforts to preserve environmental functions." (Art. 8(2)e, EMA-1982)

This funding system refers to the use of incentives and disincentives. Indonesia has not yet made use of this provision except to grant an Environmental Award to persons who have undertaken outstanding efforts to protect the environment.

Art. 10(3) of EMA-1982 states that "[t]he right to control and regulate by the State . . . gives authority to: . . . regulate environmental taxes and retribution." This has been interpreted to mean the power to utilise MBIs. Unfortunately, no such provision has been carried over to EMA-1997.

## NATIONAL LEGISLATIVE/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

Under Article 9(2) of EMA-1997:

> "[e]nvironmental management is performed in an integrated manner by government institutions in accordance with their respective fields of tasks

and responsibilities, the public, and other agents of development while taking into account the integratedness of planning and implementation of environmental management policy."

***Distribution of Mandates and Obligations***

Policy formulation, implementation and enforcement of environmental laws is conducted at two levels in Indonesia. At the national level, the focus is more on "strategic issues", while the regional (provincial) level is more concerned with technical issues.

At the national level is the State Minister of Environment who is in charge of overall co-ordination and policy formulation. BAPEDAL is tasked by Presidential Decree No. 23 of 1990 to co-ordinate the AMDAL process. It is also in charge of the regulation of toxic and hazardous waste, issuance of permits for waste treatment operations, environmental quality monitoring and guidance of public participation.

At present, the Minister of State for the Environment and the Head of BAPEDAL do not have administrative competence, neither in the central government level nor in the regional areas. It is the Ministers of the sectoral departments who have competencies in granting environmental license. There is no integrated environmental licensing system yet.

There is no single authority responsible for marine environmental management in Indonesia. With regard to marine pollution, the responsible agency is the DGSC of the Ministry of Communications. Its duties include the certification of ships including pollution prevention requirements, port state control enforcement, law enforcement in seas within national jurisdiction, combating of oil pollution, and management of the oil pollution damage claims process. The DGSC is responsible for the implementation of international conventions related to marine pollution. Three of the DGSC's six directorates deal with maritime safety, marine environment protection and maritime law enforcement. These are the Directorate of Sea and Coast Guard, Directorate of Shipping and Marine Safety and the Directorate of Navigation.

The division of functions between BAPEDAL and DGSC in matters concerning marine pollution is not clear. In general, BAPEDAL is in charge of pollution through the EIA process and waste management. BAPEDAL asserts jurisdiction over port reception

facilities, for instance, which, as an implementation of MARPOL 73/78, the DGSC has planned out. The DGSC, on the other hand, has traditionally been responsible for oil pollution in the marine environment, but marine pollution is no longer limited to oil pollution alone. By DGSC's dealing with other types of waste, the perception in BAPEDAL is that DGSC is encroaching on BAPEDAL's mandate to deal with waste.

Sixteen other central government agencies, in one way or another, participate in addressing marine pollution, among them, the Ministries of National Development Planning, Industry, Mines and Energy, Agriculture, Forestry, Defence, Public Health, and Internal Affairs, the National Capital Investment Board and the National Co-ordinating Agency for Survey and Mapping.

At the regional level, the Regional Development Planning Agency (Bappeda) is responsible for co-ordinating regional development plans including those relating to the marine environment. The Regional Investment Co-ordinating Agency co-ordinates major investment projects in each region. The Environmental Bureau implements and administers national environmental policy at the regional level. The Environmental Study Centres are research and education units affiliated with universities, while the Regional Sectoral Offices are responsible for formulating technical policy and providing advice on the technical improvement of sectors.

The provincial governments have the power to issue regional policies and regulations, including on pollution, under Act No. 5 of 1974 on Basic Provision on Local Administration. When EMA-1982 was passed, this power was further reinforced under Article 18, paragraph 3, which provides that policy in the management of the environment at the regional level shall be carried out by the regional governments. In fact, the Special Capital District of Jakarta as well as the Province of East Java have had provincial regulations on pollution since 1971. Under Article 14 of EMA-1997, the Government can transfer part of its affairs to the local government to become part of the latter's general affairs. Regional governments are particularly charged with waste management within their jurisdiction.

***Role of Non-Government Organisations (NGOs) and Public Participation***

Chapter III of EMA-1997 defines the community's rights, obligations and roles. Article 5(3) specifies that "[e]very person has the right to play a role in the scheme of environmental management in accordance with applicable laws and regulations."

Article 7(1) of EMA-1997 declares that "[t]he community has the same and the broadest possible opportunity to play a role in environmental management." The succeeding paragraph enumerates the following means to implement the provisions of Article 7(1):

1. increasing independence, community empowerment, and partnership;

2. giving growth to community capability and initiative;

3. increasing community responsiveness in carrying out social supervision;

4. providing suggestions; and

5. conveying information and/or conveying reports.

Despite these provisions, consultation by government agencies with the public does not appear to be institutionalised in Indonesia.

Under Article 19 of EMA-1997, in issuing a license to carry out a business and/or activity, it is compulsory to take into account spatial management plans, considerations and recommendations of authorised officials who are involved with such business and/or activity and public opinion. The decision regarding the license to conduct a business and/or activity should then be made public.

Under Article 37(1) of EMA-1997, the community is given the right to bring a class action to court. If it is known that the community suffers as a result of environmental pollution and/or damage to such an extent that it influences the basic life of the community, the government agency responsible for the environment field can act in the community's interest (Art. 37(2)). In addition to the community, environmental organisations have also been given the right to bring a legal action "in the interest of environmental functions." (Art. 38(1)).

The Elucidation for EMA-1997[4] explains that the legal action taken by an environmental organisation cannot be in the form of a demand for compensation, but is limited to the following legal actions:

---

[4] *The elucidation is attached to the text of the law and explains some of its provisions.*

1. application to the court for a person to be ordered to undertake certain legal actions which are involved with the goal of preservation of environmental functions;

2. asserting that a person has carried out an action in infringement of the law because of their pollution or damaging the environment; and/or

3. ordering a person who carries out a business and/or activity to install or repair a waste treatment unit.

Unfortunately, marine environment NGOs in Indonesia usually focus on policy studies and are not viewed as being strong on public participation. Private sector groups also have the potential to participate under the same provision, but there is no indication that they actively do so at the present.

## INTERNATIONAL CONVENTIONS AND INITIATIVES

The fourth WHEREAS clause of EMA-1997 recognises that:

> "the implementation of environmental management in the scheme of environmentally sustainable development should be based on legal norms taking into account the level of community awareness and global environmental developments as well as international law instruments related to the environment."

### *Specific Instruments Implemented*

As mentioned above, Indonesia was one of the first countries to ratify UNCLOS. It has since then applied the provisions of the Convention as law. However, Indonesia has given priority to the provisions regarding territory and resource exploitation, and less priority to Part XII on the prevention and management of marine pollution. Still, it is ahead of many countries in the region in many respects, having ratified MARPOL 73/78 (Annexes I and II), CLC 1969 and FUND 1971. Indonesia has also ratified the safety conventions, including International Convention for the Safety of Life at Sea, 1960 and 1974, the Convention on the International Regulations for Prevention of Collisions at Sea, 1972, the International Convention on Load Lines, 1969, and the Convention on

Facilitation of International Maritime Traffic, 1965.

The Conventions concerning oil pollution are highly significant to Indonesia because of its status as an oil-producing country. Besides this, it imports oil as well. Being an archipelagic country, most of its transport within the country is by sea. Lastly, globally vital sea lanes through which large amounts of oil are transported pass through or are adjacent to Indonesian waters.

***MARPOL 73/78***

Having ratified MARPOL 73/78 in 1986 through Presidential Decree No. 46 of 1986, Indonesia's efforts at implementation have been under way for many years. Implementing legislation and regulation have been discussed above in the section on pollution from ships.

Port reception facilities are the biggest problem in the implementation of MARPOL 73/78. The only ports with reception facilities are Tanjung Priok and Tanjung Perak, which provide for oily waste, while Belawan has facilities for palm oil (falling under Category C and D waste, Annex II). There is also a temporary privately run chemical reception facility in Tanjung Priok.

The four gateway ports referred to above are in fact only a start since Indonesia has 330 ports plus 780 special ports for fishing and other dedicated uses. Furthermore, there is little incentive to use what reception facilities are available in Tanjung Priok and Tanjung Perak because of the cost. For instance, ship officers naturally would rather sell their used oil to unregulated recyclers than pay for disposal of the oil at the port reception facilities. It is estimated that only 25% of the total waste volume from ocean-going traffic are collected in Tanjung Priok. An exception perhaps to the problem is Pertamina, which has 128 terminals -- dedicated ports and jetties -- all over the country. Pertamina abides by national regulatory requirements and international oil industry standards as well.

A Port Environmental Improvement Study and Masterplan has recently been completed with the support of the World Bank. Eleven ports have been identified as sites for port reception facilities. Implementation of the Masterplan will begin as soon as funding sources are identified.

With regard to garbage, Indonesia is considering ratification of Annex V of

MARPOL 73/78. Under Act No. 5 of 1983 on the EEZ, the disposal by ships of garbage into the sea in the normal course is allowed with no need for permission. However, the more recent Navigation Law prohibits all ships from disposing of wastes or other substances except in accordance with Government Regulation. Simple facilities to collect garbage from ships at port for final disposal at local dumpsites, such as trucks or containers, are being considered.

It will take some time for Indonesia to develop capacity to implement Annex IV of MARPOL 73/78 on sewage because there are no on-shore facilities (community sewage or domestic waste treatment plants) for their disposal.

***CLC and FUND***

As mentioned above, ship owners are required to have insurance to cover the eventuality of a pollution-causing incident (Art. 68 of the 1992 Law on Navigation). Failure to comply results in penal sanctions (Art. 121). This is consistent with CLC 1969, although the Indonesian law is not limited to oil pollution. The law does not provide for any liability limits or the mechanics of implementation; however, these may be provided by government regulation.

At the moment, Indonesia is preparing for ratification of CLC 1992.[5]

The matter is different with regard to the FUND 1971. Indonesia ratified FUND 1971 in 1978, but in 1996, there was a recommendation, apparently from the oil industry, to denounce the Convention. The explanation was that, while the country contributes regularly to the International Oil Pollution Compensation (IOPC) Fund, it does not benefit from it at all. The instrument of denunciation was reportedly to be submitted at the same time as the instrument of accession for the 1992 CLC Protocol.

The reasons given for the lack of benefit from IOPC are:

1. Unlike most other member-states of FUND 1971, much of Indonesia's coast is in its natural state. Purely environmental damage (or damage to resources without owners) are not covered by the IOPC Fund, therefore, Indonesia would have little chances of recovery; and

---

[5] *Indonesia ratified CLC 1992 in 1999.*

2. Claim mechanisms, including surveillance and monitoring, are not yet well established in the country.

The result is the perception in Indonesia that it subsidises developed countries (whose resources are highly developed and therefore have costs which are easily determined) while getting nothing in return. It is therefore thought that CLC 1992 will be enough to cover any pollution incidents that may occur in Indonesian waters. However, this point of view does not take the other end into consideration -- situations where Indonesian ships cause pollution to other countries -- nor situations where preventive measures to prevent or minimise damage, which is compensable under the Convention, have been taken.

So far, however, the instrument of denunciation has not been submitted.[6]

***OPRC***

Although Indonesia already has a national program for oil pollution response and co-operation and participates in many regional exercises on the same (e.g., OSRAP) as discussed above, ratification of OPRC is still in process. No problems are foreseen with regard to the implementation of OPRC, once it is ratified, because of the preparatory activities already being carried out.

***London Convention 1972***

The London Convention 1972 is also in the process of being ratified. Indonesia agrees in principle with the London Convention. The national policy is not to permit ocean dumping. However, in the Note by Indonesia submitted to the IMO on the designation of archipelagic sea lanes (see discussion below), an attached map obviously taken into consideration in the designation of the sea lanes included "Mines, *Explosive Dumping Grounds* and Military Exercise Areas" (italics provided). Apparently, dumping as a method of disposal of explosives is still utilised by the military. Pertamina also disposes of dredged material in marine areas, after obtaining permission from BAPEDAL, the DGSC, or the Ministry of Forestry or Agriculture, depending on where the proposed dumping site is.

---

[6] *Indonesia denounced FUND 1971 in 1999.*

Considering the size and breadth of Indonesian waters, the biggest foreseeable problem is enforcement. However, the DGSC considers itself as capable and prepared to enforce the London Convention 1972 anytime that it is ratified. The legislation regarding the proper disposal of wastes is in place, but so far, the difficulty of enforcement is evident in the *Prokasih* program, for one.

***Basel Convention***

Indonesia has ratified the Basel Convention through Presidential Decree No. 61 of 1993. The Ministry of Environment is co-ordinating with several institutions for a programme of implementation. The problems encountered include lack of human resources, funding and equipment.

At present, a team, which is composed of government officials from the Customs, Foreign Affairs, and Justice Ministries, enforces the Convention in major ports. There are sub-technical working groups working on the regulation of the transport of hazardous waste between Indonesia and Singapore.

***Status of Other Conventions***

The Salvage Convention is also in the process of ratification, but at an earlier stage than the other conventions discussed above.

In connection with UNCLOS, Indonesia has recently "refer[red] a proposal to IMO, with a view to adoption" of sea lanes within Indonesian archipelagic waters as provided in Article 53 of UNCLOS. Three major sea lanes are designated.[7] Among the factors considered by Indonesia in the designation of these sea lanes are the need for navigation through Indonesian waters, hydrographic and natural marine conditions, fishing activities, oil and gas exploration and exploitation, underwater cables, pipelines and other structures, tourism, protection of the marine environment, national security and the capacity of law enforcement agencies to monitor navigation and overflight in the relevant areas.

---

[7] *The first passes from the South China Sea to Natuna Sea - Karimata Strait - Jawa (Java) Sea, exiting through Sunda Strait. The second starts from Sulawesi (Celebes) Sea through Makassar Strait, and exits at Lombok Strait. The third starts from the Pacific Ocean, passes through Maluku Sea - Seram Sea - Banda Sea, exiting at Ombai Strait-Sawu Sea, or Leti Strait-Timor Sea, or Arafura Sea.*

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

Indonesia's advantage is its commitment to the protection of its identity as an archipelagic state. From this flows its recognition of marine waters as part of its territory, vital to its survival. It has been consistent in taking action to protect its marine territory from threats of all kinds. Indonesia realises that the marine environment must be protected in common with its land area.

Indonesian basic legislation -- the Acts -- contain fundamental provisions composed almost like directions for the proper government agencies to issue implementing regulations on particular issues or concerns. The general regulations (Government Regulations) appoint the appropriate official or agency to further implement the regulation. The more detailed regulations are issued by the Minister's Decisions or the local ordinances. This renders the system flexible, and should facilitate the process of amendment to fit new standards. While this flexibility causes the proliferation of laws frequently superseding newly passed laws, the advantage of flexibility surpasses the disadvantage of complexity. However, the system could be a liability where the leadership is weak. Given the present momentum in favour of protecting the environment from pollution, such danger is not likely in the future.

Indonesia is one of the countries in the region with well-developed environmental legislation. The basic legislation substantially follows international standards. It is in the implementing regulations that more action needs to be taken. One area of legislation, which is not yet well developed in Indonesia, is the utilisation of MBIs to enforce environmental standards. The basic provisions can already be found in the existing legislation, but still need implementing legislation/regulation.

The country has to realise that a centralised command and control system is too inflexible and ponderous. To be effective, there must be strong law enforcement complemented by a strong court system. Such is not the case in Indonesia. As stated above, BAPEDAL has been given plenty of responsibilities. Its capacity to carry these out is however in question because of its small size in proportion to the country's size. It is also much too centralised.

The unclear division of jurisdiction between DGSC and BAPEDAL has led to an *impasse* in the ratification process of the London Convention 1972 and Annexes III, IV and V of MARPOL 73/78. There is still confusion over institutional arrangements and

responsibilities, and over the question of what should be in the legislative act and in the regulatory issuances.

This confusion in jurisdiction is the reason for several problems in the field of legislation and regulation in marine pollution and the ratification and implementation of relevant international conventions. Because it concerns the environment, BAPEDAL claims jurisdiction. On the other hand, the DGSC has the experience and competence to deal with matters related to navigation and has traditionally dealt with all matters relating to the sea. Marine pollution is a field that is inherently inter-sectoral, interdisciplinary, and inter-agency in nature. This can cause confusion and overlaps in a simple and straightforward bureaucracy. In a complicated bureaucracy like Indonesia's, who has to take care of a vast and complex marine environment, overlaps, gaps, and conflicts regarding jurisdiction are inevitable. The solution need not lie in more laws, but an understanding as to division of work. If a *modus vivendi* is impossible, then there could be a resort to something more formal with which all concerned agencies can live.

The EIA process has been shown to be a very important aspect of Indonesian environmental law, for it is used for the enforcement of substantive environmental laws. But currently, the lack of monitoring renders it ineffective. This points to the problem common to developing states, which is lack of expertise and competence proportionate to the country's territorial size and population. This, together with other factors, contributes to the lack of effective implementation. This in turn translates to the ineffectivity of legislation and regulation. More de-centralisation of responsibilities and functions could make pollution prevention and management more flexible, better adapted to specific marine environments, quicker to respond to needs, and more capable of integration.

Indonesia is currently engaged in a fundamental process of reform of its economic, legal and political systems. It is hoped that this legal reform will subsequently improve maritime legislation.

# Malaysia

## THE MARINE POLLUTION SITUATION IN MALAYSIA

Malaysia has been described as a maritime nation and a coastal state. Water areas that are significantly larger than the three landmasses put together surround the Malay Peninsula, Sabah and Sarawak. Some islands and islets within the sea mass also form part of Malaysia.

As a coastal state, the people of Malaysia have, for centuries, relied on the sea for food, trade, political relations and leisure. This dependence on the sea continues to increase with ongoing technological advancement in various aspects of marine-related activities.

Today, Malaysia enjoys the immense contribution of the sea towards its economic development and continued prosperity. This is illustrated by the fact that 80 to 95% of Malaysia's national, regional and international trade is seaborne. Ships to and from other countries transport crude oil, liquefied natural gas, palm oil and cars. The Strait of Malacca is one of the busiest waterways in the world, with an average of 300 vessels making the daily transit. Crude oil and chemical tankers constitute the largest number of transiting vessels in the Strait.

Malaysia's oil reserve is estimated at 4.3 billion barrels while its natural gas deposit is estimated at 78,700 billion cubic feet. Both resources are primarily found offshore. In 1993, the oil and gas sector alone contributed 7% to the national GDP. The Federal Government received a total of 11 billion ringgit (US$4.4 billion) of revenues.

The fishing industry, while relatively underdeveloped, presently employs 2% of the labour force. Current findings seem to indicate that there exists a vast potential for this sector to expand.

Rapid economic and industrial development has affected Malaysia's marine environment. The Malaysian Institute of Maritime Affairs (MIMA) Bulletin (1994) indicates that the major sources of marine pollution problems in the country consist of activities conducted on land. Sea-based activities contribute less than land-based activities, but the amount of pollution they contribute to Malaysia's waters is still significant.

Marine pollution from sea-based sources is largely attributed to accidents at sea. Incidents of oil spillage through collisions as well as operational and deliberate dumping of hazardous, toxic and oily slops from ships are a matter of great concern. The

Environmental Quality Reports of Malaysia's Department of Environment (DOE) cited 10 oil spill incidents in 1995, and 60 in 1996. Other sea-based pollution sources include shipping traffic, port operations, and offshore oil and gas exploration and production rigs.

Land-based activities, i.e., agricultural, urban and industrial activities, are also a source of pollution in the coastal areas of Malaysia, particularly along the West Coast peninsula.

Oil and grease, suspended solids and *Escherichia coli (E. coli)* were identified under the 1995 and 1996 Environmental Quality Reports of Malaysia as main contaminants of the coastal environment, being the end results of accumulated land discharges from all manner of development activities. Industrial activities involving heavy metals, such as mercury, lead, or cadmium also caused pollution of Malaysia's coastal waters.

Rivers form the main channel by which pollutants from land-based factories, housing and agriculture reach the sea. The quality of the country's rivers apparently continues to deteriorate, particularly in terms of silt and suspended sediments. Analysis reports mentioned in the 1996 Environmental Quality Report indicate that organic loading (especially from sewage and animal wastes) and silt (from soil erosion) constitute the primary sources of the country's river pollution. Industrial activities were likewise found to be the major source of heavy metal pollution in the rivers.

Most of the environment-related public complaints and legal actions recorded in the 1996 Environmental Quality Report pertain to air (75%), followed by water (11%), noise (4%) and others (10%). One hundred eighty-four legal actions with respect to water-related activities were recorded in 1996.

## NATIONAL MEASURES ON MARINE POLLUTION

### *Legislation and Regulations on Marine Pollution in General*

The management of environmental pollution in Malaysia is premised on the *Environmental Quality Act, 1974 (Act 127), as amended by Act A953 (Environmental Quality [Amendment] Act of 1996),* which is the principal law governing pollution issues in general. The Act is implemented through the Director General of Environmental Quality who is appointed by the Minister of the Environment. An Environmental Quality Council is likewise created as an advisory body to the Minister.

The Environmental Quality Act, 1974, as amended (EQA 1974) contains chapters on prohibition and control of pollution of the atmosphere, soil, and inland waters, noise pollution, discharge of oil and wastes into Malaysian waters, environmental labelling, environmental audit, and EIA.

Subsidiary legislation under the EQA 1974 include those relating to the environmental quality of sewage and industrial effluents, EIA, scheduled waste treatment and disposal facilities, and marine pollution control.

Licenses are required under the EQA 1974 to:

(a) pollute or cause or permit to be polluted any soil or surface of any land in contravention of the acceptable conditions specified under the law;

(b) emit, discharge or deposit any wastes into any inland waters in contravention of the acceptable conditions specified under the law; and

(c) discharge wastes into Malaysian waters. [Sections 24(1) and 25(1), EQA 1974].

Applications for contravention licenses under Section 25(1) of EQA 1974 decreased from 69 in 1995 to 52 in 1996.

On the policy level, the Malaysian government recently provided the institutional basis for a framework of policies for sustainable development through its *second Outline Perspective Plan, the National Development Policy Plan and the Sixth Malaysia Plan*. The concept and philosophy was that of one singular law dealing with a comprehensive range of issues such as air, water, noise and land pollution. A one-agency approach is being conceptualised to ensure coherence and uniformity in strategies and implementation in dealing with all types of pollution and environmental problems.

In the meantime, Malaysia relies on the EQA 1974, the EIA procedure and complementary legislation and procedures to promote sustainable development.

***Legislation and Regulations on Marine Pollution from Vessels***

Section 29 of the EQA 1974 prohibits the unlicensed discharge of environmentally hazardous substances, pollutants, or wastes into Malaysian waters. Section 27 of the Act strongly prohibits vessels from discharging or spilling oil or mixtures containing oil into Malaysian waters in contravention of the acceptable conditions specified by the Minister of the Environment for the emission, discharge or deposit of environmentally hazardous substances, pollutants, or wastes. Any person who violates either Sections 27 or 29 shall be liable to the payment of a fine not exceeding 10,000 ringgit (US$4,000) or to imprisonment of up to five years, or both.

Further legislation on pollution relating to vessels includes the *Malaysian Exclusive Economic Zone Act of 1984 (Act No. 311), the Merchants' Shipping Ordinance of 1952 (Act No. 70)* and the *Merchant Shipping (Oil Pollution) Act of 1994 (Act No. 515).*

The Malaysian Exclusive Economic Zone Act 1984, Act No. 311 (EEZA 1984) states that if any oil, oil containing mixture, or pollutant is discharged or escapes into the EEZ from a vessel, land based source, installation, device or aircraft through the atmosphere, or through dumping, those responsible for or in charge of the source are considered to be guilty of an offence and shall be liable to a fine of up to one million ringgit (US$400,000).

Under the said Act, the Director General of Environment is empowered to detain any vessel from which the oil, mixture containing oil, or pollutant escaped or was discharged where Malaysia's coastline or any segment or element of the environment or related interest is damaged or threatened to be damaged as a result of such discharge.

Part V-A of the Merchant's Shipping Ordinance, Act No. 70, 1952 (inserted vide A 792/91), which is applicable throughout Malaysia, also contains provisions regarding pollution from ships.

Section 306(d) of the Ordinance authorises the Director of Marine, in consultation with the Director General, after being satisfied that oil or any harmful substance may likely escape from a ship, to take action in relation to such ship or its cargo for the purpose of preventing or reducing the extent of pollution or likely pollution of any Malaysian waters, any part of the Malaysian coast or reef. This includes prohibition from removing the ship from a place, or cargo from the ship, or the removal thereof to some other place.

The Minister of Transport is empowered under the Ordinance to make such rules and regulations necessary to provide for the carriage or storage of oil or harmful substance at sea, the control of pollution from ships and for matters connected therewith, including rules for the design, construction and alteration of ships, its inspection and certification.

Finally, the Merchant Shipping (Oil Pollution) Act 1994, Act 515 provides for civil liability of ship owners for oil pollution, the legal personality and liability of the IOPC Fund, as well as the jurisdiction and enforcement of its provisions through the Director of Marine.

***Legislation and Regulations on Marine Pollution from Dumping***

The law which governs dumping activities within Malaysia's EEZ is EEZA 1984.

The London Convention's definition of "dumping" and the activities excluded therefrom are evidently incorporated into the provisions of the Act. "Dumping" under EEZA 1984 refers to: (a) any deliberate disposal of waste or other matters from vessels, aircrafts, platforms or other man-made structures; or (b) any deliberate disposal of vessels, aircraft or other man-made structures. Dumping does not however include

disposal of waste or other matters incidental to, or derived from the normal operations of the vessels, or placement of matters for purposes other than mere disposal thereof.

The owner or master of the vessel shall be guilty of an offence and be liable for a fine not exceeding 100,000 ringgit (US$40,000) if any oil, mixture containing oil, or pollutant is discharged or escapes into Malaysia's EEZ by dumping.

Nonetheless, dumping of wastes or other matters may be carried out under a license issued by the Director General and subject to such conditions as he may impose.

Unlike the provisions of the London Convention 1972, the Act does not contain any article on record keeping and monitoring of conditions of sea. Absent also are provisions on the need to promote regional co-operation for monitoring and scientific research, the lists of wastes that cannot be dumped, and the wastes for which special dumping permits are required. Finally, the Act does not provide criteria governing the issuance of these permits.

Opportunities to include these issues in later legislation are however possible since the King, known as the Yang di-Pertuan Agong, is authorised under the Act to make further regulations for carrying out its provisions.

***Legislation and Regulations on Marine Pollution from Land-based Sources***

Pollution from land-based sources is generally governed by Sections 24, 25, 34B and 51 of the EQA 1974.

Specific regulations on pollution from land-based sources were subsequently passed. Among these are the *Environmental Quality (EQ) (Licensing) Regulations 1977, EQ (Prescribed Premises) (Crude Palm Oil) Regulations 1977 and EQ (Prescribed Premises) (Raw Natural Rubber) Regulations 1978*, on control of agro-based water pollution*; EQ (Sewage and Industrial Effluents) Regulations of 1979* on control of municipal and industrial wastewater pollution; *EQ (Scheduled Wastes) Regulations 1989, EQ (Prescribed Premises) Scheduled Waste Treatment and Disposal Facilities Order and Regulations 1989*, on control of toxic and hazardous wastes; *Customs Acts and Amendment Order Nos. 2 and 3, 1993* on prohibition of exports and imports of toxic and hazardous wastes; *Motor Vehicle Rules 1977*, on control of smoke and gas emissions; *EQ (Clean Air) Regulations 1978 and EQ (Control of Lead Concentration in Motor Gasoline) Regulations 1985*, on air pollution; and other separate *Environmental Impact Assessment (EIA) Guidelines* on municipal wastes and municipal sewerage.

Section 24 of the EQA 1974 provides for restrictions on the acts of polluting, causing or permitting the pollution of any soil or surface of any land. Such activities

must first be licensed and undertaken in consonance with the acceptable conditions specified by law.

One is deemed to pollute any soil or surface of any land if (a) he places in or on any soil or in any place where it may gain access to any soil any matter whether liquid, solid or gaseous; or (b) if he establishes on a land a refuse dump, garbage tip, soil and rock disposal site, sludge deposit site, waste-injection well or otherwise uses land for the disposal of or as a repository for solid or liquid wastes so as to be obnoxious or offensive to human beings or interfere with the underground water or to be detrimental to any beneficial use of the soil or surface of the land.

Any person who contravenes this provision shall be guilty of an offence and shall be liable to a fine not exceeding 100,000 ringgit (US$40,000) or to imprisonment not exceeding five years or both. The amount of fine shall be increased by an amount not exceeding 1,000 ringgit (US$400) a day for every day that the offence is continued after notice is given by the Director General.

Part IV, 9-10 of the Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979 prohibits any person from discharging or causing or permitting the discharge of (a) any effluent in or on any soil or surface of any land; or (b) any solid waste or sludge that is generated from any production or manufacturing processes or from any effluent treatment plant in or on any soil or surface of any land without prior written permission of the Director General.

Finally, Section 3 of the Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order, 1989 prescribes the occupation or use of the following premises without a license as an offence: off-site treatment facilities, off-site recovery facilities, scheduled wastes incinerators; land treatment facilities; and secured landfills.

The occupier of the enumerated premises is required under Section 6 to keep an inventory of the types and quantities of scheduled wastes received, stored, treated, recovered, destroyed, disposed, or otherwise handled at the prescribed premises.

Sections 25 and 22 of the EQA 1974 provide the same restrictions found in Section 24 thereof on the emission, discharge or deposit of any environmentally hazardous substances, pollutants, or wastes into any inland waters and into the atmosphere.

Any person causing or permitting the discharge of obnoxious or offensive odours, the burning of any wastes of the trade, process or industry, or the use of any fuel burning equipment not equipped with the appropriate device or control equipment is considered to be polluting the atmosphere. On the other hand, one is deemed to pollute inland waters if such person:

(a) places wastes in any waters or place where it may gain access to any waters; or

(b) places any wastes where it falls, descends, drains, evaporates, is washed, blown, or percolated, or likely to be placed in such a position, or causes or permits such wastes to be placed in such a position; or

(c) causes the temperature of the receiving waters to be raised or lowered by more than the prescribed limits.

Pollution of inland waters or of the atmosphere without the required license or in contravention of acceptable conditions specified by law shall make such person guilty of an offence and liable to the same penalties provided under Section 24 of the EQA 1974.

Section 34B of the EQA 1974 also prohibits anyone from placing, depositing or disposing of, or causing or permitting to place, deposit or dispose of, any scheduled wastes on land or into Malaysian waters except at prescribed premises.

Part III, 6 of the EQ (Sewage and Industrial Effluents) Regulations, 1979 absolutely prohibits any person from discharging or causing or permitting the discharge of any wastes into any inland waters. Standard methods of analysing effluents and parameter limits of effluent discharge into inland waters are established.

In all cases of land-based sources of pollution, Part II, 5 of the EQ Regulations, 1979 requires the approval by the Director General of any plans to carry out any work, building, erection or alteration that may result in a new source of effluent discharge or cause a material change in the quantity or quality of the discharge from an existing source.

***Legislation and Regulations on Marine Pollution from Toxic, Hazardous and Nuclear Waste***

Malaysia has in recent years developed a set of regulatory provisions related to the control and management of toxic and hazardous wastes. The regulations are based on the "cradle to the grave" principle, i.e., the concept that wastes should be properly managed or controlled from its generation up to the disposal stage. A facility which generates, stores, transports, treats or disposes scheduled wastes is subject to the following regulations:

(a) EQ (Scheduled Wastes) Regulations, 1989;

(b) EQ (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order, 1989;

(c) Customs (Prohibition of Export) Order (Amendment) (No. 2), 1993; and

(d) Customs (Prohibition of Import) Order (Amendment) (No. 3), 1993.

The definition of Toxic and Hazardous Wastes is stated under the EQ (Scheduled Wastes) Regulations, 1989. The first Schedule of these regulations defines 107 categories of toxic and hazardous wastes, covering all but radioactive wastes that are controlled by the Atomic Energy Licensing Act, 1984. Specifically excluded from the definition are the municipal wastes and municipal sewerage that are covered by separate laws and guidelines.

These regulations place several responsibilities on ship owners and their agents who engage in tanker desludging activities in Malaysian waters. They are required to notify the DOE of any waste generation, treat and dispose of waste at prescribed premises, ensure the proper storage and labelling of wastes, keep a complete inventory of wastes and finally, maintain consignment notes of the delivery of wastes to treatment and disposal facilities.

Six types of premises prescribed under the EQ (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order, 1989 require the written permission and license from the DOE prior to the onset of operations. These prescribed premises include all but five prescribed activities listed under Section 18 (a) of the EIA Order and land treatment facilities, such as sludge farming of oily wastes or sludge. The regulations of the Order list the procedure for license application, renewal and ownership transfer as well as requirements for record keeping of waste generated, handled and disposed of for submission to the DOE.

In 1993, a new set of control procedures under the Customs Act of 1967 was enacted in order to enforce the requirements of the Basel Convention in Malaysia. These are the *Guidelines for the Storage of Scheduled Wastes,* the *Customs (Prohibition of Exports) (Amendment) (No. 2) Order 1993,* and *Customs (Prohibition of Imports) (Amendment) (No. 3) Order 1993.*

These Orders, enforced together by the Royal Customs and Excise Department and the DOE, specify that any export or import of toxic and hazardous wastes out of or into Malaysia is prohibited unless prior written approval is obtained from the Director General of Environmental Quality, the designated Competent Authority and the Focal Point. In exercising his authority, the Director General has to ensure that the import and export of wastes are managed by the approved facilities in an environmentally sound manner.

Section 34 B of the EQA 1974, which is a new provision under the most recent amendatory legislation, now explicitly prohibits any person to:

(a) place, deposit, or dispose any scheduled wastes on land or into Malaysian waters, or cause or permit to do such acts, except at prescribed premises;

(b) receive or send, or cause or permit to be received or sent any scheduled wastes in or out of Malaysia; or

(c) transit, or cause or permit the transit of scheduled wastes without prior written permission of the Director General.

Any person who is found violating the said provision shall be guilty of an offence and shall be liable to a fine not exceeding 500,000 ringgit (US$20,000) or imprisonment for a period not exceeding five years, or both.

***Legislation and Regulations on Marine Pollution from Seabed Activities***

Seabed activities in Malaysia are regulated by the Continental Shelf Act, 1966 (Act 83) in consonance with the Petroleum Mining Act, 1966, the Petroleum (Safety Measures) Act 1984 and the Petroleum (Safety Measures) (Transportation of Petroleum by Pipelines) Regulations 1985. Portions of the EEZA 1984 are also applicable to certain aspects of the continental shelf.

The Continental Shelf Act defines "continental shelf" as:

> "the sea-bed and sub-soil of submarine areas adjacent to the coast of Malaysia but beyond the limits of the territorial waters of the States, the surface of which lies at a depth no greater than two hundred meters below the surface of the sea, or, where the depth of the superadjacent water admits of the exploitation of the natural resources of the said areas, at any given depth."

All rights with respect to the exploration of the continental shelf and the exploitation of its natural resources are vested in Malaysia and may be exercised by the Federal Government.

Except in accordance with the Petroleum Mining Act, 1966, the Continental Shelf Act prohibits the exploration, prospecting, or undertaking of operations for obtaining any minerals or petroleum in the seabed or subsoil of the continental shelf. Section 3 of the Petroleum Mining Act requires the issuance of a license or entry into an exploration agreement before such activities are undertaken. The Minister has absolute discretion on the granting of licenses.

Any contravention of this Act or the conditions of the license is considered as an offence. Upon conviction, the offender shall be made to pay a fine not exceeding 20,000 ringgit (US$8,000) or imprisoned for a term not exceeding two years or both. In addition, all machinery, tools, plants, buildings and other properties together with any minerals or other products obtained from the area shall be forfeited in favour of the government.

As regards the seabed and subsoil of the submarine areas within the limits of the territorial waters of the States, its exploration may be prohibited or restricted through regulations that may be issued by the Yang di-Pertuan Agong when the same could result in any unjustifiable interference with navigation, fishing, or the conservation of the living resources of the sea.

The Petroleum (Safety Measures) Act 1984 governs the transportation of petroleum by pipelines. Written permission from the Appropriate Authority must be obtained prior to the operation of any pipeline. Among the documents required to be submitted by the pipeline owner is a Written Emergency Plan for implementation in the event of system failure. Included in the plan are procedures for prompt and remedial action providing for the protection of the environment, minimisation of property damage and limitation of accident discharge from the pipeline.

Finally, the provisions of the EEZA 1984 prohibiting dumping of wastes in the EEZ of Malaysia except where authorised by the Director General of Environmental Quality under a license are applicable to certain areas in the continental shelf.

**LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGES**

Before 1994, Malaysia had no clear legal regime of liability specifically for marine pollution damages. Civil or criminal liability could ensue only in instances where there was failure to secure the necessary licenses for prescribed activities, or non-compliance or violation of the conditions imposed under issued licenses.

Failure to secure the necessary licenses for prescribed activities, being an offence under the EQ Regulations, could subject the offender to the penalty of fine ranging from 1,000 ringgit **(**US$400) to 1 million ringgit ($400,000), depending on the offence, or to imprisonment for a maximum of five years or both. The same regime of liability was observed in cases of non-compliance or violation of the conditions imposed under the licenses.

With the enactment of the Merchant Shipping (Oil Pollution) Act (Act 515) in 1994, Malaysia's legal regime of liability for damages caused by oil pollution became more clearly defined. This legislation paved the way for Malaysia to accede to CLC 1969 and FUND 1971.

A duplicate of the CLC and FUND conventions, the Act provides for civil liability for oil pollution, recognition of the legal personality of the IOPC Fund, jurisdiction of the High Court and effect of its judgements, and its enforcement mechanism through Malaysia's Director of Marine.

### *Civil Liability for Oil Pollution*

Explicitly citing CLC 1969 in its preliminary provisions, Act 515 aims to ensure that adequate compensation is available to persons who suffer oil pollution damage resulting from maritime casualties involving oil-carrying ships. The Act contains similar provisions on the nature of the ship owner's liability, the limit of such liability, the type of vessels covered by the law, and the non-application of its insurance requirement to certain types of vessels.

The Act specifically provides that where, as a result of an incident, any oil is discharged or escapes from a ship, the ship owner shall be generally liable for any pollution damage caused by such discharge or escape (a) in any area of Malaysia or (b) to any area of any other Liability Convention country.

In such a case, the ship owner may apply to the court for the limitation of that liability to an amount not exceeding 133 special drawing rights (SDRs) for each ton of the ship's tonnage in respect of any one incident. This aggregate amount shall not exceed 14 million SDRs.

Actions to enforce a claim in respect of a liability incurred shall be commenced within three years from the date the pollution damage occurred or within six years from the date of the incident which caused the pollution damage.

Ships carrying in bulk a cargo of more than 2,000 tons of oil are required to secure certificates from the Director of Marine or other authorised persons showing that a contract of insurance or other financial security is in force to cover the owner's liability for pollution.

### *The IOPC Fund*

Section 16 of the Merchant Shipping (Oil Pollution) Act, 1994 recognises the legal personality of the IOPC Fund and its obligation to pay compensation to States and persons who suffer pollution damage and to indemnify the ship owner or its insurer for a portion of the ship owner's liability. The Fund is capable of assuming other rights and obligations and of being a party in legal proceedings before a court in Malaysia.

Contributions shall be payable to the Fund in respect of oil received by sea at port or terminal installations in Malaysia. The Fund is generally liable for pollution damage in any area of Malaysia if the person suffering the damage has been unable to obtain full compensation from the ship owner for any of the reasons specified under the Act.

An action to enforce a claim against the Fund must be made within three years from the date of the pollution damage or within six years from the date of the incident that caused the pollution damage.

The High Court of Malaysia has jurisdiction over the claims and liability cases covered by the Act. The Director of Marine is authorised to carry out powers and duties specified in the Act. His authority includes the power to arrest, detain and prosecute offenders of this Act and the power to board and search ships where he has reason to believe that an offence has been committed under the Act.

## REQUIREMENTS FOR EIA AND ACTUAL PRACTICE

### *EIA Requirement*

An EIA in Malaysia is mandatory for activities prescribed in the Environmental Quality (Prescribed Activities) (EIA) Order of 1987. The Order is made under the provision of Section 34-A of the EQA, which provides that: "The Minister, after consultation with the Council, may by order prescribe any activity that may have significant environmental impact as [a] prescribed activity."

Section 34-A further provides that any person undertaking a prescribed activity has to prepare and submit a report, which shall be in accordance with the prescribed guidelines, to the Director General of Environmental Quality for his approval. Section 34 A(2) states:

> "Any person intending to carry out any of the prescribed activities shall, before any approval for the carrying out of such activity is granted by the relevant approving authority, submit a report to the Director General. The report shall be in accordance with the guidelines prescribed by the Director General and shall contain an assessment of the impact such activity will have or is likely to have on the environment and the proposed measures that shall be undertaken to prevent, reduce or control the adverse impact on the environment."

Amended by the Environmental Quality (Amendment) Act, 1985, the Act now requires any person or agency intending to carry out a "prescribed activity" to submit a report on its potential effects on the environment to the Director General of the DOE for approval.

The EIA Order lists a total of 57 activities under 19 sectors as "prescribed activities" for which an EIA is mandatory. Many of these activities are defined in terms of project size (area) or capacity (quantum) while others are not defined by any unit of measure. The 19 sectors are:

(b) agriculture;

(c) airport;

(d) drainage and irrigation;

(e) land reclamation;

(f) fisheries;

(g) forestry;

(h) housing;

(i) industry (including shipyards);

(j) infrastructure;

(k) ports;

(l) mining;

(m) petroleum;

(n) power generation and transmission;

(o) quarries;

(p) railways;

(q) transportation;

(r) resort and recreational activities;

(s) waste treatment and disposal; and

(t) water supply.

Any contravention of the EIA provision is considered as an offence under the Act. A maximum fine of 100,000 ringgit (US$40,000) or imprisonment for a period not exceeding five years, or both shall be imposed upon any offender. In case the act is continued after a notice by the Director General requiring compliance with the provision has been served, a further fine of 1,000 ringgit (US$400) each day shall be imposed.

Amendments to the EIA Order were made in March 1995, exempting from its application those prescribed activities listed in the First Schedule of the Natural

Resources and Environment (Prescribed Activities) Order 1994 located in the State of Sarawak. This Order also empowers the Natural Resources and Environment Board to require the submission of a report on activities in Sarawak having impacts on the environment and natural resources.

***EIA Procedure***

Malaysia's EIA procedure consists of three major steps, namely, preliminary assessment, detailed assessment, and review.

"Preliminary assessment" relates to the initial assessment of the impacts due to those activities that are prescribed and normally commences at the pre-feasibility stage of project development. "Detailed assessment" is undertaken for those projects where significant residual environmental impacts have been predicted in the preliminary assessment. The detailed report is submitted for approval by the Director General of Environmental Quality prior to the giving of approval by the relevant Federal or State Government authority for the implementation of the project.

Review of EIA Reports is carried out internally by a technical committee in the DOE for preliminary assessment reports and by an *ad hoc* Review Panel appointed by the Director General for detailed assessment reports. Recommendations arising out of the review are transmitted to the relevant project approving authorities for consideration in making a decision on the project. The authorities include: (1) the National Development Planning Committee (NDPC) for Federal Government sponsored projects; (2) the State Executive Council (EXCO) for State Government sponsored projects; (3) various local authorities or Regional Development Authorities (RDA) with respect to planning approval within their respective area; and (4) the Ministry of Trade and Industry or MIDA for industrial projects.

All preliminary EIA Reports are processed and approved by the DOE state offices. All detailed EIA reports are processed and approved at the DOE headquarters.

***Actual EIA Practice***

It is noted that the EIA procedure in Malaysia was designed to follow the integrated project planning concept requiring EIA to be carried out at the pre-feasibility and feasibility stages. The adoption of this approach is laudable in the sense that the necessity of conducting an EIA is already determined at the onset of project development, or during the project identification stage, and continues from the assessment phases up to the actual project construction and operation through monitoring activities.

Ideally, the integration of EIA into Malaysia's existing planning and decision-making structures is expected by policy implementers to facilitate better decision-making.

Costly mistakes in project implementation are essentially avoided because of timely and appropriate consideration of environmental damages that are likely to arise during this phase, or because modifications are committed to be made to ensure environmental acceptability of the project.

Among the issues and problems raised regarding the implementation of EIA in Malaysia were: lack of awareness on the strength of EIA as a planning tool; perception that EIA is a "stumbling block" to development leading to delay in obtaining decision on EIA reports; timing of report submission; and problems related to legal and enforcement matters.

One concern with respect to the proponents is their submission of reports without adequate study and late in the project cycle. Such behaviour reduces EIA to a mere formality. The problem is further aggravated when no options are presented for siting, technology and mitigation. Additional information normally required by the government from proponents to augment an inadequate EIA also contribute to further delay in the processing of EIAs.

Nonetheless, it is noted that the capacity for implementation of the EIA procedure in Malaysia was strengthened beginning 1992 through the increase in the number of personnel and several changes in administrative procedure for reviewing of EIA reports within the DOE.

Arising from concerns expressed regarding unnecessary delay in decision-making, reports and recommendations were produced separately by the Malaysian Administrative Management and Modernisation Planning Unit (MAMPU) and a special committee formed under the Environmental Quality Council. The DOE subsequently began to implement some of the recommendations with a view to implementing the others. Efforts to strengthen the effectiveness of EIA implementation were also considered by the Environmental Law Review Committee whose recommendations include amendment of the EIA requirement affecting hill development and for the State Governments to institute EIA requirement in their resource-based laws.

A Geographical Information System (GIS) to develop resource information database in visual and graphic form for resource planning and management was considered to be another milestone.

Finally, decentralisation efforts were effected in 1992 when the state offices of the DOE were authorised to process EIAs.

**REQUIREMENTS FOR THE USE OF MARKET-BASED INSTRUMENTS**

Other than the EQA 1974, there is no clear legislation on the use of MBIs. Nonetheless, the concept was introduced in Malaysia in the early 1970s and has been implemented directly and indirectly for the major polluting industries such as the agro-based industries and toxic and hazardous wastes generators. This approach, among others, involves the imposition of license fees, the phasing of standards, the assessment of an effluent-related fee based on the "polluter pays" principle the full or partial waiver of the effluent-related fee for industries conducting research on effluent treatment, the granting of tax incentives, especially to industries that reduce emissions and the conferment of pioneer status for five years to companies engaged in an integrated operation for the storage, treatment and disposal of toxic and hazardous wastes.

The following licenses are required under the EQA 1974*:*

(a) Section 18 (1) - License to occupy or use prescribed premises;

(b) Section 22(1) - License to emit or discharge wastes into the atmosphere in contravention of the acceptable conditions specified under Section 21;

(c) Section 23(1) - License to emit or cause or permit to be emitted any noise greater in volume, intensity, or quality in contravention of the acceptable conditions specified under Section 21;

(d) Section 24(1) - License to pollute or cause or permit to be polluted any soil or surface of any land in contravention of the acceptable conditions under Section 21;

(e) Section 25 (1) - License to emit, discharge or deposit any wastes into any inland waters in contravention of the acceptable conditions under Section 21;

(f) Section 27 (1) - License to discharge or spill any oil or mixture containing oil into Malaysian waters in contravention of the acceptable conditions under Section 21; and

(g) Section 29(1) - License to discharge wastes into Malaysian waters.

Under Section 17, license fees that may be prescribed vary depending on any one or more of the following factors:

(a) the class of premises;

(b) the location of such premises;

(c) the quantity of wastes discharged;

(d) the pollutant or class of pollutants discharged; and

(e) the existing level of pollution.

Since 1993, the activities of the DOE have increasingly focused more on prevention than on curative measures. At the same time, the enforcement of the EQA 1974 and its regulations has been further strengthened by escalating the degree of stringency of measures, particularly against repeat offenders.

As an exercise towards greater deregulation, the licensing mechanism has been regarded as an effective approach for industries to make rapid progress in complying with the relevant standards being enforced. Such success was made possible by the effective application of the "polluter pays" principle for instance, escalating pollution charges or fees imposed in proportion to the quality and quantity of discharge, thus effecting greater techno-economic efficiency and equity among small and big industries.

This may be illustrated in the 1996 amendment of the EQA 1974 whereby a provision on the payment of cess was introduced. Section 36A of the Act, as amended, authorises the Minister of the Environment, after consultation with the Minister of Finance and the Environmental Quality Council, to make an order for the imposition and collection of cess on wastes generated. Such order may provide for different rates of cess in respect of different types of waste generated, including the volume and composition of waste. The cess collected shall be placed in an Environmental Fund to be operated as a trust account within the Federal Consolidated Fund and controlled by an Environmental Fund Committee. This may be used for the conduct and promotion of research in relation to any aspect of pollution.

The Minister, after consultation with the Finance Minister and the Council, may also order any person engaged in the exploration, extraction, production, bulk movement, distribution or storage of oil, environmentally hazardous substances, or wastes to contribute to the Fund at a rate he may specify.

The clear use of MBIs may be found in Malaysia's "cradle to the grave" strategy for scheduled waste management. It is noted that this strategy is increasingly accepted as the only way to adequately assure the safe management of scheduled waste. The safe disposal of scheduled waste is being encouraged with the offer of tax incentives to industries that treat their wastes, and capital allowances to those that invest in waste treatment technology.

While attempting to meticulously enforce compliance with regulations on scheduled wastes and recognising its frequently limited resources, Malaysia's DOE believes that in the long term the only effective strategy would involve industries taking the lead in showing responsibility towards the environment. The present Director General is quoted to have called upon industries and other generators of waste to uphold the values of professionalism and accountability in all their activities.

## NATIONAL LEGISLATIVE/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

### *Legislative Mechanisms*

Legislative procedures require Malaysia's government to promulgate national legislation to enable international conventions to be implemented.

The legislative authority is formally vested by Article 44 of the Malaysian Constitution in Parliament. Constitutionally, Parliament consists of the Yang di-Pertuan Agong, the Dewan Negara (Senate) and the Dewan Ra'ayat (House of Representatives).

The legislative process commences with the introduction of a bill by either the Dewan Negara or the Dewan Ra'ayat. Generally, a bill becomes a law when it has been passed by both Houses and assented to by the Yang di-Pertuan Agong. When a bill has been passed by the House from which it originated, it is sent to the other House. When it has been passed by the other House and agreement is reached between the two Houses on any amendment, it is presented to the Yang di-Pertuan Agong for his assent. The Yang di-Pertuan Agong assents by affixing the public seal to the bill. After such assent the bill is published as a law. The law normally comes into force when published. Parliament may, however, postpone its operation or give it retrospective effect.

Though the Parliament is the supreme law-making body, it cannot make any law it pleases. The Constitution prescribes what laws may be made by Parliament and what may be enacted by State legislatures. Generally, the Parliament may pass laws enumerated under the federal list, such as justice, external affairs, finance and defence. Those enumerated under the State list like land, agriculture, forestry, and mining are matters that only the State legislatures can pass upon.

Parliament may, however, make laws with respect to any matter enumerated in the state list, but only "for the purpose of implementing any treaty, agreement or convention between the Federation and any other country, or any decision of an international organisation of which Malaysia is a member".

In this regard, Section 306K(1) of the Merchant Shipping Ordinance (inserted vide A792/91) Part VA Act No. 70 of 1952, which part applies throughout Malaysia states:

> "The Minister [of Transport] may make such rules as he considers necessary or expedient to provide for the carriage or storage of oil or harmful substance at sea, the control of pollution from ship and for matters connected therewith, and without prejudice to the generality of such powers may make rules for:
>
> x x x
>
> (j) the implementation in whole or in part of any international convention, code or resolution relating to marine pollution or any matter incidental thereto or connected therewith."

Hence, the main statutory provision that governs marine pollution in Malaysia is the *Merchant Shipping Ordinance of 1952*. This is the principal instrument used for the implementation of international conventions on marine pollution in general.

***Distribution of Mandates and Obligations***

At present, there is no agency in Malaysia that has the authority to deal with the full scope of marine pollution.

Under present Malaysian legislation, authority over pollution issues in general is as follows:

Part II, Section 3, of the EQA 1974 refers to the Director General of Environmental Quality appointed by the Minister of Science, Technology and Environment as the person responsible for the administration of the provisions of the Act. The Director General is specifically responsible for and co-ordinates all activities relating to the discharge of wastes into the environment and for preventing or controlling pollution and protecting and enhancing the quality of the environment.

Section 4 thereof establishes the Environmental Quality Council, the body which generally advises the Minister on matters pertaining to the Act. The Council's members consist of the Secretary General of the Ministry of Science, Technology and the Environment; Ministry of Trade and Industry; Ministry of Agriculture; Ministry of Labour; Ministry of Transport; Director General of Health; one member each from Sabah and Sarawak; representatives from the petroleum industry, oil palm industry, manufacturing and rubber industry; academe; and registered societies knowledgeable and having interest in environmental matters.

The licensing authority is likewise given to the Director General. The authority includes the determination of the volume, type, constitution and effect of wastes, discharge, emission, deposits or other sources of emission and substance that are of danger or a potential danger to the quality of the environment or any segment of the environment.

Under the EQ Orders of 1993 and 1994, the power of the Director General to investigate offences under Sections 27 and 29 of the EQA 1974 (prohibition of discharge of oil into Malaysian waters and prohibition of discharge of wastes into Malaysian waters) may now be delegated to:

(a) any port officer and deputy port officer appointed under Merchant Shipping Ordinance (MSO) of 1952;

(b) any port officer, ship surveyor and inspector appointed under MSO (Sarawak) 1960;

(c) any port officer, ship surveyor and inspector appointed under MSO (Sabah) 1960;

(d) any fisheries officer appointed under the Fisheries Act, 1985;

(e) any officer commanding a vessel or commissioned officer of the Royal Malaysian Navy;

(f) any officer of customs of the Customs and Excise Department; or

(g) any police officer commanding a vessel, or appointed police office of the Royal Malaysian Police.

Hence, in respect of the investigative authority over certain cases of marine pollution, the Marine Department, the Department of Fisheries, the Royal Malaysian Customs and Excise Department, the Royal Malaysian Navy, the Royal Malaysian Police and relevant state agencies may also be significantly involved.

The Director General of the Environmental Quality also has jurisdiction under the EEZA 1984 for the prevention and protection of the marine environment. "Authorised officer" includes fishery officer, police officer of the rank of sergeant and above, customs officer, officer of the armed forces, any public officer in command of a vessel belonging to the government or any other authorised officer.

It is noted that the responsibility for the development, administration and management of Malaysia's marine parks which were established under the Fisheries Act, 1985 was given to the Department of Fisheries in the Ministry of Agriculture. In Sabah,

marine parks are established under the National Parks Ordinance, 1962 and are managed by the Board of Trustees of Sabah Parks, Ministry of Tourism and Development.

However, the land adjacent to these marine resources does not come under the jurisdiction of the Department of Fisheries. It belongs instead to the State government and therefore any development or activity on land need not adhere to marine park regulations.

While national legislation exists, it is also noted that the focus of the DOE so far has been on inland and coastal waters, not on other areas identified as possible sources of marine pollution. Further, the DOE is authorised to deal only with industrial pollution. The main pathway of land-based marine pollution is river run-off but authority over rivers is a State portfolio.

Considering the above legislation, it is noted that numerous ministries and agencies regulate and oversee the development of the respective activities of Malaysian seas and marine resources. As noted in various studies published in Malaysia, this has been done with little co-ordination, co-operation and harmonisation between and among these authorities. The fragmented and dispersed approach in governing the activities of the sea has led to bureaucracy with its inherent inefficiency, duplication and overlapping of efforts, and unresolved conflicts among multiple users of marine resources.

A case in point is the control and prevention of marine pollution offences through the EQA 1974 and the EEZA 1984. Enforcement measures are inadequate, if not haphazardly carried out, because there are far too many enforcement agencies operating in the two maritime zones – the 12 nautical mile of territorial sea and the EEZ. Some enforcement agencies have found it difficult to operate in grey areas, i.e., in areas where the territorial waters and the EEZ "meet" at which the demarcation of the boundaries are not distinguishable.

***Requirements for Public Participation***

There is no explicit provision in Malaysian laws regarding the requirement of public participation in national legislative or regulatory systems and procedures on marine pollution.

However, the Constitution of Malaysia, in providing for a National Land Council, National Financial Council, and National Council for Local Governments, may be considered as potential leverage to demand a relative degree of public participation. Another possible opportunity for public participation is Section 34(A) of the EQA 1974 on the EIA process.

Section 34(A) of the EQA 1974 requires the proponent of any prescribed activity to submit a report to the Director General containing an assessment of the project's impact or likely impact on the environment and the proposed measures that shall be undertaken to prevent, reduce, or control its adverse environmental impact. Said report must also be prepared in accordance with the guidelines prescribed by the Director General of Environment. These guidelines may require public participation in the EIA process, such as public hearings, negotiations, social impact assessment and environmental monitoring.

Article 92 of the Constitution deals with national development plans. A "development plan" is understood as a plan for the development, improvement or conservation of natural resources or the increase or means of employment in the area.

The Constitution requires that prior to the proclamation of any area as a "development area", the Yang di-Pertuan Agong must first secure such recommendation from an expert committee and must consult with the National Financial Council, the National Land Council and the Government of any State concerned.

The National Land Council consists of a minister as chairman, representatives from each state appointed by the Ruler (Governor) and a maximum of 10 representatives appointed by the Federal Government. The council's duty is to formulate, in consultation with the Federal Government and the National Financial Council, a national policy for the promotion and control of land use throughout the federation for mining, agriculture, forestry or any other purpose, and for the administration of laws relating to it.

The National Financial Council consists of the Prime Minister, another minister designated by him, and representatives from each state appointed by the Ruler/Governor. It is the duty of the Federal Government to consult the council in respect of making development plans in accordance with Article 92.

The National Council for Local Government consists of a minister, representatives from each State appointed by the Ruler/Governor, and a maximum of 10 representatives appointed by the Federal Government. Its duty is to formulate, in consultation with the Federal and State Government, a national policy for the promotion, development and control of local government throughout the Federation and for the administration of any laws relating to it.

**INTERNATIONAL CONVENTIONS AND INITIATIVES**

As previously stated, legislative procedures require Malaysia's government to promulgate national legislation to enable international conventions to be implemented. The process of enforcing any international convention follows the usual procedures for

enactment of laws by the Parliament (through the Dewan Negara, Dewan Ra'ayat and the Yang di-Pertuan Agong).

Nonetheless, it is noted that Section 306 K, Part VA of the Merchants' Shipping Ordinance empowers the Minister of Transport to make rules regarding the implementation in whole or in part of any international convention, code, or resolution relating to marine pollution or any matter incidental thereto or connected therewith.

***Specific Instruments Ratified and/or Implemented***

Malaysia has so far ratified the following international instruments on marine pollution:

(a) CLC 1969;

(b) FUND 1971;

(c) the Basel Convention;

(d) UNCLOS;

(e) MARPOL 73/78; and

(f) OPRC.

National legislation to enforce the provisions or comply with the requirements of specific international instruments on marine pollution are consciously enacted by the Parliament. In some cases, however, significant provisions of specific instruments are found to have been incorporated as part of existing legislation without clear indication of deliberately implementing such instruments. This may be illustrated by the fact that some provisions of the London Convention 1972 are also found in Malaysia's EEZA 1984.

In 1993, the Malaysian government under the Customs Act of 1967 issued a new set of guidelines to enforce the requirements of the Basel Convention. On October 8 of the same year, Malaysia deposited its instrument of accession to the Convention. This came into force for Malaysia 90 days later, or on January 6, 1994. Some provisions of the Basel Convention were also introduced as 1996 amendments to the EQA 1974.

The Malaysian Parliament subsequently passed the Merchant Shipping (Oil Pollution) Act of 1994. The Act paved the way for Malaysia to accede to CLC and the FUND conventions. These conventions were subsequently ratified on 6 April 1995.

Malaysia ratified UNCLOS on 14 October 1996. In January 1997, Malaysia ratified the MARPOL 73/78 and its Annexes I, II and V. Implementing national legislation for these two conventions have, however, yet to be passed.

On 30 July 1997, Malaysia acceded to the OPRC. A "Procedure and Guidelines for Enforcement of Marine Pollution" has been drafted and is currently being reviewed. The revised draft will include enforcement roles of delegated agencies in the Malaysian EEZ and continental shelf areas. The revised version will also incorporate new measures introduced by the 1996 amendments of the EQA.

***Reason for Non-ratification or Non-implementation (Identification of Constraints)***

It is generally observed that Malaysia's policy-making structure affords relative ease in the ratification and implementation of the international conventions on marine pollution.

First, the Constitution of Malaysia expressly gives authority to the Parliament to make laws to implement international conventions. Second, the Minister of Transport is specifically empowered under the Merchant Shipping Ordinance (Section 306 K, Part VA) to make rules regarding the implementation in whole or in part of international conventions relating to marine pollution.

However, the government is very conscious of the onerous responsibilities and obligations, e.g., administrative and financial implications, that go with the act of ratification. Thus, much time usually passes before the decision to ratify is made. Prior to ratification, a thorough assessment of the country's capacity and expertise to effectively comply with the standards and requirements of international conventions is undertaken.

## ASSESSMENT OF MALAYSIA'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

Malaysia still has a long way to go in addressing its marine pollution concerns. While national legislation exists, the co-ordination required across a large number of federal and State agencies is considerable. Hence, concrete steps towards rationalising the activities within the maritime sector, decision-making structures, policies, and operational procedures are relevant in order to enable the country to solve its marine pollution concerns. Otherwise, Malaysia will have locked itself into an *ad hoc*, reactive, sector-by-sector set of responses which may not be systematic or effective in resolving conflicts between uses of the maritime waters and controlling costs.

The Malaysian government's Outline Perspective Plan, National Development Policy Plan and the Malaysia Plan as bases for a framework of policies on sustainable

development discussed in Section Two hereof are nonetheless commendable initiatives that may significantly affect its marine pollution policies.

Simultaneously, there may be a need for the government to conduct identification, analysis and diagnosis of all relevant issues in close co-operation and co-ordination with all concerned in the broad maritime sectors. The task of formulating alternative strategies for achieving the defined mission and objectives in the maritime sector is also considered necessary.

While there are prospects of developing a comprehensive monitoring program for the Malaysian waters, issues such as systematic availability of data, standard setting capacity, existence of standards applicable to all marine pollution, as well as adequate and coherent enforcement mechanisms remain.

Furthermore, there appear to be some gaps in the present legislative instruments to enable full effect of the international conventions on marine pollution. Thus, it is incumbent on the relevant agencies to examine these gaps and, in general, all the instruments pertaining to marine pollution.

Considering that international conventions have financial implications to the Malaysian government, the setting up of sufficient maritime administrative organisation(s) is necessary. A cost-benefit analysis of the implementation of international conventions is vital in allowing Malaysia to make the best decisions and acquire the most benefit from all conventions.

On the EIA issue, Malaysia can perhaps devise ways of further developing the system as a management tool that predicts the likely environmental consequences of a project and that is proactive and preventive, rather than reactionary in approach.

It is further noted that while the recent adoption of an integrated project planning approach in the general EIA system is exemplary, a comprehensive, holistic and integrated EIA on specific maritime sectors, as well as environmental monitoring and auditing skills have yet to be developed. The value of focusing on social impact and public involvement in environmental monitoring and auditing can also be examined.

On MBIs, it is noted that the shift from purely command-and-control strategies through making polluters pay or greater economic intervention is apparent but still incipient in Malaysia. Taxation of emissions, setting a cap or limit on the amount of pollution, subsidies to cleaner technologies, and developing formulas for calculating tax on discharges are possible market-based strategies that can be explored by the government.

A systematic allocation of subsidies and incentives could provoke, to a certain extent, the conscience of the industries and their obligations to the environment to pursue

development activities that are sustainable. In this respect, Malaysia may insist on management practices that call for higher product quality and at the same time take the environment into consideration in its production.

It is finally recognised that a strong urban local government system is fundamental in addressing sustainability, as the instrument of local government is able to pressure for more effective environmental governance and accountability.

Many development, particularly land-based, activities take place within the jurisdiction of a local authority. The role of the local authority is therefore essential in developing a common understanding among the relevant organisations on problems and strategies to monitor environmental issues.

Similarly, the concept of "partnership-building" in managing cities and monitoring the progress towards sustainable development in urban centres is increasingly becoming important. This is especially true in resource utilisation, regional planning, implementation and enforcement.

In all the foregoing suggested initiatives, the Malaysian government strongly needs to bolster its financial capacities and muster sufficient political will to effectively implement the international conventions.

Notwithstanding the enactment of implementing legislation, obligations and responsibilities tied with the ratification of these instruments can only be performed if and when the attendant monetary resources for enforcing the same are made available and judiciously utilised by the government. Ultimately, the necessary skills, resources, and mechanisms for the enforcement of these international instruments in Malaysia may be appropriately developed.

# Philippines

## THE MARINE POLLUTION SITUATION IN THE PHILIPPINES

The relevance of Philippine waters and all the natural resources in it cannot be overemphasised. The Philippines is an archipelago composed of 7,100 islands. It is spread within a territorial area of about 1,965,700 square km, bounded on the east by the Pacific Ocean, on the south by the Celebes Sea and the coastal waters of Borneo and on the west and north by the South China Sea which separates it from the Asian mainland. The Philippine archipelago spans 1,094 km, with a discontinuous coastline of 34,600 km. There are 61 natural harbours, 31 of which are developed. There are 132 rivers and 59 lakes. The waters of the Philippines cover 10 times more than its total terrestrial environment. The marine environment of the country is part of the Indo-West Pacific Region, which has been recognised as the world's highest biodiversity area. Marine life and coral reefs are abundant, supporting a major fishing industry. Ecosystems present in the coastal zone include coral reefs, mangroves, seagrass beds and soft bottom communities.

More than 70% of the total Philippine population resides, depends on and is associated with, the coastal zone. Nearly one million families or about six million persons are directly dependent upon coastal and inland freshwater bodies for their livelihood, while several times that number are part-time fishers and gatherers from tidal flats.

Pressures from an increasing population and the drive towards industrial development have resulted in the degradation of the country's ecosystems. The degradation of the Philippine marine environment is a confluence of many factors among which are pollution from vessels, from mine wastes and tailings, from sewage and garbage, from toxic wastes, pollution in rivers and run-off.

Major sources of oil pollution are ships, offshore oil wells and a variety of onshore sources such as loading facilities, storage tanks and even gasoline stations. The routine disposal into the sea of oil used in operating vessels has long been a problem and the size and number of ships used to transport oil is increasing. Another hazard is the drilling of oil wells in the ocean floor.

The Marine Industry Authority (MARINA) has registered 11,240 domestic operating fleet/vessels as of 1995, and about 355 international fleet/vessels as of August 1996. Of the domestic vessels, merchant fleets (i.e., passenger ferry and cargo, general cargo, container, liquid cargo/lighterage, barging, tanker, towing/salvage, pleasure and pilotage) comprise 43.56% while fishing vessels comprise 56.44%.

Both the eastern and western waters of the Philippines are part of international sea lanes used by tankers to ship oil cargoes to Taiwan, Japan, Korea, and Hongkong. Three big accidents have already occurred in these areas in the last decade.

An average of 160,000 tonnes of mine tailings containing toxic substances find their way into water systems like rivers, lakes and streams each day. An estimated 145,000 tonnes is dumped directly into the sea through pipeline systems. The worst mine tailings in the country come from the Baguio mining district, passing three major river systems in Luzon and subsequently destroying them: the Agno, Bued and Amburayan rivers. Mine tailings have likewise caused siltation, as in the Atlas and Marcopper mines in Cebu, where large areas of corals have been destroyed and buried following massive sedimentation.

Only about 12% of Metro Manila's ten million people are efficiently served by a sewage system. The rest contributes about 70% of all the organic pollutants that flow into the *esteros* (small riverine tributaries often used for the disposal of domestic and industrial wastes), lakes, rivers and other water systems. About 30% come from untreated or partially treated industrial wastewater that is discharged into the same *esteros* or rivers. There are no sewage systems in the rest of the country.

About 3,600 tons of garbage is generated in Metro Manila everyday. Of these, 70% comes mainly from household sources and 30% from industry. These wastes are allowed to flow or to discharge into various river systems. The continued disposal and proliferation of toxic substances and other wastes found in these waters are traced to about 69% of the country's 15,000 industrial firms that operate in Metro Manila.

Among the Philippines' 421 rivers, the four major river systems of Metro Manila are biologically dead. The Pasig River, a 25-kilometer river connecting Manila Bay to Laguna Lake, runs through Metro Manila and has an average biochemical oxygen demand (BOD) load of 23 to 80 mg/l, many times in excess of the standard of 7 to 10 mg/l for such class of waters. It is the repository of massive refuse from 138 industrial firms including oil spills from 300 gas stations and oil depots. The Tenejeros-Tullahan river system in Malabon is considered the most polluted in the country because it has become a dumping ground for all sorts of solid and liquid wastes coming from more than 20 industrial firms. Laguna de Bay or Laguna Lake, a 90,000-hectare lake near Metro Manila, suffers from severe water quality alteration by siltation and chemical contamination from domestic sewage, agricultural run-off and industrial waste. In July 1994, a leak from a thermal power plant of the National Power Corporation in Pililla, Rizal spilled about 8,700 barrels of bunker oil into the lake polluting about 300 has. along the 7-km shore. One thousand two hundred firms located around the Lake spew oil and grease into it. Major contributors to such discharge are textile and apparel manufacturers (2,656 kg/day) and chemical/pharmaceutical firms (1,588 kg/day). This greatly

contributes to the pollution of Manila Bay, which has been identified as a pollution hotspot due to its pollution from various sea-based and land-based sources.

It is reported that 400,000 tons of toxic wastes are being imported yearly from Europe, Japan and the US.

## NATIONAL MEASURES ON MARINE POLLUTION

### *The Philippine Constitution*

The fundamental right to a healthful environment is expressed in two constitutional provisions:

> "**Article II, Section 15.** The State shall protect and promote the right to health of the people and instill health consciousness among them.
>
> **Article II, Section 16.** The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature."

A 1993 decision of the Supreme Court (Oposa v. Factoran) recognised a right on the part of citizens to institute an action against the Government for violation of the people's right to a balanced and healthful ecology.

The Constitution provides for the protection of the marine environment in this wise:

> "**Article XII, Section 2.** The State shall protect the nation's marine wealth in its archipelagic waters, territorial sea, and the exclusive economic zone, and reserve its use and enjoyment exclusively to Filipino citizens."

### *Philippine Environment Code or Presidential Decree (PD) No. 1152 (1977)*

The overriding concern of this law is the development of a comprehensive and holistic program for environmental protection and management. It establishes specific management policies and prescribes environmental quality standards. This includes regulations concerning air quality, water quality, land-use management, natural resources management and conservation and waste management. PD No. 1152 provides for incentives on the importation of pollution control equipment, tax credit for the purchase of locally-manufactured pollution control equipment and tax deduction entitlement for expenses incurred for research and development on the manufacture of pollution control

equipment. The periods for granting incentives under PD No. 1152 have, however, already lapsed.[1]

Title II, Sections 14 to 21 specifically deal with Water Quality Management. This portion gives the government the mandate to classify Philippine waters, establish water quality standards, protect and improve the quality of water resources and be responsible for surveillance and mitigation of pollution incidents.

***Policy Objectives***

In terms of policy declarations, several laws have been enacted, as follows:

1. *Philippine Environmental Policy, PD No. 1151 (1977)*

This law recognises the need to harmonise the imperatives of industrialisation and environmental protection. It advocates the principle of sustainable development as the means to fulfil the social, economic and other requirements of present and future generations of Filipinos. PD No. 1551 specifically mandates the undertaking of EIAs for projects by private corporations and national agencies, including government-owned and controlled corporations, which may significantly affect the environment. EIA was introduced as a policy instrument to be used in incorporating environmental decisions in development.

2. *Philippine Strategy for Sustainable Development (PSSD), Cabinet Resolution No. 37 (November 29, 1989)*

The PSSD declares the shift from end-of-pipe control systems to a residual management system, which looks at the pollution problem within a more comprehensive framework. It promotes policies that support technological innovations, stringent enforcement of pollution control laws, the use of economic incentives, collective waste treatment facilities, more conciliatory methods of pollution controversy resolution and information dissemination.

The key strategic measures to be pursued include the integration of environmental considerations in decision-making, proper pricing of natural resources, property rights reform, establishment of an Integrated Protected Areas System, rehabilitation of degraded ecosystems, strengthening of residual management in industry (pollution control), integration of population concerns and social welfare in development planning, inducing

[1] *Under Section 13 of Republic Act No. 8749, the Philippine Clean Air Act of 1999 (RA No. 8749), industries, which shall install pollution control devices or retrofit their existing facilities with mechanisms that reduce pollution shall be entitled to tax incentives such as but not limited to tax credits and/or accelerated depreciation deductions. Implementing rules and regulations to operationalise such provision have yet to be issued.*

growth in rural areas, promotion of environmental education and strengthening of citizen's participation and constituency building.

3. *Republic Act (RA) No. 3931, as amended by PD No. 984 (August 18, 1976), the National Pollution Control Decree of 1976*

RA No. 3931 was the first comprehensive law on air and water pollution enacted in 1964. It was amended by PD No. 984, which is now the basic charter governing pollution control.[2] PD No. 984 created the National Pollution Control Commission (NPCC) as the "primary agency responsible for the prevention and control of environmental pollution" (Preamble, par. 3). The powers of the NPCC were both regulatory and quasi-judicial. It was empowered to issue permits and establish and monitor effluent, stream ambient, and emission standards.

Executive Order (EO) No. 192, Series of 1987 abolished the NPCC. The NPCC's rule-making powers were lodged in the Environment Management Bureau (EMB) of the Department of Environment and Natural Resources (DENR), while its quasi-judicial powers were transferred to the Pollution Adjudication Board (PAB).

PD No. 984 defines pollution and the prohibited acts that cause pollution. It prohibits the following activities unless a permit has been secured from the DENR:

(i) the construction, installation, modification, or operation of any sewage works or any extension or addition thereto;

(ii) the increase in volume or strength of any wastes in excess of the discharge specified under any existing permit; and

(iii) the construction, installation or operation of any industrial or commercial establishment or any extension or modification thereof, whose operation would cause an increase in the discharge of waste directly into water, air and/or land resources of the Philippines or would otherwise alter their physical, chemical or biological properties in a manner not already lawfully authorised (Section 8).

PD No. 984 authorises the DENR to:

"issue standards, rules and regulations to govern the approval of plans and specifications for sewage works and industrial waste disposal systems and the issuance of permits; to inspect the construction and maintenance of sewage works and industrial wastes disposal system for compliance to plans." (Section 6c)

[2] *On 17 July 1999, RA No. 8749 took effect. RA No. 8749 partially modifies PD No. 984.*

This has become the basis for the current Authority to Construct (A/C) and Permit to Operate (P/O) that the DENR issues for regulating industrial sources of waste. Moreover, the DENR has the authority to "issue, renew, or deny permits under such conditions it may determine to be reasonable for the discharge of sewage, industrial waste and for the installation or operation of sewage works and industrial disposal system x x x ." (Section 6g).

***Legislation and Regulations on Marine Pollution in General***

1. *PD No. 600, as revised by PD No. 979 (August 18, 1976)*

PD No. 600 as revised by PD No. 979 or the Marine Pollution Decree seeks to prevent and control the pollution of seas by the dumping of wastes and other matters which create hazards to human health, harm living resources and marine life, damage amenities, or interfere with the legitimate uses of the sea within the territorial jurisdiction of the Philippines (Section 2). Specifically, it prohibits the throwing, discharging, dumping or suffering, or permitting the discharge of the following substances:

(i) oil, noxious gaseous and liquid substances from or out of any ship, vessel, barge or any other floating craft, or other man-made structures at sea;

(ii) any refuse matter of any kind or description from manufacturing establishments other than that flowing from streets and sewers and passing therefrom in a liquid state into the tributary of any navigable water from which the same shall float or be washed into such navigable water; and

(iii) material of any kind in any place on the bank of any navigable water, or on the bank of any tributary of any navigable water, where the same shall be liable to be washed into such navigable water, either by ordinary or high tides, or by storms or floods, whereby navigation shall or may be impeded or obstructed or increase the level of pollution of such water.

While the definitions of dumping and discharge are substantially consistent with MARPOL 73/78 and the London Convention 1972 respectively (Sec. 3b), this law prohibits acts under both conventions in the same provisions with no real distinction as to enforcement measures.

PD No. 979 is the enacting legislation for a number of provisions in MARPOL 73/78. The law also tasks the Philippine Coast Guard (PCG) to develop an adequate capability for containment and recovery for spilled oil for inland waters and high seas use.

2. *Philippine Coast Guard Memorandum Circular (PCG MC) No. 03-94 Prevention, Containment, Abatement and Control of Marine Pollution*

This Memorandum Circular was issued by the PCG in implementation of PD No. 984 and PD No. 979 and their predecessors RA No. 3931 and PD No. 600, "as rationalised in accordance with the International Convention for the Prevention of Pollution from Ships, MARPOL, 73/78". Obviously, the regulation is meant to implement MARPOL 73/78. However, its language in the first few provisions is general: It applies to all marine pollution in all bodies of water within the territorial jurisdiction of the Philippines including ports, harbours, coastlines, lakes, rivers, and their tributaries.

As regards the cleaning up of oil spills/discharge, the MC provides:

> "The spiller shall have primary responsibility of conducting clean-up operations. The PCG shall, however, be responsible for supervising the clean-up operations and rendering assistance as necessary. Supervision shall be done by the On-Scene Commander designated by the PCG."

Provisions relevant to MARPOL 73/78 and the London Convention 1972 are taken up below.

3. *PD No. 1067 (December 31, 1976) or the Water Code*

PD No. 1067 confers upon the National Water Resources Council, now the National Water Resources Board (NWRB) the control over the utilisation, exploitation, development, conservation, and protection of water resources, which includes water under the ground, water above the ground, water in the atmosphere, and the waters of the sea. It regulates the appropriation of water rights, which shall be evidenced by a document known as a water permit.

It likewise defines water pollution as "the impairment of the quality of water beyond a certain standard set by the Environmental Management Bureau (EMB)."

The regulated activities under the law include establishment of a cemetery or a waste disposal area, application of agricultural fertilisers and pesticides, building of any works that may produce dangerous or noxious substances or "any act which may result in the introduction of sewage, industrial waste, or any pollutant into any source of water supply".

4. *RA No. 7586 (June 1, 1992) An Act Providing for the Establishment and Management of the National Integrated Protected Area System (NIPAS)*

This law establishes a comprehensive system of integrated protected areas within the constitutional land classification of national park. This System encompasses outstanding areas and biologically important public lands that are the habitats of rare and endangered species of plants and animals, biogeographic zones and related ecosystems, whether terrestrial, wetland or marine.

The prohibited acts under this law include the dumping of any waste products detrimental to the protected area, or to the plants and animals inhabitants therein. Likewise, leaving refuse or debris in exposed or unsanitary conditions or depositing them in the ground or in bodies of water is prohibited.

***Legislation and Regulations on Marine Pollution from Land-Based Sources***

**Waste (Municipal, Industrial, Hazardous, etc.)**

1. *PD No. 1152, Title V (Waste Management)* requires all provinces, cities and municipalities to prepare and implement waste management programs and directs that solid waste disposal can only be by sanitary landfill, incineration or composting. Any other method must first be approved by the competent government authority.

This law prohibits the establishment of landfills or any work locations concerning waste disposal along any shore or coastline, or along the banks of rivers and streams, lakes, throughout their entire length and the dumping of solid wastes into the sea and any body of water in the Philippines including shorelines and river banks. Finally, it requires the physical, chemical, or biological treatment of wastewater prior to disposal.

2. *DENR Department Administrative Order (DAO) No. 34, Series of 1990 (March 2, 1993) on Revised Water Usage and Classification/Water Quality Criteria, as amended by DAO No. 97-23, Updating Department Administrative Order No. 34, Series of 1990 Otherwise Known as the Revised Water Usage Classification/Water Quality Criteria Amending Section Nos. 68 and 69, Chapter III of the 1978 NPCC Rules and Regulations,* provides for the standards for water usage and classification/water quality criteria. Classification is according to best usage. Coastal and marine waters are classified as:

(i) SA - waters suitable for propagation, survival and harvesting of shellfish for commercial purposes, national marine parks and marine reserves established under existing laws and/or declared as such by the appropriate government agency and coral reef parks and reserves designated by law and concerned authorities;

(ii) SB - tourist zones and marine reserves primarily used for recreational activities such as bathing, swimming, skin diving, etc. established under existing laws and/or declared as such by the appropriate government agency, recreational water Class I (areas regularly used by the public for bathing, swimming, skin diving, etc.), and fishery water Class I (spawning areas for *Chanos chanos* or Bangus [milkfish] and similar species);

(iii) SC - recreational water Class II (e.g. boating, etc), fishery water Class II (commercial and sustenance fishing), and marshy and/or mangrove areas declared as fish and wildlife sanctuaries; and

(iv) SD - industrial and water supply Class II (e.g., cooling, etc.) and other coastal and marine waters that, by their quality, belong to this classification.

3. *DENR DAO No. 35, Series of 1990, the Revised Effluent Regulations of 1990 (DAO No. 35),* on the other hand, sets the effluent standards and requires all industries to regularly monitor their effluents and their effect on the receiving body of water. Likewise, it requires all industries to put up control facilities or wastewater treatment systems.

DAO No. 35 bans new industrial plants with high waste load potential from discharging into a body of water where the dilution or assimilative capacity of said water body during dry weather condition is insufficient to maintain its prescribed water quality according to its usage and classification. It penalises the discharge of untreated or inadequately treated industrial effluents, whether wholly or partially, directly into bodies of water or through the use of by-pass canals and/or pumps and other unauthorised means. It also makes it illegal to build, erect, install, or use any equipment, contrivance, or any means the use of which will dilute or conceal an effluent discharge. It requires the DENR and the Laguna Lake Development Authority (LLDA) to issue guidelines providing for the maximum quantity of any pollutant or contaminant that may be allowed to be discharged into surface water, including the maximum rate at which the contaminant may be discharged.

4. *RA No. 7160 (October 10, 1991), Local Government Code of 1991 (LGC), Section 17 b 2 [vi],* requires municipalities to provide a solid waste disposal system or establish an environmental management system and services or facilities related to general hygiene and sanitation for their constituents.

5. *PD No. 856 (December 23, 1975), the Sanitation Code,* provides for the proper disposal of refuse and wastes, the sanitary requirements for operating industrial establishments and hospitals, and the minimum requirements for the construction of septic tanks, among others.

Specifically, PD No. 856 prohibits the construction of septic tanks within 25 meters from any source of water. It also forbids the throwing of refuse in any body of water. All cities and municipalities are required to provide and maintain in a sanitary state and in good repair a satisfactory system of drainage in all inhabited areas where wastewater from buildings and premises could empty. Likewise, it mandates cities and municipalities to provide an adequate and efficient system of collecting, transporting and disposing refuse in their areas of jurisdiction.

6. *Republic Act No. 6969 (October 26, 1990), the Toxic Substance, Hazardous and Nuclear Waste Control Act*, requires the inventory of chemicals that are presently being imported, manufactured or used. It orders the monitoring and regulation of the importation, manufacture, processing, handling, storage, transportation, sale, distribution, use and disposal of chemical substances and mixtures that present unreasonable risk or injury to health or to the environment. Lastly, it prohibits the entry, even in transit, as well as the keeping or storage and disposal of hazardous and nuclear wastes into the country for whatever purpose.

RA No. 6969 to some degree implements the Basel Convention. The implementing rules and regulations (IRR) of RA No. 6969 are found in DAO No. 29, Series of 1992 (DAO No. 29). Under RA No. 6969 and DAO No. 29 it is a criminal offence to cause, aid or facilitate, directly or indirectly, in the storage, importation or bringing into Philippine territory including its maritime economic zones, even in transit, either by means of land, air or sea transportation any amount of hazardous and nuclear waste. The law and its IRR prohibit the transport of hazardous waste without prior permit from the DENR. They define a *"waste transporter"* as a person licensed to transport hazardous wastes. A waste transporter is required to keep a waste transport record containing particulars in respect of waste treatment and disposal. Any importer of hazardous substances must first seek and obtain prior written approval from the DENR.

DAO No. 29 likewise gives the DENR Secretary or his duly authorised representative the authority to stop, detain, inspect, examine, and remove to some suitable place for inspection and examination any vehicle or boat that is believed to be or likely to be used for the transport of chemical substances and hazardous and nuclear wastes.

7. *RA No. 7942 (February 20, 1995) the Mining Act of 1995*, requires all mining contractors and permittees to strictly comply with all mines safety rules and regulations to achieve waste-free and efficient mine development.

RA No. 7942 requires all contractors to establish an Environmental Protection and Enhancement Program (EPEP), a comprehensive and strategic environmental management plan for the life-of-the-mine project. This program includes plans relative to mining operations, rehabilitation, regeneration, re-vegetation, and reforestation of mined-out and tailings-covered areas, aquaculture, watershed development, and water

conservation. It requires contractors to secure an Environmental Compliance Certificate (ECC) before operations can be permitted.

Implementing RA No. 7046 is DAO No. 96-40. One of the environmental protection objectives being promoted by DAO No. 96-40 is the preservation of downstream freshwater quality and the preservation of sea water quality and natural habitats for marine life. This objective is pursued through the establishment of an Environmental Work Program (EWP), which sets out the environmental protection and enhancement strategies based on best practice in environmental management in mineral exploration and the Annual Environmental Protection and Enhancement Program (AEPEP), a yearly environmental management work plan which outlines the measures for management of waste dumps, tailings-covered areas, aquaculture, watershed development and water conservation, among others.

DAO No. 96-40 establishes a Contingent Liability and Rehabilitation Fund (CLRF) which is equivalent to the Environmental Guarantee Fund (EGF) mechanism under the Environment Impact Statement (EIS) system. It is divided into two main funds, which are the Mine Rehabilitation Fund (MRF) and the Mine Waste, and Tailings Reserve Fund (MWTF). The MRF is further divided into the Monitoring Trust Fund used to monitor mining projects and the Rehabilitation Cash Fund used for rehabilitation measures.

On the other hand, the MWTF, which is used for the payment of compensation for damages caused by any mining operations, is collected semi-annually based on the amounts of mine waste and tailings generated. The levy is ₱0.05/mt (US$0.0019) for mine waste and ₱0.10/mt (US$0.0038) for mine tailings.

8. *DAO No. 34, Series of 1992, Rules and Regulations to Implement RA 7076 Otherwise Known as the People's Small Scale Mining Act of 1991*, requires the small-scale mining contractor (area of operation is not more than 20 hectares) to proceed with the schedule of tailings and waste management and mine site rehabilitation as documented in the approved Mining Plan. It makes the contractor responsible for the control and proper disposal of all waste produced as a result of mining operations. Furthermore, it orders the contractor to comply with all environmental laws, especially with respect to water quality, watercourse diversion, excess siltation, and undue interference with existing agricultural fishing or other land and water usage.

If a small-scale mining area operation causes significant destruction to the environment, such area may be reverted to the State for proper disposition by the Secretary of Environment and Natural Resources.

9. *PD No. 705 (May 19, 1975), the Revised Forestry Code of the Philippines*, provides that mine tailings and other pollutants affecting the health and safety of the people, water, fish, vegetation, animal life, and other surface

resources, shall be filtered in silt traps or other filtration devices and only clean exhausts and liquids shall be released therefrom.

**Run-off**

10. *PD No. 1144 (May 30, 1977), Creating the Fertiliser and Pesticide Authority (FPA),* gave the FPA the power to restrict or ban the use of any pesticide or the formulation of certain pesticides in specific areas or during certain periods upon evidence that the pesticide is an imminent hazard, or is causing widespread serious damage to crops, fish or livestock, or to public health and environment. The FPA has the power to inspect the establishment and premises of pesticide handlers to ensure that industrial health and safety rules and anti-pollution regulations are followed. Moreover, the FPA can enter and inspect farmers' fields to ensure that only the recommended pesticides are used in specific crops in accordance with good agricultural practice.

PD No. 1144 likewise provides for the registration and licensing of pesticides, fertilisers, or other agricultural chemical with the FPA before the same can be exported, imported, manufactured, formulated, stored, distributed, sold or offered for sale, transported, delivered for transportation or used. A license is also required before any person can engage in the business of exporting, importing, manufacturing, formulating, distributing, supplying, repacking, storing, commercially applying, selling, or marketing of any pesticides, fertiliser and other agricultural chemicals.

11. *FPA Rules and Regulations No. 1, Series of 1977, Governing the Importation, Manufacture, Formulation, Repacking, Distribution, Delivery, Sale, Storage, and Use of Pesticides,* prohibit and penalise the deliberate application of any pesticide in such a way as to endanger or seriously damage the health, welfare, or property of any person or pollute or cause pollution of public waters. Likewise, these rules and regulations give the FPA or the Secretary of Agriculture the authority to summarily impound, remove, stop from being sold or used and seize any pesticide prohibited under these rules to prevent or control serious injury or damage to plant or animal life, public health and the environment.

However, PD No. 1144 and FPA Rules and Regulations No. 1 do not contain any provision as regards disposal of fertilisers and pesticides.

**Rivers, Atmosphere and Other Sources**

12. *PD No. 1067 (December 31, 1976), the Water Code,* requires minimum stream flows for rivers and streams and minimum water levels for lakes when necessary for the protection of the environment, control of pollution, navigation, prevention of salt damage and general public use. It prohibits the dumping of tailings from mining operations and sediments from placer mining into rivers and waterways without prior permission from the NWRB and upon recommendation by the EMB. Further, it prohibits

the raising or lowering of the water level of a river, stream, lake, lagoon or marsh and the draining of the same without a permit. Lastly, PD No. 1067 prohibits the application of agricultural fertilisers and pesticides in areas where such application may cause pollution of a source of water.

13. *PD No. 296 (September 18, 1973), Directing All Persons to Renounce Possession and Move Out of Portions of Rivers, Creeks, Esteros, Drainage Channels and Other Similar Waterways Encroached upon by Them and Prescribing Penalty for Violation*, requires any person, whether natural or juridical, who may have introduced improvements on or reclaimed and occupied portions of rivers, creeks, *esteros* or drainage channels to renounce possession or demolish structures or improvements which tend to obstruct the flow of water.

14. *PD No. 1198 (September 17, 1977)* requires all individuals, partnerships, or corporations engaged in the exploration, development and exploitation of natural resources or in the construction of infrastructure projects to restore or rehabilitate and return to their original condition all lands, rivers and the natural environment subject thereof or affected thereby.

***Legislation and Regulations on Marine Pollution from Ocean Dumping***

1. *PD No. 1152*. Sections 49 and 51 prohibit the dumping or disposal of solid and liquid wastes into the sea and any body of water in the Philippines, including shorelines and riverbanks, where these wastes are likely to be washed into the water.

2. *PCG MC 03-94, Prevention, Containment, Abatement and Control of Marine Pollution*, implements PD No. 979. The MC follows the approach of PD No. 979 by prohibiting dumping and discharge from all sources in the same provision. While the rest of the MC is very detailed on pollution from vessel operation, the dumping of wastes from land-based sources does not get much attention.

With respect to incineration of burnable trash or solid matter, the MC provides:

> "Except as otherwise prescribed by the Environmental Management Bureau, incineration of burnable trash or solid manner is allowed and encouraged.[3] Disposal into the sea of solid waste from incineration is permitted except within the designated special area."

The "encouragement" referred to in the aforequoted provision is not active, as it is not backed by an incentive system.

[3] *Under Section 20 of RA No. 8749, incineration defined therein as "the burning of municipal, bio-medical and hazardous wastes, which process emits poisonous and toxic fumes" is prohibited. Existing incinerators dealing with bio-medical wastes shall be phased out within three years after the effectivity of RA No. 8749.*

Special areas are mentioned and defined as areas which, due to recognised technical reasons in relation to its oceanographic and ecological importance, are deemed subject to special control. However, no areas have been designated as special areas. The NIPAS areas could be construed as special areas, but no regulation has made any reference thereto.

Another provision in MC 03-94 states:

> "The dumping into the sea of harmful substances or wastes containing substances is allowed by a permit issued by the Commandant, PCG in accordance with specified procedures and manners to be included at such permits (*sic*). The EMB shall co-ordinate with the PCG on all requests for permits to dump harmful waste from industrial and manufacturing plants in any navigable water of the Philippines."

Another part of the MC provides:

> "(c) Local government shall not dispose of garbage in any shorelines, rivers or lakes. The PCG in coordination with appropriate government agencies and instrumentalities, shall regulate the dumping of solid wastes in accordance with existing guidance on solid waste disposal.
>
> (d) Owners/operators of recreational areas such as beach resorts shall not dump oily waste, refuse and garbage into the shoreline which is likely to be washed away by tides and currents.
>
> (e) Dumping of radioactive materials into the sea shall be regulated by pertinent rules and regulations prescribed by appropriate government agencies such as the Philippine Nuclear Research Institute (PNRI), Department of Health (DOH), Environmental Management Bureau (EMB) and the Philippine Coast Guard (PCG) in consultation with each other.
>
> (f) Discharges/dumping of oil/waste water from industries and manufacturing plants in any body of water of the Philippines shall be regulated by the Environmental Management Bureau. However, the Philippine Coast Guard shall implement in addition to this circular, the rules and regulation of the PCG such other agencies involved in water pollution control.
>
> (g) Chemical dispersant to be utilised by the ship owner, master of the vessel, oil companies, terminals/depots, power plant/barges, oil drillers, oil tankers and salvors during oil spill shall be duly accredited by the PCG."

3. *PCG MC No. 02-91, Dumping and Discharging of Wastes and Other Harmful Matters at Sea***,** is specifically on dumping of wastes. This MC makes it unlawful for any person to:

> "discharge, dump or suffer, permit the discharge of oil, noxious, gaseous and liquid substances, harmful substances, waste and other matter in or out from vessels, tankers, oil barges, dredgers, oil company refineries, terminals, depots and other establishment into or upon territorial and inland navigable waters of the Philippines." (Sec. 5a.)

It provides that:

a) The dumping of waste or other matter listed in Annex I is prohibited.

b) The dumping of waste or other matter listed in Annex II requires a special permit.

c) The dumping of all other wastes or matters listed in Annex III-A requires a General Permit/Certification from EMB. (Sec. 5a2.)

The annexes are a copy of the original text of the annexes of the London Convention 1972.

The MC further provides that the dumping of radioactive materials into the sea shall be "regulated by pertinent rules prescribed by government agencies such as the Philippine Nuclear Research Institute (PNRI), Department of Health (DOH), EMB and PCG in consultation with each other". However, because Annex II was copied verbatim from the London Convention, it refers to the International Atomic Energy Agency (IAEA) (Sec. 5a4b).

The special permit required for substances listed in Annex II shall be issued by the Commandant, PCG or his duly authorised representative (Sec. 7a1), and must be requested at least one week before the scheduled date of dumping (Sec. 6a). During the actual operation, the PCG District Office shall "provide escort/security to the requesting party", supervise the dumping operations and submit an "After Dumping Operations Report" to Headquarters (Secs. 6b and 7a). The National Operations Center for Oil Pollution (NOCOP) on the other hand is required to monitor the dumping operations (Sec. 7b). The Assistant Chief of Staff of the Marine Environment Protection Division is required to keep records of the nature and quantities of all matters permitted to be dumped and the location, time and method of dumping (Sec. 7c).

For Annex III-A substances, the general permit/certification is to be issued by the EMB. This permit shall specify the procedures and measures for dumping such substances (Sec. 5a2c).

Eight dumping areas are designated (one for each Coast Guard District), all of them 25 nautical miles away from the coast (Sec. 6b). It is not known what the basis for the designation of these areas is, or whether they are actually being used.

"Concerned parties" are required to "initiate measures to protect the marine environment against pollution" caused by wastes generated by the operation of vessels, radioactive pollutants from all sources including vessels, agents of chemical and biological warfare and wastes or other matter directly arising from or related to the exploration, exploitation and associated offshore processing of seabed mineral resources (Sec. 5a4d).

It should be noted that the regulation is addressed specifically to potential oil dischargers (Sec. 3 on "Scope"). The activities of other dischargers are lumped under the category "other establishment wherein the marine pollution originates in these sources such as dumping and discharges through the rivers, estuaries, outfalls and pipelines of waste and other matter within the territorial jurisdiction and exclusive economic zone of the Philippines (*sic*)". This provision is inconsistent with Section 5a regarding area covered (see above). No enforcement measures are specified.

There is no record in 1995 and 1996 of any fines imposed for violation of this regulation.

***Legislation and Regulations on Marine Pollution from Vessels***

1. *PCG MC 03-94, on the Prevention, Containment, Abatement and Control of Marine Pollution*

*"Discharge"* is defined as the spilling, leaking, pumping, pouring out, emitting or dumping of substances except effluents from mills or industrial and manufacturing plants of any kind.

The MC declares it unlawful for anyone to:

1. Discharge oil or oily mixture from machinery space bilges of oil tankers when mixed with cargo oil residue or when transferred to slop tanks;

2. Discharge from cargo pump room bilges of oil tankers; and

3. Discharge into the sea of oil or oily mixtures from a ship or tanker while in a special area.

MC 03-94 sets several requirements for: vessels, oil companies, oil explorers, power plants/barges and tanker owners. These substantially follow the requirements of MARPOL. There is a third category of requirements for "Others", which are the land-based sources of waste.

2. *PCG MC No. 01-94 on the Prevention of Pollution by Sewage from Ships and Issuance of International Sewage Pollution Prevention Certificate for Philippine Registered Vessels*, implements Annex IV of MARPOL 73/78, and substantially follows it, although the Annex itself is not yet in force. It provides for the treatment and facilities required, the discharge requirements, survey and inspection as well as the issuance of the International Sewage Pollution Prevention (ISPP) Certificate. This regulation is not really being enforced.

3. *PCG MC No. 02-94 on the Prevention of Pollution by Garbage from Ships*, forbids the disposal into the sea by any vessel or person of: (i) all plastic materials, including but not limited to, synthetic nets and plastic garbage bags; and (ii) domestic cargo-associated maintenance and operational waste. Domestic waste is defined as all types of food wastes and wastes generated in the living spaces on board the ship.

Other requirements of MARPOL (without the 1995 amendments) are incorporated in the regulation. However, the regulation is not enforced.

4. *PCG MC No. 04-93 requiring Shipboard Oil Pollution Emergency Plan (SOPEP) for Philippine Registered Vehicles*, requires all oil tankers of 150 GT and above and every ship other than an oil tanker of 400 GT and above to carry on board a shipboard oil pollution emergency plan duly approved by the PCG. This closely follows the requirements of Regulation 26, Annex I of MARPOL. According to the PCG this regulation is being implemented.

5. *PCG MC No. 05-83, the Rules Governing the Issuance of Oil Pollution Prevention Certificate (IOPPC) to Philippine Registered Vessels*, prescribes the procedure for the issuance of IOPPCs to Philippine registered vessels in international or domestic trade through compliance with the regulations, which closely follow MARPOL Annex I requirements. These include oil separation equipment, segregated ballast tanks, crude oil washing procedures, and the maintenance of an oil record book. Vessels of at least 400 GT and tankers of at least 150 GT are required to obtain an International Oil Pollution Prevention Certificate (IOPPC). While the country is not yet a signatory of the Convention, only the equivalent certificate of compliance is issued. The PCG as well as MARINA have delegated the survey and inspection functions to qualified organisations, namely classification societies.

6. *PCG MC No. 06-91, Rules and Regulations for Tank Cleaning Operations of Vessels/Oil Tankers,* defines tank-cleaning operations as the "method of removing from the tanks of oil tankers the residue from her previous cargo." Due to the absence of port reception facilities in the country, the Coast Guard has issued this regulation to ensure the prevention of pollution as well as safety during tank cleaning operations. A prior clearance from the Coast Guard District Commander is required, and among the information and documents to be submitted for this purpose are the following: the name of the tank cleaning contractor (if applicable), copy of its accreditation certificate, tank cleaning plan, emergency plan for injury or accident, copy of the Philippine Ports Authority (PPA) permit for tank cleaning and berthing space, disposal plan of waste permit from the EMB for land disposal, and contract of the company for proper disposal.

It does not appear that these regulations are strictly implemented. There is in fact little coordination between the PCG and the EMB.

7. *PCG MC No. 02-80, Rules for Accreditation of Oil Water Separators, Oil Containment Recovery and Dispersal Equipment and Chemical Dispersants,* provides for the procedures for accreditation by the PCG of the following facilities:

(i) Oil water separators for installation on board vessels of 1000 GT and above and in oil terminals where the discharge of oily and dirty ballast is conducted;

(ii) Chemical dispersants to be provided on board self-propelled barges/tankers and vessels towing dumb barges and in refineries and depots; and

(iii) Oil containment, recovery and dispersal equipment to be provided in oil refineries and major oil loading ports.

8. *Headquarters Philippine Coast Guard (HPCG) MC No. 08-96 on Port State Control* implements Resolution A.466 (XII), adopted by the Assembly of the IMO on 19 November 1981. Resolution A.466 (XII) follows the Asia-Pacific Port State Control Manual. HPCG MC No. 08-96 is for application to all foreign-flagged vessels calling at Philippine ports except naval and coast guard vessels and non-convention ships. It prescribes the procedures to be followed by the PCG personnel in the conduct of Port State Control.

9. *PCG MC No. 01-81, Rules and Regulations on Monitoring Procedures for Safety of Life at Sea (SOLAS) and Maritime Environmental Protection (MEP) Requirements for Domestic Vessels,* prescribes a system for the orderly and effective vessel monitoring process responsive to the promotion of safety of life at sea and for maritime protection. It provides for a procedure for the arrival and departure of ships, vessels, or any watercraft. It gives authority to the PCG to board and inspect all vessels at any time, whether in port or underway, to determine compliance with SOLAS and MEP.

Annex "A" of MC No. 01-81 requires all coastwise trade vessels, Philippine commercial fishing boats and yachts to carry anti-marine pollution equipment as provided by the relevant regulations (see PCG MC 02-80 above).

It is not certain how the function relating to safety affects the operation of this regulation, considering the transfer of the safety functions to the MARINA.

In general, the PCG reports that it is enforcing these regulations. However, it has no systematic recording system, although the PCG has produced a list of violations and administrative fines imposed in 1996.

10. *MARINA MC Nos. 56 & 56-A* (4 December 1991) requires all tankers and barges with 700,000 litres or more capacity, hauling oil and/or petroleum products, to be covered by a recognised insurance company/ies, protection and indemnity club/s or their equivalent, against oil/marine pollution risks in the amount equivalent to US$300 million. Coverage required is US$10 million if the tanker/barge has less than 700,000-litre capacity.

Further, Liquefied Petroleum Gas (LPG) carriers are obliged to be covered against third party liability in the amount equivalent to US$2 million.

11. *PPA AO No. 04-85 on the Policy on the Prevention and Control of Marine Pollution*, was issued to comply with MARPOL 73/78. This administrative order declares it a policy to prevent and control the pollution of seas within the PPA's jurisdiction. It requires all Port Management Offices (administering each port) to study the possibility of providing reception facilities and the collection of vessel's oil sludge/slops and other wastes in accordance with the international standards.

12. *PPA MC No. 07-95, on Anti-Pollution Measures Within the Port Zone*, mandates the PPA to enforce PCG regulations pertaining to marine pollution. It also mandates the PPA to assist the PCG in its berthing and storage facilities. Upon official request/notice from the PCG, the PPA withholds the entry/departure clearance of vessels for marine pollution violators.

13. *PPA AO No. 16-95, Rules and Regulations on the Prevention/Control of Oil, Garbage and Sewage Waste Through the Use of Reception Facilities/Collection of Vessels Refuse*, makes it mandatory for all vessels calling on port in the Philippines to dispose of their oil, sewage, and garbage waste at the reception facilities provided by the PPA or the PPA's duly accredited private contractor. Exempted from this requirement are ships with International Sewage Pollution Prevention Certificates, International Garbage Pollution Prevention Certificates, IOPCs or their equivalent, and vessels whose states of registry are not parties to MARPOL but possess the equivalent of the certificates previously mentioned.

In case the PPA is unable to provide reception facilities at each port, the Administrative Order authorises it to accredit a private contractor to put up reception facilities for reception of waste/refuse.

A monitoring and inspection team is required in each regulatory district, which includes as its member a representative of the PCG. This team does not seem to be operational.

A number of private enterprises have in fact been accredited and are operational. However, the PPA has no control over the disposal of the waste, which occurs outside of its jurisdiction (the port areas). No co-ordination mechanisms have been established with the EMB.

The PPA has begun the process of providing reception facilities in the main ports of the country, although it is still a long way from actual construction.

14. *PD No. 602 (December 9, 1974) Establishing the Oil Pollution Operations Center (NOCOP) in the Philippine Coast Guard Headquarters* authorises the PCG to negotiate directly with local companies which have oil containment and recovery facilities for the use of such equipment in combating oil pollution. It makes the NOCOP the point of contact for the ASEAN activities on oil spill response and co-operation. The law requires the Center to immediately call for assistance from such countries to help contain oil pollution. In the same manner, the Centre is authorised to respond to call for assistance by ASEAN member countries.

## LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGE

1. *PD No. 1152* makes the polluter responsible for the containment, removal, and cleaning up of water pollution incidents at his own expense. In case of his failure to do so, the government agencies concerned shall undertake containment, removal and clean-up operations. Expenses incurred for such operations shall be charged against the persons/entities responsible for the pollution (Section 20).

2. *PD No. 984.* A person who violates the National Pollution Control Decree of 1976 is liable to a penalty not exceeding ₱1,000 (US$38) for each day during which the violation continues, or by imprisonment for two to six years.[4]

A person who contravenes or who fails to comply with any order or regulation of the DENR is liable to a fine not exceeding ₱5,000 (US$191) per day for every day during

[4] *Under Section 47 of RA No. 8749, a fine of not less than ₱10,000 (US$382) but not more than ₱100,000 (US$3,820) or six months to six years imprisonment or both shall be imposed for violations of the Act and its rules and regulations other than exceedance of any pollution or air quality standards found thereunder or in its rules and regulations.*

which such violation continues. If such person fails to pay the fine, the PAB may order the closure or the stoppage of operation of the violator's establishment until payment of the fine is made.

A person who refuses or hampers the entry of DENR representatives during reasonable hours for the purpose of investigating the conditions of property relating to pollution is liable to a fine not exceeding ₱200 (US$8.00) or imprisonment of not exceeding one month or both.

An additional penalty in the form of damages is imposed on persons who violate PD No. 984 and cause the death of fish or other aquatic life. If the violator is a juridical person, the penalty is imposed on the managing head responsible for the violator.

3. *PD No. 600, as amended by PD No. 979, or the Marine Pollution Decree.* A person who commits any of the prohibited acts is liable to a fine of ₱200 (US$8.00) to ₱10,000 ($382) or by imprisonment of 30 days to one year, or both, without prejudice to the civil liability of the offender.

Exceptions are cases of emergency endangering life or property, or unavoidable accident, collision, or stranding or in any case which constitutes danger to human life or property.

4. *PD No. 1067.* A fine exceeding ₱3,000 (US$115) but not more than ₱6,000 (US$229) or imprisonment exceeding three years but not more than six years, or both such fine and imprisonment in the discretion of the court, shall be imposed on any person who commits the prohibited acts.

5. *RA No. 6969, the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990.* The penalty of imprisonment for 12 years and one day to 20 years shall be imposed upon any person who shall:

Cause, aid or facilitate, directly or indirectly, in the storage, importation, or bringing into Philippine territory, including its maritime economic zones, even in transit, either by means of land, air or sea transportation or otherwise keeping in storage any amount of hazardous and nuclear wastes in any part of the Philippines. (Secs. 13d and 14b.)

The penalty of imprisonment for six months and one day to six years or a fine ranging from ₱600 (US$23) to ₱4,000 (US$153) or both shall be imposed upon any person who shall:

a) Knowingly use a chemical substance or mixture which is imported, manufactured, processed or distributed in violation of this Act or implementing rules and regulations or orders;

b) Fail or refuse to submit reports, notices or other information, give access to records as required by this Act, or permit inspection of establishment[s] where chemicals are manufactured, processed, stored or otherwise held; or

c) Fail or refuse to comply with the pre-manufacture and pre-importation requirements (Sec. 14(a)(8)).

In case of corporations or associations, the above penalty shall be imposed upon the managing partner, president, or chief executive in addition to exemplary damages of at least ₱500,000 (US$19,084). If the offender is a foreigner, he/she may be deported and barred from entry into the Philippines after serving his/her sentence. If the offender is a foreign firm, the directors and all officers of such firm shall be barred from entry into the Philippines in addition to the cancellation of its license to do business in the Philippines (Sec. 12a).

The person or firm responsible for or connected with the bringing or importation into the country of hazardous waste or nuclear waste shall be under legal obligation to transport or send back the prohibited waste (Sec. 12d).

Any and all means of transportation, including all facilities and appurtenances which may have been used in unauthorised transportation to or in the unauthorised storage in the Philippines of any significant amount of hazardous or nuclear waste shall, at the option of the government, be forfeited in the government's favour (Sec 12d).

The DENR may confiscate or impound chemicals found not falling within the standard set by the rules and regulations, and impose administrative fines for the violations of the Act. In all cases of violation of the Act, including its implementing rules and regulations, the DENR Secretary may impose an administrative fine of ₱10,000 (US$382) to ₱50,000 (US$1,908) (Sec.15).

The DENR investigator may enter into premises where it is reasonably believed that chemical substances are stored or processed.

6. *RA 7942 No. or the Mining Act of 1995.* Violation or gross neglect to abide by the terms and conditions of the ECC, which causes environmental damage through pollution, is penalised with imprisonment of six months to six years or a fine of ₱50,000 ($1,908) to ₱200,000 ($7,634), or both.

7. *PD No. 825, Penalty for Improper Disposal of Garbage and Other Forms of Uncleanliness.* Littering or throwing garbage, filth, or other waste matters in public places, such as roads, canals, *esteros*, or parks is penalised with imprisonment of not less than five days nor more than one year or a fine of not less than ₱100 (US$4) nor more

than ₱2,000 (US$76) or both such fine and imprisonment. This is without prejudice to the imposition of a higher penalty under any other law or decree.

8. *PD No. 296, Directing All Persons, Natural or Juridical to Move Out of Portions of Rivers, Creeks, Esteros, Drainage Channels and Other Similar Waterways.* Punishment for violation consists of fine not less than ₱5,000 (US$191) nor more than ₱10,000 ($382) or imprisonment for not less than two years nor more than 10 years, or both such fine and imprisonment. If the offender is a corporation, firm, partnership or association, the penalty shall be imposed upon the guilty officer/s and if the same are aliens, they shall be deported by the Commission of Immigration and Deportation without further proceedings.

9. *PD No. 1144, Creating the Fertiliser Pesticide Authority.* Violation of any provisions pertaining to pesticides is penalised with imprisonment of not more than one year or a fine of ₱5,000 (US$191) but not more than ₱10,000 (US$382).

10. *PD No. 1586, or the Environmental Impact Statement System.* Any person, corporation, or partnership found undertaking or operating an environmentally critical project (ECP) or within an environmentally critical area (ECA) without an ECC, or violating the conditions of such ECC, or of the standards, rules and regulations issued by the EMB shall be punished with suspension or cancellation of his/its certificate and/or a fine in an amount not to exceed ₱50,000 (US$1,908).

11. *DAO No. 96-37, Rules and Regulations Implementing PD No. 1586 or the Philippine Environmental Impact Statement (EIS) System.* To ensure that no ECP or project in an ECA operates without an ECC, these implementing rules and regulations provide for additional penalty of closure or cessation of operations, through a Cease and Desist Order (CDO). DAO 96-37 further clarifies that the fine of ₱50,000 (US$1,908) is for every violation of an ECC condition, or the environmental management plan (EMP), or the EIS System rules and regulations.

It likewise penalises misrepresentations in the Initial Environment Examination/EIS or other EIA-related documents with suspension or cancellation of the ECC and/or a fine in an amount not to exceed ₱50,000 ($1,908) for every misrepresentation

12. *Philippine Coast Guard Memorandum Circulars*

(a) *PCG MC No. 01-94, Prevention of Pollution by Sewage from Ships and Issuance of International Sewage Pollution Prevention Certificate for Philippine Registered Vessels*

In case of violations, the PCG may order the suspension of the certificate of inspection of a vessel and the imposition of administrative fines ranging from ₱5,000 (US$191) to ₱10,000 (US$382).

(b) *PCG MC No. 02-94, Prevention of Pollution by Garbage from Ship*

Any violation will be penalised with a fine ranging from ₱5,000 (US$191) to ₱10,000 (US$382).

(c) *PCG MC 03-94, Prevention, Containment, Abatement and Control of Marine Pollution*

For discharging or dumping of oily mixture listed in Annex II of MC 03-94, the violator may be required to pay a fine ranging from ₱5,000 (US$191) to ₱10,000 (US$382). As an alternative or in addition to said fines, the persons directly responsible for the spill shall be reprimanded or their licenses suspended or cancelled.

For throwing or dumping any refuse matter as listed in Annex II of MC No. 03-94, the violator may be required to pay a fine ranging from ₱5,000 (US$191) to ₱10,000 (US$382). In addition, the person/master or officer directly responsible for the act may be reprimanded or his license suspended, revoked, or cancelled.

For failure to notify the PCG of any spillage or discharge of oil or oily waste or noxious gases or harmful substances, the master/chief engineer of the vessel and the salvor may be fined an amount ranging from ₱8,000 (US$305) to ₱10,000 (US$382) or his license suspended or revoked at the discretion of the PCG.

For failure to comply with the requirements for vessels, oil tankers, oil companies, oil explorers, power plants/barges, the owner/operator of the vessel may be fined an amount ranging from ₱3,000 (US$115) to ₱10,000 (US$382).

For oil spills, the spiller shall be liable for the cost of the cleanup. In addition, the PCG may require the posting of a cash bond to cover cleanup and containment costs as follows:

(i) Minor discharge (less than 1,000 litres of oil): ₱100,000 (US$3,817) to ₱500,000 (US$19,084);

(ii) Medium discharge (1,000 to 10,000 litres): ₱500,000 (US$19,084) to ₱1M (US$38,168); and

(iii) Major discharge (more than 10,000 litres): ₱1M (US$38,168) to ₱50M (US$1,908,397).

A cash bond may also be required to cover the estimated amount for the extent of damage to property and payment to affected areas/populace as a result of an oil spill:

| Extent of Damage | Cash Bond |
|---|---|
| less than ₱50,000.00 (US$1,908) | ₱ 1 million (US$38,168) |
| ₱51,000 (₱1,947) to ₱1 million (US$38,168) | ₱10 million (US$381,679) |
| more than ₱1 million (US$138,1698) | ₱20 million (US$763,359) |

(d) *PCG MC No. 04-93, Shipboard Oil Pollution Emergency Plan (SOPEP) for Philippine Registered Vessels*

Masters or agents of ship-owners whose vessels are found to have no SOPEP will be held administratively liable and will be subject to a fine of ₱5,000 (US$191) to ₱10,000 (US$382).

(e) *PCG MC No. 08-96, Port State Control*

Under this regulation, no fines are to be imposed for deficiencies found. However, a re-inspection will be conducted to verify the rectification of deficiencies and a corresponding re-inspection fee charged in the amount of ₱5,000 (US$191) for the first hour of the Port State Control Team on board the vessel, and ₱1,000 (US$38) for every succeeding hour.

(f) *PCG MC No. 02-91, Dumping and Discharging of Wastes and Other Harmful Matters at Sea*

Violation of any of the provisions of MC 02-91 shall subject the violator to a fine of ₱5,000 (US$191) to ₱10,000 (US$382). A fee for the supervision provided by the Coast Guard is fixed at ₱1,500 (US$57), except in cases where it is necessary to secure the safety of human life or of vessels, tankers, oil barges, dredgers, platforms, or other man-made structures at sea.

(g) *PCG MC No. 02-80, Accreditation of Oil Water Separators, Oil Containment Recovery and Disposal Equipment, and Chemical Dispersants*

If pollution of the sea is caused by mechanical defect already existing prior to the installation, the person/firm from whom the equipment was purchased is held administratively liable and is subject to a fine of ₱3,000 (US$115) for the first offence; ₱5,000 (US$191) for the second; and ₱10,000 (US$382) and/or cancellation of the certificate of approval for the third offence.

Likewise, if an equipment/dispersant is provided/installed on board the specified vessels/watercraft without approval from the PCG, the owner or operator of the vessel or firm is held administratively liable and is subject to a fine of ₱1,000 ($38) and is ordered to effect the immediate replacement of the equipment/dispersant.

(h) *PCG MC No. 06-91, Rules and Regulations for Tank Cleaning Operations of Vessels and Oil Tankers*

Ship-owners who fail to secure clearance from the PCG will be subject to a fine of ₱10,000 (US$292). Contractors undertaking tank cleaning operations without a permit from the PCG may be held administratively liable and subject to a fine of ₱10,000 (US$382).

(i) *PCG MC No. 01-85, Rules and Regulations for Tank Cleaning Operations of Vessels/Oil Tankers*

Tank cleaning operations within Philippine jurisdiction, without the approval of the PCG, are penalised with a fine of ₱5,000 (US$191). The same penalty is applied for failure to secure a clearance from the PCG. The master of the vessel shall be held liable for any violation of marine pollution laws.

## REQUIREMENTS FOR EIA AND ACTUAL PRACTICE

### *The Environmental Impact Assessment (EIA) System*

PD No. 1151 mandated the adoption of the EIA system. But it was not until June 11, 1978 that PD No. 1586, which established the EIA system, was enacted into law. PD No. 1586 provided the legal foundation for the classification of projects and undertakings as being an ECP or being located in an ECA. It required the preparation of an EIA for ECPs and projects in ECAs and the procurement of an ECC before any project with anticipated significant environmental impacts could be undertaken. It likewise authorised the preparation of land and water use patterns, the establishment of ambient environmental quality standards and protective measures against calamitous factors such as earthquake, flood and water erosion, among others.

In addition, PD No. 1151 provided sanctions for non-compliance with the requirement of securing an ECC, or with the terms and conditions of the ECC, or violation of the standards, rules and regulations issued by the then National Environmental Protection Council (NEPC), now the EMB. It provided for a penalty of suspension or cancellation of ECC and/or a fine in an amount not to exceed ₱50,000 (US$1,908) for violation of its provisions.

DAO No. 96-37, which is the revised implementing rules and regulations of PD 1586 reiterated the ECPs and ECAs as classified by Presidential Proclamation 2146 (1981) and Presidential Proclamation No. 803 (1996), to wit:

- Environmentally Critical Projects: heavy industries (non-ferrous metal industries, iron and steel mills, petroleum and petro-chemical industries, including oil and gas, and smelting plants); resource extractive industries (major mining and quarrying projects, forestry projects, fishery projects); infrastructure projects (major dams, major power plants, major reclamation projects, major roads and bridges); and golf course projects.

- Environmentally Critical Areas: national parks, watershed reserves, wildlife preserves and sanctuaries; potential tourist spots; areas which are habitats for any endangered or threatened species of indigenous Philippine wildlife; areas of unique historic archaeological or scientific interest; areas which are traditionally occupied by indigenous cultural communities; areas frequently visited and/or hard-hit by natural calamities; areas with critical slopes; areas classified as prime agricultural lands; water bodies which are tapped for domestic purposes or within the controlled and/or protected areas or which support wildlife and fishery activities; mangrove areas with pristine and dense young growth or those mangroves adjoining the mouth of major river systems or near or adjacent to traditional productive fry or fishing grounds and those which act as natural buffers against shore erosion, strong winds and storm floods or those on which people are dependent for their livelihood; coral reefs with 50% and above live coral cover or used as spawning and nursery grounds for fish or which act as natural breakwater of coastlines.

The government agency that is mandated by law to implement the EIA system is the EMB. The DENR Regional Offices are likewise mandated by DAO No. 96-37 to implement the EIS system.

***EIA and Actual Practice***

Before DAO No. 96-37, some institutional constraints prevented the EMB from effectively and efficiently implementing the EIA system. Initially, when enacted in 1978, the system was seen as nothing but just another bureaucratic hurdle, which companies must pass through. Some successfully flouted the law and in instances where the EMB found out about companies operating without an ECC, the companies merely paid the ₱50,000 (US$1,908) as penalty for violation. By this time, the project was already a *fait accompli*.

The 1996 EIA revised rules and regulations, though they are still to be implemented and tested, have expanded in breadth to include environmental risk

assessment, which is the "use of scientific methods and information to define the probability and magnitude of potentially adverse effects which can result from exposure to hazardous materials" (Section 3.0 [q]); an EMP, which is a section in the EIS, that "details the prevention, mitigation, compensation, contingency and monitoring measures to enhance positive impacts and minimise negative impacts of a proposed project or undertaking" (Section 3.0 [o]); and an EGF, which is an amount of money to be deposited as a trust fund to answer for damage to life, health, property, and the environment caused by risks appurtenant to the project, or for rehabilitation or restoration measures.

DAO No. 96-37 has provided for the requirements of social acceptability. Social acceptability is defined as:

> "the result of a process that is mutually agreed upon by the DENR, the stakeholders, and the proponent to ensure that the concerns of the stakeholders, including the affected communities, are fully considered and/or resolved in the decision-making process for granting or denying the issuance of an ECC." (Section 3.0(cc), Article I)

It also means the proponent is able to meet all of the relevant and valid issues and match them with corresponding mitigative/enhancement measures together with the available resources to implement the measures and the corresponding agreements and guarantees for the fulfilment of such measures. Thus, social acceptability is determined by the ecological/environmental soundness of the proposed project, effective implementation of the public participation process, resolution of conflicts, promotion of social and intergenerational equity and poverty alleviation, effective environmental monitoring and evaluation and proposed mitigation and enhancement measures (Article IV, Section 1.0). The EMB still has to provide specific guidelines for these processes.

Complementing the social acceptability provision is the strengthening of participatory mechanisms. Thus, DAO No. 96-37 provided for a Multipartite Monitoring Team (MMT) which will undertake the monitoring of compliance by the proponent of the conditions in the ECC, the EMP and applicable laws, rules and regulations. The MMT is composed of representatives of the proponent, the DENR, and the major stakeholders, which includes representatives from the local government units (LGUs), nongovernmental organisations (NGOs)/peoples' organization (POs), the community, women sector and academe, among others. Conflicts or disputes should be resolved through alternative dispute or conflict resolution processes. These processes include mediation, facilitated decision-making and negotiations.

Upon issuance of an ECC, the proponent is required to establish Environmental Monitoring and Guarantee Funds. The Environmental Monitoring Fund will be used to support the activities of the MMT while the EGF will be used exclusively for the immediate rehabilitation of areas affected by damages in the environment caused by project construction, operation and abandonment; the just compensation of affected

parties and communities; and the implementation of community-based environmental related projects and for contingency clean-up activities. This is a great leap from the original rules and regulations in the sense that the guarantee fund mechanisms makes it unnecessary to go to courts to claim for damages.

The only projects not covered by the System are those which are not considered as environmentally critical or located within an ECA; ECPs or projects within ECAs which were operational prior to 1982 except in cases where their operations are expanded in terms of daily production capacity or area, or the process is modified; and countryside business and barangay entities (CBBEs) covered by RA No. 6810, otherwise known as the Magna Carta for CBBE (Kalakalan 20), and registered with the Department of Trade and Industry (DTI) between 1991 to 1994, inclusive.

Pending in Congress is a proposal to increase the criminal penalty under PD No. 1586 from the maximum fine of ₱50,000 (US$1,908) to an amount severe enough to deter violations. A structuring of adjudicative procedures to enable affected parties to initiate legal actions against project proponents either through the courts or through administrative agencies would likewise increase the effectiveness of the system.

Two related pieces of legislation, PD No. 1818 and Letter of Instruction (LOI) 1179, are seen as impediments to the efficacy of the EIA system because they both prohibit the courts from issuing provisional remedies (restraining order or preliminary injunction) in any case, dispute, or controversy involving an infrastructure project, or a mining, fishery, forest or other natural resource development project of the government and confer on the President the right to exempt any specific project upon recommendation of the Secretary of the DENR.

**USE OF MARKET-BASED INSTRUMENTS**

Following a World Bank Study (Environmental Sector Study, 1993) which identified water pollution control as a high priority for the Philippines, particularly BOD and total suspended solids from domestic and selected industrial sources, the Philippine government has commenced the adoption of a system of economic incentives to promote water pollution prevention and abatement to complement the current command-and-control (CAC) regulatory program.

For years, the DENR has sought to control wastewater discharges from the country's major polluters. However, water quality continues to deteriorate in many regions of the Philippines. While all industrial facilities discharging wastewater are required to have permitted treatment facilities in order to operate, many do not, and those that do often do not operate them effectively.

Under the auspices of the Metropolitan Environmental Improvement Program, a study was done to design a pollution charge program to be implemented nation-wide after

a phasing in over a five-year period. A pollution charge is a fee that is levied on each unit of pollution discharged by a source, such as an industrial plant or municipal treatment facility. Currently, environmental resources such as fresh water are not recognised as having a market value in the Philippines, leading to their overuse and subsequent deterioration. The purpose of a pollution charge is to impose a price on using natural resources, encouraging firms to factor this price into their overall production costs and encouraging them to reduce their resource use to a socially acceptable level.

Phase I of this program will be introduced at one location, to a single class of polluters, industrial sources (e.g., textile mills, piggeries, agro-processing facilities), and a single pollutant, BOD. After its successful implementation, the program will be expanded nation-wide during Phase II.

The preferred site for Phase I is Laguna de Bay. It was chosen by the DENR and other stakeholders, due to the urgent need to address declining water quality in the Lake caused by rapid urban and industrial growth and deficiencies in the water quality management program. Besides, the LLDA has a unique legal authority and institutional structure that give it the ability to implement proposed pollution charge program without further enabling legislation (RA No. 4850, as amended by PD No. 813 and EO No. 927, Series of 1983). Within its jurisdiction, it is authorised to collect a fee on both the intake and discharge of water, and to issue permits for discharges provided that the Lake is the source and ultimate receiving body for the effluents. It is also authorised to retain the revenues collected through the program. Further, the LLDA is administratively attached to the DENR, facilitating the transfer of experience in Phase II.

Phase II will adopt the technical and institutional design of Phase I, based on the experience gained during Phase I. For now, the study made a recommendation for the DENR to begin an extensive dialogue with industry, other national government agencies and LGUs in formulating a national pollution charge program that achieves environmental objectives of improving water quality and industrial pollution management. Moreover, it was suggested that in the near term, the DENR should begin setting up the necessary technical and institutional program support elements for the national pollution charge program. Over the longer term, the DENR should consider transferring the functions of water quality monitoring, permitting, compliance monitoring and inspection, and enforcement and adjudication to a new Philippine Environmental Management Corporation attached to the DENR.

The recommended charges for the first year are a fixed charge based on volume of discharge and a variable unit charge based on BOD concentration of the discharge. The pollution charge will initially be based on BOD, but will be expanded later to include other parameters of concern. A particular problem due to their toxicity are heavy metals (e.g., copper, zinc, chromium, lead and nickel). As more data becomes available on pollution sources and a better understanding of the contribution from these sources on

water quality in Laguna de Bay and its tributaries is gained, the charge can be set at the damage cost per unit of discharge for each regulated pollutant.

Upon applying this initial fee schedule to the 535 industries in the Laguna de Bay area, the program will generate an estimated ₱125.90 million (US$4.81 million) in the first year and ₱86.40 million (US$3.30 million) in the second year. An approximate 17% reduction in industrial BOD loading is expected from year 1 to year 2.

It is presumed that during Phase I, the Program will be evaluated for effectivity. Potential constraints include the lack of ambient water quality monitoring, permit compliance monitoring, information on cost-effective pollution control and prevention measures and targeted financing for environmental investments.

It must be noted that this Program covers a freshwater lake. But its approach may be viewed by the Philippines as a pilot project for a broader-based water quality management program including coastal areas.

## NATIONAL LEGISLATIVE/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

### *Legislative Mechanisms and Processes*

In the Philippines, conventions or treaties signed by the Philippine Government become effective and binding only upon ratification by the Philippine Senate. Thereafter, formal implementation is manifested through the legislative process or, in some instances, through Executive Orders issued by the President. These may direct the implementing agencies to issue rules and regulations (which may be in the form of Administrative Orders or Memorandum Circulars) to implement the details of the law.

The national legislative body is the bicameral Congress, composed of the Senate and the House of Representatives. At the local level, there are three separate sublevels of governance. At the top are the provinces, under whom are the municipalities. The third type are chartered cities, which are independent of the province. Their respective legislative bodies can pass ordinances (or local laws) of local application within the limitations of the national laws. Since 1991, when the Local Government Code was passed, a policy of decentralisation has been in place, transferring power from the national government to the local governments.

### *Distribution of Mandates and Obligations*

a. The DENR has the primary responsibility for the protection and enhancement of the quality of the environment (Section 3, EO No.192, Series of 1987). Its mandate is to be responsible for the conservation and management of the country's

environment and natural resources to assure its availability and sustainability for the present and future generations.

b. The EMB is a staff bureau of the DENR.[5] Its primary responsibilities include recommending legislation, policies and programs for environmental protection and pollution control; formulating environmental quality standards for water, land, air and noise; recommending rules and regulations for EIA and providing technical assistance in the implementation and monitoring of EIA compliance.

The EMB exercises regulatory powers through its authority to review and evaluate EIAs submitted for ECPs.

c. The PAB is a quasi-judicial body, which is responsible for the adjudication of pollution cases. Its powers involve issuing orders to compel compliance; requiring the discontinuance of pollution; issuing or renewing permits for the prevention and abatement of pollution; and serving as arbitrator for the determination of damages and losses resulting from pollution (Section 19, EO No. 192, Series of 1987 vis-à-vis Section 6 of PD No. 984). In one Supreme Court case (Pollution Adjudication Board v. Court of Appeals and Solar Textile Finishing Corporation), the Court decided that the PAB can likewise issue *ex parte* orders against an establishment to cease and desist from operating or discharging effluents and sewage where there is *prima facie* evidence of immediate threat to life or health or when emissions/discharges exceed the allowable standards.

The PAB is composed of the Secretary of the DENR as Chairman, two Undersecretaries, the Director of the EMB, and three others to be designated by the Secretary.

d. Regional Offices

In all the 14 administrative regions of the Philippines are regional offices headed by Regional Executive Directors (REDs). The Provincial Environment and Natural Resources Office (PENRO) and the Community Environment and Natural Resources Office (CENRO) are the principal implementation arms of the DENR in the provinces, cities and municipalities.

The powers and functions of the Regional Offices include the implementation of laws, policies, plans, programs, projects, rules and regulations of the DENR; co-ordination with regional offices and LGUs, among others, in the enforcement of natural resources conservation laws and regulations; and conduct of comprehensive inventory of

[5] *Under Section 34 of RA No. 8749, the EMB shall be converted from a staff bureau to a line bureau within a period of not more than two years, unless a separate, comprehensive environmental management agency is created, e.g., a National Environmental Management Agency. A line bureau has greater administrative and financial autonomy than a staff bureau and could therefore be potentially more effective in carrying out its mandate.*

natural resources in the region and formulation of regional short and long term development plans for the conservation and utilisation of natural resources.

Under DAO No. 96-37, the DENR Regional Offices are responsible for the assessment and evaluation of initial environmental examination (IEEs) and the approval or denial of ECCs for ECAs.

e. The NWRB co-ordinates all water resource development and use activities, exercises regulatory and adjudicatory functions relative to the provisions of the Water Code, e.g., the dumping of mine wastes and tailings into a river or a waterway, and prepares integrated regional water resource development plans based on the country's major basins, including Laguna de Bay.

f. The National Economic and Development Authority (NEDA) is responsible for formulating development plans and programming public investments. It works toward the integration of environmental concerns in all of its functions. It chairs the Philippine Council for Sustainable Development (PCSD) which is mandated to ensure that sustainable development principles are incorporated into the various development plans.

g. The PCG**,** created by PD No. 601, is tasked to "enforce laws, promulgate and administer regulations for marine environmental protection of the territorial waters of the Philippines." It is the agency responsible for the control of waste disposal to inland navigable waters and to the sea, in collaboration with the DENR. Likewise, it has the power to classify and inspect all vessels within Philippine territory and to apprehend vessels violating existing laws and regulations. It has the power to investigate marine casualties or accidents. Specifically, it has the following functions, among others: to maintain liaison with foreign and local agencies concerned with the enhancement and promotion of marine resources conservation; to conduct research and prepare position papers on marine environmental protection; and to conduct information campaigns on the effects of marine pollution.

With regard to "inland navigable rivers", in actuality, the only river the PCG operates in is the Pasig River which connects Laguna Lake and Manila Bay, running through Metro Manila.

h. The NOCOP, created by PD No. 602, acts as the agency of the PCG that deals directly with oil pollution. It has the overall responsibility in the containment, removal, and treatment of marine pollution in all bodies of water within the territorial jurisdiction of the Philippines. The NOCOP is divided into eight districts known as Marine Environment Protection Offices (MEPOs) located in Manila, La Union, Batangas, Cebu, Iloilo, Palawan, Davao and Zamboanga.

i. The PPA is responsible for the development and operation of all ports in the Philippines. It has authority to apprehend vessels calling at ports of the Philippines for violation of Philippine laws. Upon official request or notice from the PCG, it can withhold the entry or departure clearance of vessels for marine pollution violations. It oversees the permit system at all ports.

Although the development and operation of port reception facilities is not specified among its powers, the PPA is the most logical agency to be responsible for such concerns.

j. MARINA is the agency that has general jurisdiction and control over all persons, corporations, firms, or entities in the maritime industry of the Philippines. In general, it has the power to enforce laws, prescribe and enforce rules and regulations, including penalties for violations governing water transportation and the Philippine merchant marine and for the prevention of marine pollution. Moreover, it has the power to deputise the PCG and other law enforcement agencies to effectively discharge these functions. Specifically, it is responsible for the registration of all Philippine vessels, domestic and overseas, through a Certificate of Philippine Registry. It assists in pollution prevention by ensuring that registered vessels comply with existing standards. The MARINA Administrator has the power to investigate, by himself or with the assistance of other appropriate government agencies or officials, or experts from the private sector, any matter within the MARINA's jurisdiction.

k. The LLDA is mandated to manage and control the resources of Laguna de Bay for its balanced socio-economic development and to carry this out with due regard for environmental concerns. The LLDA is an attached agency of the DENR.

l. LGUs. Under the Local Government Code and its implementing rules and regulations, LGUs are empowered to: share responsibility to manage and maintain ecological balance within their jurisdictions (Section 3); exercise powers necessary to promote the general welfare of residents including the enhancement of the right of the people to a balanced ecology (Section 16); and enforce laws and regulations on the environment.

Moreover, under the National Pollution Control Decree, LGUs can prescribe higher (presumably more stringent) standards than that provided by the DENR, subject to the latter's approval. In addition, and under DENR DAO No. 30, Series of 1992, LGUs are specifically empowered to: issue ECCs for projects and businesses under Kalakalan 20; implement solid waste disposal and other environmental systems and services related to general hygiene and sanitation, such as sewage and household waste disposal; and implement CDOs of the PAB, among others.

m. Inter-agency bodies

The Presidential Task Force on Water Resources Development and Management (PTFWRDM), organised by EO No. 374 (October 15, 1996) serves as an oversight body to ensure the efficient sourcing and use of water resources, particularly the provision of policy and program recommendations on: water supply planning and co-ordination, including the efficient allocation of water resources to its different users; prioritisation of programs and projects critical for ensuring sustainable, adequate, safe and affordable water supply; co-ordination and monitoring of water policies and programs; and pricing policies on water resources. This would have relevance to the prevention of pollution from land-based sources.

The head of the Task Force is the Secretary of the DENR and the chair of the NWRB serves as its Vice-Chair. Members include the Secretaries of four other Departments, Presidents of the League of Provinces and League of Municipalities, Administrators of the main water utility agencies, and three representatives from the private sector, preferably from the environmental, water management and consumer groups.

More closely related to marine pollution, the Inter-Agency Task Force On Coastal Environment Protection was formed by virtue of EO No. 117, Series of 1993 at the initiative of the DENR, as an extension of the Coastal Environment Program launched by the Department in the early part of the same year. The creation of the task force was in answer to the need for co-operation and co-ordination among the departments and agencies enforcing coastal environment protection to strengthen and sustain law enforcement systems throughout the country. Among the most notable functions of the Task Force are to:

> "a) Formulate policies and priorities, promulgate guidelines and develop effective enforcement programs for coastal environmental protection on the national, regional and local levels; x x x
>
> d) Co-ordinate, monitor and evaluate coastal environmental protection programs/development projects initiated by the Government, LGUs and non-government organisations for a sustained law enforcement towards a more effective and efficient protection of our marine waters and aquatic resources;
>
> e) Undertake information dissemination and education campaigns on coastal environmental protection to create greater awareness on coastal environmental concerns and protective measures; [and]
>
> f) Propose, from time to time and as the need arises, to the President the passage of laws or amendments or presidential issuances, to enhance the protection of [the] coastal environment; x x x."

However, the effectiveness of the Task Force has been limited. So far, it has focused only on traditional law enforcement, as indicated by the initial designation of the Department of National Defense-Philippine Navy as lead agency, to be replaced by the Philippine National Police (PNP) after one year.

The National Maritime Safety and Co-ordinating Council (NMSCC) based in the Department of Transportation and Communications (DOTC) has a committee on marine environment headed by the PCG. Again, however, it has not been very effective in terms of co-ordinating efforts for implementation of the conventions.

At a higher level is the Cabinet Committee on Marine and Ocean Affairs, but this committee does not meet very often, and has focused mostly on political matters.

PD No. 984 requires the formation of an Inter-Agency Advisory Council composed of the secretaries of nine departments, including Environment, Industry and Agriculture, and four other government agencies. The PD does not specify what the role of the Council is. It is chaired by the Commission on Human Settlements, which no longer exists. There is no equivalent council at the present.

An Inter-Agency Advisory Council is also organised under RA No. 6969 on Toxic and Hazardous Substances to assist the DENR in "the formulation of the pertinent rules and regulations for the effective implementation" of the Act, and the "preparation and updating of the inventory of chemical substances and mixtures that fall within the coverage" of the Act; and to "conduct preliminary evaluation of the characteristics of chemical substances and mixtures to determine their toxicity and effects on health and the environment for recommendation to the DENR."

This Council is chaired by the DENR with membership from eight other departments (only two being different from those under PD No. 984), plus the Philippine Nuclear Research Institute and a representative from a health and safety NGO.

***Requirements for Public Participation and the Role of Non-Governmental Organisations***

A major policy initiative begun by the Aquino government during the late 1980s is the institutionalisation of the participation of NGOs in the affairs of the government. Given the limited capacities of government to respond to the needs of the citizenry, especially at the community level, NGOs are seen to be the vital links between the government and the people. A *"Policy Agenda for People-Powered Development"* was adopted by the Aquino Cabinet, which established the framework for NGO participation in decision-making, planning, and implementation of development programs.

Several provisions on empowerment have been institutionalised in the 1987 Constitution, as follows:

"**Article XII, Section 15**. The State shall respect the role of independent people's organisations to enable the people to pursue and protect within the democratic framework their legitimate and collective interests and aspirations through peaceful and lawful means.

**Article XII, Section 16**. The right of the people and their organisations to effective and reasonable participation at all levels of social, political and economic decision making shall not be abridged. The State shall, by law, facilitate the establishment of adequate consultation mechanisms."

To further reinforce the preceding sections are the following provisions on the right to information and the need for the government to be transparent, to wit:

"**Article III, Section 7**. The right of the people to information on matters of public concern shall be recognised. Access to official records and to documents and papers pertaining to official acts, transactions, or decisions as well as to government research data used as basis for policy development, shall be afforded the citizen, subject to such limitations as may be provided by law.

**Article II, Section 28.** Subject to reasonable conditions prescribed by law, the State adopts and implements a policy of full disclosure of all its transactions involving public interest."

In terms of policy, the government has adopted the Earth Summit's non-binding document, Agenda 21. Its provisions on public participation were translated into the Philippine Agenda 21. Philippine Agenda 21 recognises that one of the fundamental prerequisites of sustainable development is broad public participation in decision-making, specifically in the protection and management of local natural resources. The emerging strategy is to involve individuals, groups and organisations in environmental policy decisions especially those that affect the communities where they live and work. This is a move towards real social partnership in support of common efforts for sustainable development.

This community-driven sustainability is programmed to help strengthen major groups such as women, indigenous peoples, children and youth, NGOs, LGUs, workers and trade unions, business and industry, the scientific and technological community and farmers.

Further, the Philippines has notably legislated strict provisions for consultations especially with local non-governmental organisations and communities. Sections 26 and 27 of RA No. 7160 require:

"every national agency or government owned or controlled corporation authorising or involved in the planning and implementation of any project or

program that may cause pollution, climatic change, depletion of non-renewable resources, loss of cropland, rangeland, or forest cover, and extinction of animal or plant species, to consult with the local government units, non-governmental organisations, and other sectors concerned and explain the goals and objectives of the project or program, its impact upon the people and the community in terms of environmental or ecological balance, and the measures that will be undertaken to prevent or minimize the adverse effects thereof."

Otherwise the project cannot be implemented.

"**Section 27. Prior Consultations Required.** - No project or program shall be implemented by government authorities unless the consultations mentioned in Sections 2 (c) and 26 hereof are complied with and prior approval of the sanggunian [local council] concerned is obtained x x x."

Perhaps the best source of legislation pertaining to public participation can be found in the EIA System. Realising that the environmental impact of a particular project extends not only to the technological and physical spheres but to the social and cultural dimensions of the specific ecosystem involved as well, DAO No. 96-37 gives emphasis to the importance of public participation and a transparent EIS process. The goal of public participation in the EIA process is to enable the citizens to take responsibility for environmental protection and management through active involvement in decision making. The most common forms of public participation are public consultation and public hearing.

Public participation is elicited from the scoping stage to the conduct of baseline. Studies/ecoprofiling and validation, impact identification, prediction and evaluation, negotiation and dispute/conflict resolution, to environmental management planning and environmental monitoring.

Non-observance of this requirement for public participation may lead to the rejection of a project on the ground that it is not socially acceptable. On the other hand, in the event that a substantial percentage of key stakeholders remain unconvinced, the issuance of an ECC should be withheld.

All projects covered by the EIS System are subject to periodic compliance monitoring. To undertake this, an MMT shall be organised for all projects with an ECC. The MMT shall be composed of representatives from the proponent, the DENR, LGUs and a broad spectrum of stakeholder groups that may be identified such as affected community groups or POs, women sector, academe, relevant government agencies and other sectors.

In the establishment of the EGF, the representatives from the communities affected as well as the LGUs, shall negotiate with the proponent as to the specific amount

and form of the fund, the terms of reference for fund operationalisation and terms and conditions for the payment of aggrieved parties, among others. To manage the EGF, an EGF Committee shall be established. Representatives from the affected communities and from duly accredited NGOs/POs sit as members.

The Cash Fund portion of the EGF shall be earmarked for community-based environmental training/programs.

An equivalent of the EGF has also been established in mining activities under the Mining Act of 1995, complete with multisectoral monitoring teams.

Three representatives from the private sector, preferably from the environmental, water management and consumer groups, are included in the PTFWRDM.

## INTERNATIONAL CONVENTIONS AND INITIATIVES

### *Ratification Process*

Article VII, Section 21 of the 1987 Constitution states that:

> "No treaty or international agreement shall be valid and effective unless concurred in by at least two-thirds (2/3) of all the members of the Senate."

Article II, Section 2 makes it a State policy to "adopt the generally accepted principles of international law as part of the law of the land." This means that the Constitution gives a treaty the same weight and value as a statute of Congress. Thus, in case of conflict between a treaty and a statute, the prior act is superseded by the later one in point of time. However, it does not have the weight or force of a constitutional provision, which means that in case of conflict with the Constitution, the latter prevails. When a treaty is superseded by a subsequent statute of Congress, the treaty is considered repealed or abrogated as part of the law of the land but it still subsists as an engagement of the Philippines, although it may not be enforceable by the courts.

### *Specific Instruments Ratified and Extent of Implementation*

Following are the specific international instruments ratified by the Philippine Senate. These conventions/instruments are on different levels of implementation. For instance, OILPOL has been executed in the country through the enactment of a number of Memorandum Circulars passed by the PCG. Thus, MARPOL 73/78, which superseded the OILPOL, and although not yet ratified by the Philippine Senate, has been to a certain extent implemented in the country because it has already a basis in law through the older Convention.

The Philippines has the necessary legal and policy framework for the implementation of conventions, treaties and international instruments. Often, the provisions of these international instruments have been translated into national legislation. In fact, even those that the Senate has not ratified are to a certain degree being followed in the country, for example, the SOLAS, which is executed through PCG 01-81. But the most crucial factor for full implementation is the question of whether or not enforcement capabilities are in place.

1. The London Convention, 1972. Ratified by the Philippines in 1973.

The Philippines is one of the three countries in East Asia (the others being China and the Republic of Korea) that have ratified the 1972 London Convention. It is therefore unfortunate that its implementation in the country is at a very low level. There is a general prohibition to "dump" under PD No. 979 and implementing regulations, namely, PCG MCs Nos. 03-94 and 02-91. The violation of these prohibitions results in administrative, criminal and even civil liability. The generality of the law and the regulations however, make compliance and enforcement difficult. The regulations are very poorly drafted, with an obvious confusion in the treatment of dumping under the London Convention 1972 and discharge under MARPOL 73/78. The PCG regulation also imposes requirements on other co-equal agencies such as EMB and PNRI, or agencies at a higher level, such as the DOH, over which the PCG has no authority.

Moreover, the means for implementation of the prohibition are not specified. The result is that not a single individual or entity has ever been prosecuted for dumping waste in the sea in the country, although there are many anecdotal reports of such violations.

The law and regulations need to be rationalised and updated to keep up with the amendments to the Convention. For example, as earlier mentioned, at present incineration of burnable trash or solid matter may be allowed by the EMB in a "designated area" (PCG MC No. 02-91, Sec. 5b; PCG MC No. 03-94). This provision is not completely consistent with the London Convention's prohibition on incineration at sea of industrial waste and sewage sludge.

There is no indication that the country is considering the 1996 Protocol for ratification, or conducting an assessment for that purpose.

2. Basel Convention, 1989. Ratified by the Philippines in 1993.

RA No. 6969 and DAO No. 29, Series of 1992 deal with "cradle-to-grave" measures for waste, and in general, prohibit importation or bringing into Philippine territory, including its maritime economic zones, any amount of hazardous and nuclear wastes in any part of the Philippines without DENR clearance (RA 6969, sec. 13). They also prohibit in general the export of such wastes without a permit from the DENR. The

qualifications specified by the Convention and the reporting requirements to the UNEP are not found in the law.

3. CLC 1992

4. FUND 1992

These two Conventions were ratified only on 7 July 1997, and will therefore take effect in 7 July 1998. At present there is no implementing legislation.

Other conventions and international instruments relating to the marine environment which the country has ratified are:

5. UNCLOS;

6. The Rio Declaration;

7. Agenda 21;

8. Convention on Biological Diversity, signed in 1992 and came into force on 29 December 1993; and

9. International Convention for the Regulation of Whaling.

As mentioned above, MARPOL 73/78 has not been ratified, but some implementing legislation is in place. These however, are couched in general terms and the implementing regulations are not very effective in providing guidelines for all concerned, including the implementing government agencies. Over 200 violators were apprehended in 1996, but because of the limitation on the amount of the penalties provided by the law, the amounts levied do not appear commensurate to the environmental harm caused.

The Philippines, through NOCOP, participates in the ASEAN OSRAP, and has regional arrangements on oil spill contingency with Indonesia and Malaysia. However, at the national and local levels, there is no specific contingency planning. While there is some interest in ratifying OPRC, there have been no concrete moves to do so as yet.

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

The Philippines belongs to that growing number of countries in the world with an array of legislation designed to advance specific aspects of environmental management, one of them marine pollution. As seen from the preceding sections, Philippine environmental laws are not wanting numerically. In fact, the most striking characteristic

of this body of legislation is its piecemeal nature, which makes their study a daunting task. This poses a constraint for both the implementers and the public who must comply with its prescriptions.

The effectivity of the legislation is further hampered by their lack of clarity and comprehensiveness and the insufficiency of enforcement measures, particularly in the marine pollution regulations. Among the implementing regulations issued at administrative level, this is caused by an insufficient understanding of the issues and a lack of essential scientific elements such as trained personnel and equipment.

There is a lack of clear mandates or delineation of duties, as well as co-ordination among the maritime agencies, i.e., the MARINA, PCG, PPA, and to a certain extent, the DENR. Thus, the PCG, an agency of the Armed Forces and therefore a police enforcement body, claims regulatory jurisdiction. There is some dispute with MARINA, the agency with regulatory powers over ships on this matter. This has not been clearly settled, although a *modus vivendi* exists. However, the interests of the prevention of marine pollution are not efficiently served.

The PPA, on the other hand, has jurisdiction over all matters within the port areas. Although, as mentioned above, the PPA is not specifically mandated to provide, or ensure the provision of, reception facilities, this may be considered as part of its general powers and responsibilities over the ports.

The DENR has jurisdiction over the treatment of wastes on land, and therefore must work with the maritime agencies with regard to what is to be done with the marine wastes once it reaches land. The LGUs as well have jurisdiction over waste management within their territories. However, no co-ordination mechanisms exist as of the present.

This lack of clear jurisdictional delineations and very low enforcement capacity has led to the issuance of regulations that are not enforceable. A specific example is PCG MC No. 02-94 on prevention of pollution by garbage. A number of prohibitions regarding the disposal of garbage into the sea are addressed to resort owners, LGUs, and industrial and manufacturing plants. But the PCG has never exercised jurisdiction over these entities, and even if it did, it has no means of enforcing these regulations. Even in ships, its clear constituency, the PCG does not have the resources or system to enforce these regulations, which thus remain only on paper.

The factors constraining implementation can be summarised as follows:

1. **Insufficient funds in both the short term and long term**. It is true that the government agencies either operate on very tight budgets, or are loaded down by bureaucratic inefficiencies, or both. Thus in the implementation of new programs, the experience is that the presence of additional sources of funding in addition to the government agencies' allocations from the national budget is crucial. If there are no such

additional sources, only those targets that coincide with the agencies' priorities will be met. An example in point is the DENR. A review of its budget reveals that past allocation of resources are heavily weighted towards the traditional sectors of forestry, lands and minerals. The marine and coastal environment sector is only beginning to gain recognition.

A look at resource allocations for pollution control shows that budget allocation and human resource complement of environmental agencies have had modest increases in the past years, reaching a maximum of 0.005% of the GNP in 1988 and 0.045% in 1990. The total human resource complement in 1990 for both EMB and DENR regional offices likewise shows a 10% increase over that of the previous years. However, despite these, the budget and human resource complement have not kept pace with the demands and expectations placed on the environmental agencies. The presence of many pending environmental bills may appear to provide evidence of support for the achievement of anti-pollution and environmental goals, but environmental budgets are obviously more accurate indicators of the true intent of the legislative and executive branches. Budget data suggest that despite major policy pronouncements, environmental protection still occupies a low priority.

2. **Inadequately trained personnel and lack of equipment/infrastructure.** These problems are deeply rooted in the first issue of lack of funds. The enforcement of anti-pollution laws and regulations needs the strong back-up of trained technical personnel. By way of illustration, penal sanctions under environmental laws are only effective if sufficient effort is directed to the detection and prosecution of offenders. Without the deployment of trained personnel and the necessary equipment, compliance by the users of the natural resource (i.e., the water systems, oceans and seas) and the general public is not assured. Like in other developing countries, the problem here is the low salary scale for technical positions. Government agencies cannot attract qualified human resource or, if they spend for training, once personnel are trained and become experts in their field, they leave to join the private sector. Thus, there is a rapid turn-over rate in government trained technical personnel.

Another example is in the aspect of monitoring, an essential component of enforcement. The success or failure of any environmental quality management program and regulatory measures can be judged only by monitoring the quality of water bodies and comparing these measurements with those specified in the objectives. Again, with no trained personnel and lack of monitoring and laboratory equipment and the appropriate infrastructures, all efforts towards this end are ineffectual.

3. **Lack of public concern, awareness and participation.** While again, there is much in Philippine law about public participation, in reality, only organised groups participate effectively in environmental decision-making processes. Of course, Philippine NGOs and POs are known to be vigilant and assertive considering their heightened political awareness. These NGOs and POs also have attained such a degree of

sophistication in their work that they can compete with the government in terms of delivery of public services. In recognition of their potential, many of them have been included in different government task forces and monitoring bodies. However, NGOs and POs working with marine pollution are few and far between. Most are in the traditional sectors like forestry, land issues and mining.

Public participation can also be manifested in the form of local resource stewardship to facilitate the sustainability of, for instance, coastal communities. Likewise, public education among coastal communities can assist monitoring and surveillance out of a sense of communal responsibility that could facilitate the work of enforcement officials.

4. **Fragmented Bureaucracy.** As mentioned above, inter-agency conflicts over policies, jurisdictional responsibility and specific resource uses, inadequate communication and poor co-ordination are among the many problems that beleaguer the bureaucracy and thus contribute to the ineffective enforcement of laws, rules and regulations. There is a clear need to strengthen co-ordination and to enhance inter-sectoral linkages and interdependencies in decision-making, especially with respect to agencies in charge of economic and social development (i.e., NEDA, Department of Energy, DTI, etc.) and those concerned with the environment (i.e., DENR).

So far, inter-agency bodies have not been effective in institutionalising co-ordination. Various inter-agency task forces for specific environmental issues continue to be established, but these have limited effect on co-ordination, particularly in the long-term. Ad-hoc bodies by their nature are short-term, and their activities hardly ever result in institutionalisation of co-ordination.

5. **Lack of political resolve.** This is heavily dependent on the leadership. Essential is not only the determination by the leadership (at any level) that marine pollution has high priority, but follow up on the attendant activities has to be done with seriousness and singularity of purpose.

Some practical steps that may be useful in reinforcing and institutionalising implementation may include the following:

Since an inventory of existing legislation pertaining to marine pollution has already been started, a critical analysis of these pieces of legislation to find the gaps, overlaps and conflicts in the law and how to resolve them through the proper amendments or enactments should be undertaken. Updating of laws should take into consideration technological progress and demographic growth, among other factors.

Gearing of efforts towards strengthening existing institutions rather than abolishing them and creating new ones. These efforts can serve as the basis of more intensive and effective regulation to include efficient procedures and higher penalties.

Rewarding of compliance through a system which offers incentives such as fiscal benefits and resource permitting, among others. The country should pursue its initial endeavour to introduce and institutionalise MBIs. However, care should be taken so as not to make it appear that MBIs are a license to pollute. Trying these instruments can prove that laws can perform other functions beyond mere regulation in an administrative sense and deterrence in a criminal sense.

Simplification and rationalisation of cumbersome bureaucratic machinery. Promotion of alternative dispute resolution techniques to minimise the resort to traditional and inefficient remedies like court actions.

Pursuance of laws and policies that emphasise preventive rather than curative measures.

Incorporation of environmental law into continuing legal education for lawyers, prosecutors, judges and administrators, particularly on new legal instruments, processes and procedures and new institutional approaches introduced via the ratification of international instruments/conventions.

Better co-ordination of the activities of various government agencies and the harmonisation of their rules and regulations in order to create a comprehensive environmental management structure.

Effective decentralisation or devolution of environmental administration. The first consideration that is to be addressed is the hiring and/or development of local professional technical and managerial human resource.

Stronger appeal for budgeting/financial support. Advantage may be taken of the current strong support for environmental issues.

Efforts to acquire and keep expertise at the government agencies. Training and technological support that may be provided under international conventions may be taken advantage of.

There are a number of alternatives to the question of making the existing legislation in the Philippines more effective. These are first, to make the most of existing legislation and augment these by amendatory or clarificatory regulation. A second alternative is to undertake a comprehensive revision. This is ideal, of course, but the process is long and complicated and results may be dictated by the political situation. A third option which combines the first two is to push for amendment and revision when political conditions are opportune, while providing for interim measures which would make the most of the present legislation.

Before any of these can be done, however, a decision to make a serious attempt to understand and be familiar with the technical issues is essential.

The goals of environmental protection, specifically that of the marine environment, have been incorporated in the Constitution, in statutes, rules and regulations, and even in official policy statements and in formal development plans. Efforts at promoting and improving legislative frameworks for EIA, water pollution, use of agricultural chemicals, waste management, among others, continue to evolve and take on new forms. The next step is to learn lessons from the experience of implementing them.

# Republic of Korea

## THE MARINE POLLUTION SITUATION IN THE REPUBLIC OF KOREA

The Korean peninsula is approximately 1,000 km long and 250 km wide. It is situated in the northeastern part of the Asian continent, bordered by China on the north and Russia on the northeast. To the east lies the East Sea (also known as the Sea of Japan), while the Yellow Sea lies to the west, and the East China Sea, which extends up to the Korean Strait lies to the south (Lee, 1984).

The Republic of Korea claimed a 12 nautical mile territorial sea (three nautical miles in the Korean Strait) and 200 nautical mile EEZ through the Law of Territorial Sea and Contiguous Zone (Law No. 3037, December 1977) and the EEZ law (Law No. 5151, August 1996). In the west and south coasts lies the Republic of Korea's continental shelf. Stretching about 68,470 sq. km, Korea's continental shelf is considered to be the potential source of various mineral resources, oil and natural gases.

For the last three decades, various pollutants, which were produced by industrial activities and municipalities located along the coastal area, have been discharged into the seas without proper treatment. The discharge of wastewater shows an average yearly increase of about 12.6%. As of the year of 1996 the discharge was reported at 8.926310 $m^3$ per day, and the BOD discharge rate was 98,582 kg per day (Ministry of Environment [MOE], 1997). These pollutants have led to cumulative impacts on the coastal ecosystem and caused serious problems of eutrophication, red tides, loss of habitat and mass mortality of marine organisms.

Since 1991, based on chemical oxygen demand (COD) measurements, coastal water quality has been maintained at the second class standard. Although the COD level is decreasing, the levels of Nitrogen (P) and Phosphorous (P), which are the main triggering factors of red tides, were much higher than the standard. This implies the urgent need for construction and expansion of sewage treatment facilities, which are equipped for the removal of N and P, to improve the coastal water quality.

With the increased activities of cargo transport by ships, marine waters of the Republic of Korea have suffered from various oil spill accidents. There are approximately 300 cases of oil spills annually. During the period of 1991-1996, a total of

1,970 cases of oil-spill accidents have taken place, discharging 35,500 kl of oil into the sea. The spill accidents were mostly due to oil tankers, and the major cause was identified as carelessness of crew members. In addition, the reclamation and infilling of tidal wetland, carried out in large scale mostly on the west coast since 1960s, have caused the loss of important marine habitat and fishing ground.

The Government of the Republic of Korea recognises dumping as an effective instrument in dealing with the problem of waste generated from land-based activities, and allows the same under regulation. Ocean dumping of land-based waste has increased since 1990s, due to shortage of landfills and the fact that the cost of dumping is lower than for land filling and incineration. In 1996, five million tons of waste, which is equivalent to 0.06-0.08% of national wastes of 9.5 billion tons per year, was dumped into adjacent seas to the Korean Peninsula.

## NATIONAL MEASURES ON MARINE POLLUTION

### *General Situation of Legal Regime Dealing with Marine Environmental Management*

For more than three decades, the Republic of Korea's first major goal was to establish a self-reliant industrial nation and transform itself from an agricultural backwater into a modern industrial economy to provide a decent way of life for its people. Such development-oriented economic policy, however, brought irreversible ecological disruption. In 1963, the Public Nuisance Act, the first law relevant to environment management, was enacted.

Since there was little concern for environmental quality and economic growth was the top governmental priority, there was little enforcement of this Act. Environmental issues began to be viewed as strategically important only after the Republic of Korea participated in the Stockholm Conference on the Human Environment in 1972. The Republic of Korea slowly drew lessons from the developed countries and realised that, when undertaking economic development, great attention must be paid to environmental protection (Hong and Lee, 1995).

As an initial step toward rudimentary environmental policy, the Government of the Republic of Korea took a series of actions including the enactment of the Environment Conservation Act of 1977 and the Prevention of Marine Pollution Act of 1977. The Environment Conservation Act of 1977 for the first time provided a legal foundation for important pollution countermeasures such as setting environmental

standards, conducting EIA, designating special management areas and introducing the polluter pays principle in relation to pollution control expenses. However, the provisions of this Act were only passively enforced due to financial and organisational constraints.

The increased national wealth and enhanced awareness regarding the need for environmental protection resulted in the inclusion of an environmental conservation plan as a separate chapter in the Republic of Korea's Sixth Five-Year Economic and Social Development Plan (1987-1991). With this national plan, new and precise action programmes covering many fields of environmental protection were developed and implemented (MOE, 1991).

Since the 1990s, the Government of the Republic of Korea has recognised that management of the marine environment is vital for the protection of human health and sustainable utilisation of marine resources. In 1990, the Government elevated the Environment Administration to cabinet-level status thereby establishing the MOE. The Ministry of Marine Affairs and Fisheries (MOMAF), a superagency dealing with maritime affairs and fisheries, was established as a cabinet-level office in 1996.

The MOMAF implements the Ocean Management Policy of the Republic of Korea, which is based on three main principles: sustainable development, integrated management and the precautionary principle. Key elements of the Ocean Management Policy include ICM planning, implementation of the Five-Year Plan for Marine Pollution Prevention and implementation of a sustainable fisheries policy. The Five-Year Plan on Marine Pollution Prevention (1996-2000) includes programmes and projects that contribute to preventing and reducing land-based and ship-based sources of marine pollution.

Specific pieces of legislation dealing with marine pollution are discussed in the following sections.

In 1990, the Environment Conservation Act of 1977 was replaced by the Framework Act on Environmental Policy (Law No. 4257, 1990). The Framework Act provides the legal basis for the MOE to set national environmental policy and establishes a long-term environmental management plan. It stipulates the core principles of environmental policy and declares that both harmony and balance between humans and the environment are essential to the health of the nation, cultural life, the conservation of national territories and sustainable national development. It also clarifies that the polluter pays principle is the main mechanism for pollution control. Since 1990, several individual laws have been also enacted, including the Natural Environment Conservation

Act (Law No. 4492, 1991), the Act on the Disposal of Sewage, Excreta and Livestock Wastewater (Law No. 4364, 1991), the Wastes Control Act (Law No. 4363, 1991), the Prevention of Marine Pollution Act (wholly amended Law No. 4365, 1991) and the Environmental Impact Assessment Act (Law No. 4567, 1993). Presently, about 20 laws provide the legal framework for the protection of marine environment and control of polluting activities in the Republic of Korea.

### *Legislation on Protection of the Marine and Coastal Environment*

#### Legislation for the Control of Ship-Based Pollution

#### Prevention of Marine Pollution Act

The Prevention of Marine Pollution Act was wholly amended on March 8, 1991 (No. 4365), June 11, 1993 (No. 4558, No. 4559), December 29, 1995 (No. 5098) and on April 10, 1997 (No. 5336). The main purpose of this Act is to protect the health and property of the people by preserving the marine environment through the regulation of, among others, oil, harmful liquid substances and wastes discharged into the sea from ships, marine installations and like sources and removal of marine pollutants.

This Act is the most important statutory law affecting the marine environment. It provides principles and regulations to prevent marine pollution from vessels, offshore facilities and ocean dumping. The Act applies to marine pollution resulting from the activities of vessels and offshore facilities in the waters contiguous to the territory of the Republic of Korea, and from sea-bed mining area authorised under the Submarine Mineral Resource Development Act, as well as marine pollution arising from vessels registered in the Republic of Korea and all the marine pollution in the Specially Managed Coastal Area designated for coastal water pollution control.

The MOMAF has general authority to investigate the status of marine pollution and establish the water quality standards in each marine area. The sea water quality standards are divided into three categories. The first class standard applies to marine areas for fisheries and mariculture. The second class standard is for marine areas set aside for swimming and other recreational purposes. Finally, the third class standard applies to marine areas for the use of industries and ship harbouring. Furthermore, the MOMAF may designate the “Specially Managed Coastal Area” where certain restrictions can be made on the use of the marine area, the installation of facilities therein and the total quantity of the pollutants discharged thereto.

## Regulation of Marine Pollution from Ships

The Prevention of Marine Pollution Act states that the discharge of oil and oily mixtures is permitted only under the conditions of the Ordinance of the MOMAF (Art. 5). The Act also regulates the discharge of noxious liquid substances from ships (Art 11). The ministerial ordinance follows the requirements of MARPOL 73/78, incorporating the regulations of Annexes III and V of MARPOL 73/78.

Discharge of wastes from ships is prohibited unless the following requirements are met (Art. 16): First, discharge of wastes is permitted if it is necessary to secure the safety of the ship or to save human lives, or if the waste is discharged because the ship is damaged. Second, discharge of human wastes from crew or passengers is permitted if they are discharged following the requirements of the ministerial ordinance. Third, discharge of wastes is allowed if it is permitted by the Public Waters Reclamation Act. Fourth, discharge of wastes, whose inland disposal is difficult, is permitted if it was discharged following the requirements of the ministerial ordinance. The fourth category of discharge refers to actual dumping of wastes and will be discussed later.

## Regulation of Ocean Dumping

The London Convention 1972 entered into force for the Republic of Korea in 1994. In 1972, the phrase ocean dumping was rarely heard in the Republic of Korea. However, with rapid industrialisation, especially with the tremendous growth of chemical and heavy industries since the mid-1970s, the need for safe disposal of industrial wastes began to draw public attention. The Government responded with regulations defined in the Prevention of Marine Pollution Act.

According to the Act, “wastes which are difficult to dispose on the land” may be disposed into the sea in accordance with the Ordinance of the Prime Minister. The Ordinance prescribes the area where the waste may be disposed, disposal method, kinds of waste that may be discharged and other necessary matters (Art. 16(4)). The sea area may be designated only in accordance with the procedure specified in the Ordinance.

Under Article 18, a ship to be used for the transportation and discharge of waste into the sea may be registered with the Minister of Environment (now the MOMAF) under conditions prescribed by Presidential Decree. The owner of the ship is required by Article 19 to report the following: 1) where the waste is discharged; 2) when the ship is not used for transporting wastes for a period longer than that prescribed by the

Ordinance; and 3) when he decides not to use the ship for the purpose of transporting wastes. The master of the ship shall keep a waste disposal record, with the details of each disposal, including the quantity of waste discharged (Art. 22).

Article 53 prohibits the abandonment of ships in the sea unless in an area prescribed by Presidential Decree, and in such a manner as prescribed by the Joint Ordinance, or if a wrecked ship is "deemed difficult to remove" and the owner leaves it in accordance with the Presidential Decree. The dismantling of a ship is subject to conditions as well, to prevent the discharge of wastes into the sea.

#### Other Marine-Based Sources of Pollution

Under the Fisheries Act, the MOMAF may designate as reserved the waters deemed suitable for spawning marine animals, originating seeds and sapling of marine plants, or growing fries (Art. 67). This is for the proliferation and protection of the fishery resources. The control of the reserved waters is determined by the ministerial ordinance. Any person who carries out a reclaiming or dredging work, or who desires to execute any construction work which might cause an alteration of the flux or level of water in the reserved water, needs to obtain the approval of the MOMAF (Art. 69).

The head of provincial governments can designate the following waters as rearing waters with the approval of MOMAF:

- waters which mass sedentary marine animals and plants inhabit; and
- waters on which marine seeds and saplings are stocked or facilities are installed.

The use of rearing waters may be restricted or prohibited according to the ministerial ordinances.

### Legislation for the Control of Land-Based Pollution

#### Water Quality Conservation Act

The Water Quality Conservation Act was enacted on August 1, 1990 (No. 4260), and amended on May 31, 1991 (No. 4388), December 8, 1992 (No. 4536), December 27,

1993 (No. 4653), January 5, 1994 (No. 4714), August 3, 1994 (No. 4782), August 4, 1995 (No. 4970) and on December 29, 1995 (No. 5095). The purpose of this Act is to enable all citizens of the nation to live in a healthy and comfortable environment, by preventing potential danger and injury to public health and the environment due to the pollution of the water and by properly managing and preserving the quality of public waters such as rivers, lakes and marshes.

The Water Quality Conservation Act is the major regulatory statute for controlling land-based sources of pollution. It provides the legal instruments to control the cumulative impacts of marine pollution by restricting the total input of pollutants in a certain body of coastal water.

The basic approach of the Act is emission control based on permissible discharge standards set by the Ordinance of the MOMAF (Art. 8). Current emission standards, commonly denominated in parts per million (ppm), are strictly concentration-based. However, the Minister can prescribe emission standards by total quantity in cases where the water quality does not meet the environmental standards and thus threatens the health of residents and growth of vegetation and animals (Art. 9).

Regulatory mechanisms designed to enforce the emission limitations include direct regulation (or command and control) and the discharge dues. Those who intentionally violate the emission standards or who emit without permits are subject to a maximum of seven years imprisonment or a maximum fine of 50 million won (US $23.81 milllion) or both (Art. 56). The more effective means of enforcing effluent standards is the discharge dues that are enforced against those who emit certain pollutants beyond the permissible discharge standards (Art. 19). Because the discharge dues do not have an upper limit, as in the case of fines, it is fair to say that the discharge dues are essentially a form of direct regulation enforcement rather than environmental regulation through economic incentives (Lee, 1991).

The Water Quality Conservation Act also prohibits certain activities such as the discharge of industrial and hazardous wastes into public waters (Art. 29).

In conclusion, this Act has various mechanisms to protect the rivers, lakes and coastal waters of the Republic of Korea. However, the present discharge standards, which are concentration-based, have hardly kept pace with the past 10 years of rapid growth of economic activities in the Republic of Korea.

## Legislation for Coastal and Marine Management

### Coastal Management Law

Last December 1998, the Parliament passed the Coastal Management Law. The main components of the law include:

- national policies and basic principles of coastal management;
- definition of the coastal zone management boundary;
- establishment of an ICM plan at the national level;
- elements of coastal management committees at the national and sub-national levels; and
- establishment and implementation of a coastal zone enhancement plan.

The Government of the Republic of Korea is planning to adopt the national ICM plan as a fundamental mechanism for reducing and preventing multiple use conflicts in the coastal area. Through this system, the use of coastal space will be controlled so that the value of coastal resources will be increased. The ICM plan includes division of coastal area into a few management districts, development of a fundamental management policy in each district and a primary coastal enhancement policy at national level. As the management policy also takes "command and control" and "enhancement provisions" as rudimentary management tools, the plan will provide a blueprint to guide stakeholders in coastal utilisation. By managing human activities in each district according to ICM policy, it is expected that coastal use patterns can be rationalised in a more sustainable manner.

The Coastal Zone Enhancement Program is focused on preventing coastal hazards, restoring degraded coastal habitats and ecosystems and establishing coastal recreational facilities.

## LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGES

There have been strong conflicts between stakeholders on the issue of compensation for marine pollution damages since marine pollution caused economic and ecological damages at an unprecedented scale in the late 1980s. In those times large-scale reclamation projects were carried out, and treatment of red-tide events and oil spill incidents became pressing issues. Almost all statutes related to the management of natural resources and the environment contain stipulations for compensation for marine pollution damage. These statutes include the Compensation for Oil Pollution Damages Guarantee Act, the Fisheries Act, the Framework Act on Environmental Policy, the Prevention on Marine Pollution Act, the Public Waters Reclamation Act and the Fishery Resources Protection Act.

The Compensation for Oil Pollution Damage Guarantee Act implements both CLC 1969 and FUND 1971. Said law was enacted to promote the protection of victims and sound development of oil transport by ship by clearly identifying the liability of the owner of a ship and establishing the system guaranteeing compensation for oil pollution damage, in case of damage by oil which escaped or was discharged.

The geographic scope of the Act includes the territorial sea and the EEZ of the Republic of Korea (Art. 3). With respect to liability for oil pollution, the Act adheres to the polluter pays principle (Art. 4), providing that the owner of a ship at the time of an incident shall be liable for any pollution damage.

Loss of tidal mud flats through reclamation projects has been a controversial issue since the late 1980s. Reclamation of land in the coastal zone is carried out through permission under the Public Waters Reclamation Act. The Act aims to advance the public good and furthermore, to contribute to the development of the national economy by means of reclaiming the public waters and efficiently using the reclaimed land. In the past, the Act was not applied. Since the 1990s, however, environmental groups, scientists and even government agencies including the Ministry of Construction and Transportation have encouraged strict enforcement of the Act. Compensation for public waters loss is enforced based on Article 16 of the Act. Said provision states that a person or an enterprise who has obtained the permit for reclamation of the public waters, part of the rights of which belong to somebody else, shall compensate for the loss incurred by the other rights holder or shall install the facilities necessary for the prevention of the potential loss.

In addition to the aforementioned, the Framework Act on Environmental Policy, wholly amended in 1991, and the Prevention of Marine Pollution Act also contribute to the legal regime for damage by environmental pollution. According to the former Act, if any damage is caused by any environmental pollution, the polluter, whether a person or a business, shall indemnify for the damage (Art. 31).

In case of marine pollution caused by a discharge of oil or any hazardous liquid substance, the State can request the compensation for such damage from the polluter (subparagraph 6 of Article 6 of Prevention of Marine Pollution Act).

## REQUIREMENTS FOR EIA AND ACTUAL PRACTICE

EIA in the Republic of Korea has been carried out since February 1982 when related laws and institutional provisions were established and amended (Framework Act on Environmental Policy). In the beginning of the enforcement of EIA, the practice of EIA was limited to projects of government agencies or government investment agencies. The application of EIA, however, was extended to projects of the private sector as stakeholders' and environmental groups' demand for a sound environment intensified. In the 1990s, the establishment of specific law for EIA became needed as environment management was set up as major part of national policy framework. The Government of the Republic of Korea enacted the Environmental Impact Assessment Act to create and maintain a comfortable environment by assessing and reviewing in advance the environmental impact caused by projects falling within the EIA requirement.

The Act is composed of seven major parts including purpose, projects subject to EIA, preparation of EIA, consultation procedure of EIA, management of EIA consultation, supplementary provisions and penal provisions.

The projects subject to the EIA requirement under the Act are as follows (Art. 4):

- urban development;
- formation of industrial location and industrial complexes;
- development of sources of energy;
- construction of harbours;

- construction of roads;
- development of water resources;
- construction of railroads (including urban railroads);
- construction of airports;
- utilisation and development of rivers;
- reclamation works and forest or land clearing works;
- development of tourist complexes;
- installation of gymnastic facilities;
- development of mountainous areas;
- development of designed region;
- installation of waste and excreta disposal facilities; and
- other projects prescribed by the Presidential Decree that have an impact on the environment.

The detailed requirements for each project are provided by the Presidential Decree of the Act (Art. 2).

In making an EIA report, a project executor should follow the guidelines of the Act (Arts. 8 to 15). Draft EIA documentation, pursuant to the Presidential Decree (Art. 3), should include the following matters:

- a description of the proposed activity;

- a selection of the areas subject to the EIA;
- results of the investigation of the present conditions of the environment;
- an analysis and assessment of the alternative plans to the business planning under consideration, in case there are any;
- an analysis of various kinds and degrees of environmental impacts, and the contents of the research on various environmental impact reduction plans; and
- an analysis of unavoidable kinds of environmental impacts (including the damage of environmental pollution to the living environment and property of the residents and plans for reducing the said damage of environmental pollution).

Once the draft assessment report is prepared, there are some procedures to be followed such as public announcement of and open access to the draft (Art. 4 of the Decree) and holding explanatory hearings and public hearings by the project executor (Arts. 6 and 7 of the Decree). Stakeholders of projects subject of an EIA can take an objection through reviewing the EIA document (Art. 20 of the Decree). After some procedures such as review of the EIA document and consultation between related authorities including the MOE, a project executor should implement results of the consultation (Art. 23 of the Act). The Minister of Environment and the head of an approval agency should order a project executor to suspend the project in question if they deem that such a project executor fails to abide by the results of the consultation (Art. 24 of the Act). In addition, the Minister of Environment can require reassessment of the serious environmental impacts of the projects (Art. 26 of the Act).

## THE USE OF MARKET-BASED INSTRUMENTS

The primary measure for managing the environment has changed from the regulatory system in 1970s to the mixed system (regulatory and market-based) in 1990s amongst OECD[1] countries. Application of MBIs was encouraged in 1980s. In the

[1] *Organisation for Economic Cooperation and Development.*

Republic of Korea, the MBIs were first applied in 1983, through the Water Quality Conservation Act. The Government of the Republic of Korea uses four MBIs to protect the natural environment, which include the environmental improvement charges (Environment Improvement Expenses Act, 1991), the discharge due (Art. 19 of Water Quality Conservation Act), the deposit of expenses for collection and disposal of wastes (generally known as the deposit-refund system) (Waste Control Act and Act on the Promotion of Saving and Recycling of Resources, Law No. 4538, 1992) and the expenses for restraint of waste production (Act on the Promotion of Saving and Recycling of Resources).

Environmental improvement charges are imposed on the owners or possessors of buildings and other facilities which directly cause environmental pollution through the discharge of vast amounts of environmental pollutants in the course of circulation and consumption, as well as driving of motor vehicles. This instrument was established to shift the cost equivalent of treatment of the excessively discharged pollutants to the owner of the building or the project executor. The discharge due is imposed in two different ways, the excessive discharge dues and the basic discharge dues (implemented since 1995).

## NATIONAL LEGISLATIVE AND/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

### *Distribution of Mandates and Responsibilities*

The governance structure of the Republic of Korea centres on the President. The President is elected by popular vote and executive powers belong to him. The President nominates the Prime Minister, Ministers, and other executive officers. He presides over cabinet meetings, which consist of the President, the Prime Minister and other ministerial level executive officials.

The primary responsibility for management of the marine environment and activities therein belongs to the MOMAF.

Prior to the creation of the MOMAF, one of the most difficult problems arising within the system of marine pollution control was the fragmentation of administrative authorities into several separate agencies that co-operated only in a limited fashion. The MOE had authority to establish the Comprehensive Marine Environmental Preservation Plan, to establish the water quality standards of the sea waters and to operate the coastal water quality monitoring system. This meant that the MOE had authority to oversee

planning, co-ordination and monitoring. On the other hand, the Marine Police Administration of the Ministry of Home Affairs held enforcement power to undertake surveillance of polluting activities and oil spill cleanup. The Maritime and Port Administration was in charge of prevention of marine pollution from vessels. The Fisheries Administration was in charge of the monitoring of water quality in the Fishery Resources Preservation Zone. Such fragmentation of authority led to inefficiencies in controlling marine pollution problems. The MOE did not exercise enough co-ordinating function.

The creation of the MOMAF on August 1996 merged marine-related authority previously spread among some 10 government agencies. The main functions of MOMAF include: development and integration of marine policy; conservation of the marine environment; ICM; fisheries management; marine science and technology; management of shipping industry and safety of ships; and port development and operations.

***Public Participation***

The participants to the UNCED declared, through Agenda 21, that local governments would play a pivotal role in realising environmentally sound and sustainable development. Recently many states have encouraged participation of local governments in environment management. Coastal countries have been interested in the role of local governments in establishing an ICM system.

The Republic of Korea, which had been under a military junta for a long time, has recognised the importance of the local governments' role in making national policy since 1990s. Such awareness led to the establishment of the local autonomy system in 1995. Elected governors of local governments including provincial governments, however, focused on a development-driven local policy without rational environment conservation instruments. This was due to the political will of incumbent governors who wanted to be re-elected on the next election campaign by implementing their promises to voters.

Even with the potential importance of local governments in managing the environment, there are still some problems to be solved in implementing local government-based environment management systems. The problems include low level of financial self-reliance, lack of authority to carry out their functions in environmental management, low awareness on environmental conservation and lack of expertise on environmental management.

In the Republic of Korea, major conflicts exist between local governments and indigenous citizen groups regarding the prevention of marine pollution and the preservation of the marine environment. Recent change of local government attitude is mainly found in the field of environmental policy.

Many researchers, environment groups and central government officials disregard the role of local governments in environmentally sound resource management and utilisation. Recently however, local governments began to recognise the need for marine environment conservation and rational management of marine resources. For example, the Government of the Republic of Korea carried out the largest reclamation project (430 sq. km) at the southwestern part of Korean Peninsula and completed three out of four of the project components in 1997. In 1998, the local government in the area requested the central government to cancel the project. The request for cancellation is unparalleled in the Republic of Korea, because most local governments and members of the private sector believe that coastal reclamation projects would give more benefit to their local economy than conservation projects of the coastal zone would. This change in the local government's perspective originated from enhancement of public awareness, increase of local environment groups and evolution of environmental awareness of the administration. Indigenous environment groups, i.e. NGOs, have played a substantial role in enhancing public awareness and changing local resource utilisation policy.

Although the coastal population comprises only 33.3% of the national population, NGOs in the coastal area constitute 50% of the national groups. The proportion of NGOs in the coastal area in relation to the population shows the potential importance of NGOs in managing natural resources in a sustainable manner and in enhancing the capacity of local authorities. Many citizens' groups for environmental preservation and protection, however, underwent political suppression by the Government before 1990s; thus it was not easy for them to carry out effective activities for environmental conservation. Since the 1990s, however, they have often participated in the decision-making process on natural resource utilisation and contributed to change in the national environment policy.

## INTERNATIONAL CONVENTIONS AND INITIATIVES

With respect to pollution in the marine environment, the solution to this common problem must be found in global, regional and bilateral frameworks. To this end, the Republic of Korea has been implementing a total of 45 international legal instruments in efforts to prevent, control and reduce marine pollution.

However, as indicated in the following tables, most of the international legal instruments were introduced or adopted only during the past two decades, due to the Republic of Korea's then immature and still developing economic situation. Now, as a contributing member of the global society, the Republic of Korea is participating in international environmental treaties and is also planning to implement more of such treaties as soon as her domestic enforcement mechanisms are in place.

The Republic of Korea ratified UNCLOS in 1996. Moreover the Republic of Korea acceded to the MARPOL 73/78 and its Annexes I and II in 1984 and incorporated most provisions of Annexes III and V of the treaty into its Prevention of Marine Pollution Act. In addition, the Republic of Korea also became a party to the London Convention 1972 in 1994.

In relation to the conventions on oil pollution damage compensation, the Republic of Korea acceded to CLC 1969 and FUND 1971 in 1979 and 1993, respectively, and enacted the 1992 Compensation for Oil Pollution Damage Guarantee Act to implement these two conventions. The Republic of Korea acceded to CLC 1992 and FUND 1992 in 1997, thereby denouncing CLC 1969 and FUND 1971.

To protect the wetlands, the Republic of Korea joined the 1971 Convention on Wetlands of International Importance Especially as Waterfowl Habitat and submitted a bill on the Wetland Protection Act before the Parliament in 1997. Furthermore, the Republic of Korea has been carrying out preparatory work to accede to the OPRC in 1998.

The Republic of Korea acceded to the Basel Convention in 1994.

There is no legally binding regional treaty on the protection of marine environment in Northwest Pacific region. However, in order to protect the regional marine environment, the Republic of Korea has made great strides to formulate a regional legal mechanism with its four neighbouring countries, namely China, Japan and the Russian Federation. As a result, the Action Plan for Managing the Natural Resources and Environment of the Northwest Pacific Region (NOWPAP) was established and has been implemented since 1994.

In 1994, the Republic of Korea also became a signatory to the 1981 Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Region. To strengthen regional co-operation, the Republic of Korea entered

into two bilateral environmental co-operation treaties with China and Japan in 1993. Recognising the serious problem of marine pollution in the Yellow Sea, the Republic of Korea has carried out biennial joint environmental surveys with China since 1997.

The status of the Republic of Korea's participation in global, regional and bilateral environmental treaties is summarised in Tables 1, 2, and 3, respectively.

**Table 1. The Republic of Korea and Global Environmental Treaties (Date: Day/Month/Year)**

| Title | Date of Signa-ture | Date of ratification/ accession (a) | Date of entry into force for the Republic of Korea |
|---|---|---|---|
| International Convention for the Prevention of Pollution of the Sea by Oil, 1954 (as amended in 1962 and in 1969) | - | 29/12/78(a) | 29/12/78 |
| International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto | - | 23/7/84(a) | 23/10/84 |
| 1972 Amendments to the 1960 International Regulations for Preventing Collisions at Sea | - | 29/7/77(a) | 29/7/77 |
| International Convention for the Safety of Life at Sea, London, 1974 | - | 31/12/80(a) | 31/3/81 |
| International Convention on Civil Liability for Oil Pollution Damage, 1969, Brussels | - | 18/12/78(a) | 18/3/79 |
| International Convention on the Establishment of an International Fund for Compensation of Oil Pollution Damage, 1917, Brussels | - | 8/12/92(a) | 8/3/93 |
| Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matters, 1972, London | - | 21/12/93(a) | 19/1/94 |

| | | | |
|---|---|---|---|
| Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, 1963, Moscow, London, Washington | - | 24/7/64(a) | 24/7/64 |
| Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and Ocean Floor and in the Subsoil thereof, 1971, London, Washington, Moscow | - | 25/6/87(a) | 25/6/87 |
| Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques, 1977, Geneva | - | 2/12/86(a) | 2/12/86 |
| Convention on International Trade in Endangered Species of Wild Flora and Fauna, 1973, Washington | - | 7/9/93(a) | 7/10/93 |
| United Nations Convention on the Law of the Sea, 1982, Montego Bay | 14/3/83 | 29/1/96 | 28/2/96 |
| International Convention for the Regulation of Whaling, 1946, Washington | - | 29/12/78(a) | 29/12/78 |
| Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971(as amended in 1982 and in 1987) | - | 28/3/97(a) | 28/7/97 |
| Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972, Paris | - | 14/9/88(a) | 14/12/88 |
| Vienna Convention for the Protection of the Ozone Layer, 1985, Vienna | - | 27/2/92(a) | 27/5/92 |
| Montreal Protocol on Substances that Deplete the Ozone Layer, 1987 | - | 27/2/92(a) | 27/5/92 |

| | | | |
|---|---|---|---|
| London Amendment to Montreal Protocol on Substances that Deplete the Ozone Layer, 1990 | - | 10/12/92(a) | 10/3/93 |
| Copenhagen Amendment to Montreal Protocol on Substances that Deplete the Ozone Layer, 1992 | - | 2/12/94(a) | 2/3/95 |
| Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989, Basel | - | 28/2/94(a) | 29/5/94 |
| International Convention on Salvage, 1989, London | - | 4/9/95(a) | 4/10/95 |
| United Nations Framework Convention on Climate Change, 1992, New York | 13/6/92 | 14/12/93 | 21/3/94 |
| Convention on Biological Diversity, 1992, Rio de Janeiro | - | 3/10/94(a) | 1/1/95 |
| International Plant Protection Convention, 1951, Rome | - | 8/12/53(a) | 8/12/53 |

**Table 2. The Republic of Korea and Regional Instruments**

| Title | Member States | Year of adoption |
|---|---|---|
| Action Plan for Managing the Natural Resources and Environment of the Northwest Pacific Region (NOWPAP) | Republic of Korea, China, Japan, Russian Federation | 1994 |
| Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Region | Republic of Korea (joined in 1994), China, Indonesia, Malaysia, Singapore, Vietnam, Australia, Philippines, Thailand, Brunei, Cambodia | 1981 |

**Table 3. The Republic of Korea and Bilateral Treaties**

| Title | Date of signature | Date of entry into force |
|---|---|---|
| Agreement on Environmental Co-operation between the Government of the Republic of Korea and the Government of Japan | 29/6/1993 | 29/6/1993 |
| Agreement on Environmental Co-operation between the Government of the Republic of Korea and the Government of the People's Republic of China | 28/10/1993 | 27/11/1993 |

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

Among the first five Annexes of MARPOL 73/78, the Republic of Korea has not ratified Annex IV. This is reflected in the legislation. While the annex is not yet in force, this is an area that cannot be ignored for long.

The information on how the Republic of Korea implements the London Convention 1972 is not clear or complete, as the pertinent Ministerial Ordinances and Presidential Decrees are not available. The provisions pertaining to ocean dumping in the Prevention of Marine Pollution Act are very general and do not adequately reflect the requirements under the London Convention 1972. This is a subject of concern that may be put to rest with the appropriate rules and regulations. However, it appears from the provisions of law that the regulation of ocean dumping is not very stringent.

The 1996 Protocol of the London Convention represents a change in the basic idea of the sea vis-à-vis waste disposal: The sea is not to be viewed as a disposal area except for the most harmless of materials. It is up to the country whether or not to adopt this philosophy. Nevertheless, a study of the 1996 Protocol of the London Convention is in order for the Republic of Korea.

The Republic of Korea is unique in the region due to its national ICM law and its success in integrating all jurisdictions pertaining to activities in the marine environment in one Ministry. Nowhere in the region is the regulation of both fishing activities and

navigation the responsibility of one Ministry. However, for the time being the Ministry is still in the process of consolidating its authority. The passage of the ICM law is a huge step in that direction.

Present conditions provide a good opportunity for streamlining the process of ratification and implementation of conventions relating to the marine environment. So far, the country has a relatively good record of ratifying the pollution conventions. The record of implementation is not as clear. The London Convention 1972, MARPOL 73/78 and the GPA could be very good points to start from.

The country should therefore provide a very interesting showcase for such institutional integration, as well as implementation of international conventions through the ICM framework on a national level. Does it really work? This is the question that other countries in the region will be waiting to be answered by the Republic of Korea.

# Singapore

## THE MARINE POLLUTION SITUATION IN SINGAPORE

On October 15, 1997, a Thai-registered very large crude carrier (VLCC), the *Orapin Global*, collided with a Cyprus-flagged oil tanker, the *Evoikos*, in the Singapore Strait, spewing about 28,500 tonnes of heavy marine fuel oil into the sea. It was the worst oil spill in Singapore's history (MPA, 1998c).

Singapore is a tiny country of about 647.5 sq. km, located approximately 137 km above the equator. It is composed of the main island of Singapore and some 63 offshore islands. It has a coastline approximately 150.5 km long (Ng, 1997).

Singapore is the busiest port in the world in terms of shipping tonnage. In 1997, vessel arrivals totalled 130,333 with shipping tonnage of about 808.3 million gross tonnes. There are about 800 ships in port at any one time. Total cargo handled in 1997 amounted to 327.5 million tonnes. Singapore is also the world's top bunkering port. In 1997, bunker sales reached 16.9 million tonnes (MPA, 1996; 1997a).

Aside from being a hub for shipping and port services, Singapore is also the world's third largest oil refining centre. All the major refining companies have operations here, mostly in the offshore islands. The combined refining capacities of Shell, ESSO, Caltex, British Petroleum and Mobil exceed one million barrels a day.

Ever since the first tanker arrived in 1892 and the first oil refinery was built in 1961, Singapore has been under constant threat of oil pollution from ships and land-based sources. The Singapore government has put in place a sophisticated system of regulations to ensure not only the safety of human lives but also the protection of the marine environment. Since 1975, only six big spills have been recorded and the erring parties were sternly penalised with fines aside from being made to pay for the cost of clean-up (Ng, 1997).

Besides oil pollution, garbage and sewage from the city are the most serious threats to the marine environment. In 1997 alone, about three million Singaporeans disposed of 2.8 million tonnes of solid waste. This was a four-fold increase from the volume 20 years ago. Data in 1996 showed that about 45.8% of the refuse originated from residential premises, food centres, markets and commercial establishments. Industrial sources accounted for 53.8% of the total garbage and 0.4% came from other institutions.

Singapore has a well-developed system of solid waste disposal where 68% of the total refuse collected is burned at three incinerator plants. The rest of the garbage ends up at the Lorong Halus Landfill site.

The whole of Singapore is serviced by 2,585 km of sewers. About 439 million cubic metres of sewage are treated by six sewage treatment works. The sewage system is isolated from the drainage system, which prevents flooding in low-lying areas. Singapore strictly prohibits the discharge of sewage and other refuse into the open drains.

The quality of the river and coastal waters of Singapore improved dramatically since the implementation of a massive clean-up drive in 1977. Twenty-one years ago, the Singapore River and the Kallang Basin were considered biologically dead. The waters were filled with debris from boat yards, lighters, fruit and vegetable markets, eating establishments and households located along the banks. Sewage from residential and commercial areas and pig and duck farms added to the filth. Oil spills from ships and lighters were common. The dirty and smelly waters of the Singapore River and Kallang Basin drained through the Marina Channel out to the sea (ENV, 1987).

A Plan of Action was drawn up by the Ministry of the Environment in 1977. Twenty-six thousand families and 2,800 traders were relocated to housing and industrial estates. The operations of lighters were also moved to modern wharves. The pig and duck farms were relocated and eventually phased out. A sewage collection and treatment system was put up. Ten years and $200 million (US$143 million) later, life has returned to the waters. Water quality has improved enough to support water sports, and is safe even for swimming (ENV, 1987).

## NATIONAL MEASURES ON MARINE POLLUTION

### *Marine Pollution Laws in General*

The major marine pollution laws of Singapore are as follows:

1) **Prevention of Pollution of the Sea Act of 1990** (hereafter, PPSA) **and its subsidiary legislation**. The law gives effect to the obligations of Singapore under MARPOL 73/78. It repealed a former law of the same title and took effect in 1 February 1991, the same date the MARPOL Convention came into force in Singapore. In addition to regulating pollution from ships, the law also regulates pollution from land-based sources, which is outside the ambit of MARPOL 73/78.

2) **Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act of 1998** (hereafter, MS98). The law gives effect to CLC 1992 and the FUND 1992. The MS98 provides for a mechanism for claiming damages in cases of oil pollution

coming from oil tankers. The law is an updated version of the old Merchant Shipping (Oil Pollution) Act (MSOPA) that implemented CLC 1969. MS98 came into effect on 18 September 1998.

3) **Petroleum Act of 1908, as amended.** The law regulates the transport of petroleum by ships and the storage of petroleum in ports and other places.

4) **Water Pollution Control and Drainage Act of 1975, as amended**. The law sets the norms on what may and may not be discharged into watercourses. Standards for effluents are provided under the Trade Effluent Regulations.

5) **Environmental Public Health Act of 1987, as amended.** The law regulates the throwing of refuse from residences, food establishments, etc. and also the disposal and treatment of industrial waste.

6) **Hazardous Waste (Control of Export, Import and Transit) Act of 1997**. The law gives effect to the Basel Convention. The law took effect on 16 March 1998.

7) **Merchant Shipping (Safety Convention) Regulations.** This subsidiary legislation regulates the carrying of dangerous goods in ships in accordance with Chapter VII of SOLAS. While the regulations are intended for the safety of those aboard the vessels carrying the dangerous goods, it also acts to prevent marine pollution.

8) **Singapore Port Regulations**. This subsidiary legislation under the Port of Singapore Authority (PSA) Act sets a general prohibition for the discharge of anything into the waters of the port without the PSA's permission. With the PPSA in place, these regulations are seldom invoked except for very minor discharges within the PSA's jurisdiction.

9) **Common law**. Liability at common law may be considered an alternative avenue for claiming damages from pollution incidents. However, this option is less likely be resorted to because of the more rigid provisions on statutory liability.

***Laws on Sea-Based Sources of Marine Pollution***

The phenomenal growth in the transport of oil, chemicals and bulk cargo in the recent history of Singapore made it imperative for regulations to be formulated on the prevention of intentional and accidental discharges of these substances which can pollute the waters. The evolution of marine pollution regulations in Singapore also coincided with international efforts to combat or prevent marine pollution.

In 1971, Singapore enacted its first Prevention of Pollution of the Sea Act, which gave effect to the 1954 International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL), even though Singapore was not a party to the Convention. This law was subsequently repealed and replaced by the present law of the same title, which was enacted in 1990, but took effect in 1991 to coincide with the entry into force in Singapore of the MARPOL 73/78. Singapore has acceded only to Annexes I, II and III of MARPOL (Alam, 1997), but the PPSA also carries provisions relating to Annexes IV and V, as discussed below.[1]

**Prevention of Pollution from Ships**

The law that addresses pollution from ships is the PPSA. Part III of the PPSA contains the main MARPOL provisions that deal with sea-based pollution sources. Section 6 penalises with a maximum $10,000 fine (US$7,143) and/or imprisonment not exceeding two years, the disposal or discharge of any refuse, garbage, waste matter, trade effluent, plastics or marine pollutant in packaged form into Singapore waters. Liability attaches not only to the master of the ship but also to the owner and agent.

Section 6 gives effect to Annexes III and V of MARPOL even though Singapore has not acceded to Annex V.[2] "Marine pollutant" is defined in Section 2 as those identified by the International Maritime and Dangerous Goods Code published by the IMO; "garbage" means all kinds of victual, domestic and operational waste excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously and periodically except sewage originating from ships; "plastics" includes, but is not limited to, synthetic ropes, synthetic fishing nets and plastic garbage bags.

Section 7 prohibits the discharge of oil or any oily mixture from any ship into Singapore waters or a Singapore ship into any part of the sea. The master, owner and agent who violate this provision may each be liable for a fine of $500 to $500,000 (US$357 to US$357,142) or to imprisonment not exceeding two years or both. "Oil" is defined under the law as petroleum in any form including crude oil, fuel oil, sludge, oil refuse, and refined products (other than petrochemicals which are prescribed by regulations as being subject to the provisions of Annex II of the Convention) and, without limiting the generality to the foregoing, includes the substances prescribed by regulations as being listed in Appendix I of Annex I of the Convention; "oily residues" means any waste material consisting of, or arising, from oil or an oily mixture; "oily mixture" is a mixture with an oil content of 15 parts or more in 1,000,000 parts of the mixture.

---

[1] *Singapore acceded to Annex V of MARPOL 73/78 on 27 May 1999.*

[2] *Singapore acceded to Annex V of MARPOL 73/78 on 27 May 1999.*

The intention of Parliament is that liability under Section 7 is strict, despite the statutory defences also provided therein (see below). This is apparent in the ruling of the High Court of Singapore in the case of *Jupiter Shipping v. Public Prosecutor*, the first ever prosecution under the PPSA. In that case, the ship, *Hudson Bay*, was docked at the Singapore Harbour. As it was being supplied by fuel oil from a bunker barge, the oil escaped because the rate of transfer was faster than that requested by the ship. The escaped oil caused a 1,500-sq. metre oil slick. The defence of the appellants did not fall under any of the exceptions. They were fined $10,000 (US$7,143) for the violation (Lim, 1994; Tan, 1996).

Section 10 deals with the discharge of noxious liquid substances, or of a mixture containing a noxious liquid substance carried as cargo or part of cargo in bulk from any ship into Singapore waters or a Singapore ship into any part of the sea. Violation of this section carries a fine not exceeding $10,000 (US$7,143) and/or imprisonment not exceeding two years each for the master, owner and agent. "Noxious liquid substances" are referred to in the PPSA (Noxious Liquid Substances in Bulk) Regulations as those subject to the provisions of Annex II of the MARPOL Convention.

Sections 6, 7 and 10 also contain exemptions, which follow the scheme in the Convention. Exemptions from liability under Section 6 reflect those under Regulation 6 of Annex V of MARPOL. These include:

> "(2) x x x the disposal or discharge of refuse, garbage, waste matter, trade effluent, plastics or marine pollutant in packaged form from a ship--
>
> (a) which is necessary for the purpose of securing the safety of a ship or saving life at sea; or
>
> (b) if the refuse, garbage, waste matter, trade effluent, plastics or marine pollutant in packaged form, as the case may be, escaped from the ship in consequence of damage, other than intentional damage, to the ship or its equipment, and all reasonable precautions were taken after the occurrence of the damage or the discovery of the discharge for the purpose of preventing or minimising the escape of the refuse, garbage, waste matter, trade effluent, plastics or marine pollutant in packaged form, as the case may be.
>
> x x x where a synthetic fishing net, or synthetic material used in the repair of such a net, on a ship is lost at sea, and all reasonable precautions were taken to prevent the loss.
>
> x x x

(4) For the purposes of subsection (2), damage to a ship or to its equipment shall be taken to be intentional damage, if the damage arose in circumstances in which the master, the owner or the agent of the ship--

(a) acted with intent to cause the damage; or

(b) acted recklessly and with knowledge that damage would probably result."

Exemptions under Section 7 follow Regulation 11 of Annex I, including:

"(2) x x x the discharge of oil or an oily mixture from a ship--

(a) which is necessary for the purpose of securing the safety of a ship or saving life at sea;

(b) if the oil or oily mixture, as the case may be, escaped from the ship in consequence of damage, other than intentional damage, to the ship or its equipment, and all reasonable precautions were taken after the occurrence of the damage or the discovery of the discharge for the purpose of preventing or minimising the escape of the oil or oily mixture, as the case may be; or

(c) in the case of an oily mixture, if the discharge was for the purpose of combating specific pollution incidents in order to minimise the damage from pollution and was approved by the appointed authority and, where the discharge occurred in the jurisdiction of the government of a country other than Singapore, by that government.

(3) For the purpose of subsection (2), damage to a ship or to its equipment shall be taken to be intentional damage, if the damage arose in circumstances in which the master, the owner or the agent of the ship--

(a) acted with intent to cause the damage; or

(b) acted recklessly and with knowledge that damage would probably result."

The exceptions under Section 10 on noxious substances are similar to the provisions cited above and follow Regulation 6, Annex II of MARPOL.

In addition to the PPSA, several other laws regulate pollution from ships. Under the Singapore Port Regulations (a subsidiary legislation under the Port of Singapore Authority Act), no person may throw, discharge, deposit or cause to be thrown into the waters of the port any ashes, solid ballast, sludge or any other matter without the permission of the PSA (Regulation 104). Violators are penalised with a $5,000 fine (US$3,571) and an additional $1,000 (US$714) for every day the violation continues after conviction. The penalty is small compared to the fines under the PPSA. For this reason, the Port Regulations are less likely invoked except for minor offences. The more comprehensive regulations and higher fines in the PPSA pose a better deterrent against major violations (Lim, 1994).

**Preventive Measures Against Pollution of the Sea**

Part IV of the PPSA provides for regulatory mechanisms to prevent the discharge of pollutants into the sea such as the requirement of setting up and using reception facilities and the keeping of oil and cargo record books. Section 11 of the PPSA gives authority to the PSA[3] to provide for reception facilities for ships using the port or any terminal in Singapore. These facilities shall receive and process the residues containing oil or noxious liquid substances subject to appropriate fees. Any ship that comes to Singapore may make use of the facilities as long as its main purpose is not to simply discharge its residues. The power of the PSA includes the power to require the use of the facilities. The Minister of Communications may direct the PSA or a terminal operator (for terminals not under the PSA) to ensure that the port or terminal has adequate reception facilities to comply with MARPOL regulations, particularly Regulation 12 of Annex I and Regulation 7 of Annex II. Before issuing such directions, the Minister consults with the organisation representing the ships registered in Singapore, the PSA and other terminal operators.

The Reception Facilities Regulations supplement Section 11 of the PPSA. They apply to the PSA or other terminal operator whose port or terminal is used by oil tankers, chemical tankers or other ships that carry residues or mixtures containing oil or noxious liquid substances, including ships that undergo repair or are being broken up. They require the master of the ship to first notify the Port Master and make arrangements with the PSA or other providers of reception facilities on the quantity and content of substances, before proceeding to the terminal to discharge. The Port Master may deny entry of any ship that fails to comply with the procedures. Any person who fails to comply with the requirements of the Regulations, or any master who knowingly provides or recklessly provides false information on the quantity and content of the residues to be discharged is liable to a fine not exceeding $10,000 (US$7,142) and/or imprisonment exceeding two years. The same

---

[3] *In 1996, the Maritime and Port Authority of Singapore (MPA) Act created the MPA, which absorbed the regulatory powers of the PSA. References in the PPSA to the PSA should be read as referring to the MPA. See the section of this paper on the Regulatory Structure.*

penalties are imposed on the master or reception facility operator who transfers or receives the residues or mixtures without prior permission from the Port Master.

Section 12 of the PPSA requires the keeping of oil record books, the particulars of which may be prescribed by the Minister, but generally following those found in Regulation 20 of Annex I to MARPOL. An additional record is required for transfers of oil to and from ships while in Singapore waters. Such record is to be kept by the master unless the ship is a barge. In the latter case, the record shall be kept by the supplier who transfers oil to the barge, or the person to whom the oil from the barge is delivered. Details of the requirements may be found in the Oil Regulations promulgated under the PPSA. Section 13 similarly requires the keeping of cargo record books for ships that carry noxious liquid substances in bulk. The particulars of the record generally follow that of Regulation 9 of Annex II to MARPOL, as detailed in the Noxious Liquid Substances Regulations under the PPSA.

If a ship fails to carry the required oil or cargo record books, the owner, agent or master of the ship is liable for a fine not exceeding $5,000 (US$3,571). The same amount of fine is imposed on those who fail to comply with the Regulations. Any person who makes an entry in the oil or cargo record books that he knows to be false or misleading in any material particular is liable for a fine not exceeding $10,000 (US$7,143) and/or imprisonment of not more than one year.

Aside from the keeping of records, the PPSA Regulations also require documents that certify that the ship complies with relevant MARPOL regulations. In Singapore, the Director of Marine (now MPA) issues either a Singapore Oil Pollution Prevention Certificate (SOPP) or a Singapore Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (SNLS) after thorough inspection as provided in Section 22 of the PPSA and Article 6 (2) of MARPOL 73/78.

The success of Singapore in preventing or minimising marine pollution stems in large part from its effective reporting system. Section 15 of the PPSA requires that if any actual or probable discharge of any harmful substance occurs in prescribed circumstances from a Singapore ship into any part of the sea or from any ship into Singapore waters, the master of the ship shall without delay report the occurrence. Liability may be negated if the master proves that he was unable to report. Even so, the owner, charterer, manager and operator of the ship or an agent of the owner, charterer, manager or operator of the ship shall without delay report the occurrence should the master of the ship be unable to comply or if the discharge occurs in circumstances in which the ship is abandoned. Failure of the concerned persons to promptly report the occurrence of the discharge shall make them liable for a fine not exceeding $5,000 (US$3,571).

Two other laws ensure that the transport of petroleum and other potentially hazardous substances does not result in the pollution of the sea. The Petroleum Act directly deals with the safe handling of petroleum products and is only indirectly related to marine pollution.

The law strictly regulates the importation, exportation, transport and storage of petroleum. Petroleum products may only be imported and landed in designated areas. Ships carrying petroleum may only dock in designated areas and load/unload within specified hours (daytime). Permits from the Port Master are required for the loading and unloading of petroleum. Fines for violation of the provisions of the Act range from $500 to $2,000 (US$357 to US$1,429). Considering the comprehensive coverage of and the larger fines in the PPSA, any discharge of petroleum products into the waters would likely be prosecuted under the PPSA.

The Hazardous Waste (Control of Export, Import and Transit) Act of 1997 similarly indirectly addresses marine pollution by regulating the movement of vessels carrying hazardous wastes. Under Section 30, the Director of Hazardous Waste may require the master or the person in command or in charge, or who appears to be in command or in charge, of the vessel to ensure that the vessel does not remain within, or does not come within, as the case requires, the jurisdiction of Singapore, ensure that the vessel is brought to a specified place to which it is safe and practicable to bring the vessel and that it remains there until permitted to leave and arrange the unloading of goods from the vessel upon permission of the Director. Violation of this section shall make the offender liable to a fine not exceeding $10,000 (about US$7,143) and/or imprisonment of not more than 12 months.

***Laws on Land-Based Sources of Marine Pollution***

Singapore hosts some of the world's top oil refiners. Because of the great volume of oil being handled in these refineries, there is a great possibility for oil and other pollutants to come from land. The PPSA does not solely give effect to MARPOL 73/78 but also contains regulations on land-based sources of pollution which are similar to the provisions on sea-based sources.

Section 3 of the PPSA prohibits the discharge of oil or oily mixture into Singapore waters from any place on land, or from any apparatus used for transferring oil from or to any ship (whether to or from a place on land or to or from another ship). The violator, who may be the occupier of the land, another person who caused the discharge who was in the place without permission of the occupier, or the person in charge of the apparatus, is liable for a fine of between $500 to $500,000 (US$357 to US $357,142) and/or imprisonment not exceeding two years.

Liability may be extinguished under the special defences in Section 4, which include: 1) that the discharge of oil or oily mixture was not due to any want of reasonable care, and that as soon as practicable, all reasonable steps were taken to stop or reduce the discharge; 2) the discharge was caused by the act of a person who was in the place without the express or implied permission of the occupier; 3) the discharge of oil was contained in an effluent produced by operations for the refining of oil, and that it was not reasonably practicable to dispose of the effluent otherwise than by discharging it into Singapore waters, and that all

reasonably practicable steps had been taken to eliminate the oil from the effluent. For the third defence to prosper, all the requirements enumerated in the law must have been met.

Under Section 5 of the PPSA, any person who puts, throws, casts or deposits into Singapore waters, or causes to be put, thrown, cast or deposited thereunto, any oil, oily mixture, refuse, garbage, plastic waste matter, carcass, noxious liquid substances, marine pollutant in packaged form or trade effluent shall be liable to a fine not exceeding $10,000 (US$7,143) and/or imprisonment not exceeding two years. This provision practically covers all instances of pollution.

Another major legislation that seeks to control pollution from land is the Water Pollution Control and Drainage Act. Under this law, the Director of Water Pollution Control and Drainage is mandated to develop and maintain a system of drainage and a separate system for sewage collection and treatment. The Director may allow the sewer to be emptied into the sea or other fit place. Under Section 20, the owner of any premises shall treat any trade effluent discharged therefrom in the prescribed manner before the effluent is discharged into the sewer or drain. "Trade effluent" includes any liquid, either with or without particles of matter in suspension therein, which is wholly or in part produced in the course of, or is the waste or refuse of, any trade, business, and manufacture or of any building construction. Under Section 31, no trade effluent may be discharged from any premises into the public sewer without the consent of the Director. A violation of this prohibition is punishable with a fine of not exceeding $5,000 (US$3,571). Any person who causes any trade effluent to enter or pass into any public sewage system (whether wilfully or by accident) is required to inform the Director immediately of such occurrence. Failure to report is punishable with a fine not exceeding $500 (US$357). Liability is excused if the amount of trade effluent discharge is not substantial as determined by the Director. The Trade Effluent Regulations provide the details on the requirements and procedures for treatment and discharge of trade effluents.

It is worth noting that the law also prohibits the discharge of toxic substances into any inland water, which is likely to give rise to an environmental hazard (Sec. 15). Toxic substances include trade effluent, chemical, oil or any other substance that is noxious, injurious or polluting. An environmental hazard arises if the substance is placed or discharged in such a manner or in such quantity as to subject persons or animals to a material risk of death, injury or impairment of health or as to threaten to pollute any inland water. Violators are punished with a fine not exceeding $10,000 (US$7,143) and/or imprisonment of six months for the first offence. A second offence is penalised with a fine not exceeding $20,000 (US$14,286) and/or imprisonment for a period between one month up to one year. After conviction for the third time, the Director may order an indefinite cessation of the process or work that caused the pollution and require the violator to pay all costs for measures imposed to ensure compliance.

The Environment and Public Health Act provides the main regulations for the collection, treatment and disposal of all types of refuse from homes and commercial

establishments and includes the regulations for the disposal of industrial wastes. Section 18 contains the main prohibitions in respect of uncleanliness in public places. No person may drop, deposit or throw any refuse or any other matter or thing in any channel, drain, lake, reservoir, river, stream or watercourse or upon the bank of any of the same or in any part of the sea abutting on the foreshore. A first violation is fined $1,000 (US$714), while a second or subsequent violation is fined $2,000 (US$1,429). The law provides the framework as well as the procedures for the collection and disposal of solid wastes.

**Legal Regime of Liabilities for Marine Pollution Damages**

The PPSA and MS98 are the major laws that provide for mechanisms to recover costs and damages incurred in marine pollution cases. Under Part V of the PPSA, the PSA (now MPA) has the power to recover the cost of clean up in case of pollution incidents. The MS98 on the other hand applies to oil pollution cases involving oil tankers.

Section 17 of the PPSA deals with refuse, garbage, waste matter, plastics, marine pollutants in packaged form or trade effluent discharged from ships into Singapore waters or drifting into Singapore waters. The owner of the ship shall be liable for any measure reasonably taken for the purpose of removing such discharge or for preventing or reducing any damage caused by contamination resulting from the discharge. When the pollution comes from two or more ships, the owner of each of them incurs the liability, depending on how much each one contributed to the damage. Liability becomes joint and several among the owners of the ships if the damage or cost of which each of the owners would be liable cannot be separated from that for which the other or others would be liable.

Section 18 deals with discharge of oil, oily mixtures or noxious liquid substances from ships. Similar to Section 17, the owner shall be liable for the costs of any measure reasonably taken for clean up. Under this provision, the measures reasonably taken include compensation for any damage caused by contamination resulting from the discharge, actions taken to remove the oil, mixture or substance from the water and foreshore or the taking of such other actions as may be necessary to minimise or mitigate damage to the public health or welfare and aquatic resources, including, but not limited to fish, shellfish, wildlife, and public and private property, foreshore and beaches (Sec. 18(3)).

Discharges of oil, oily mixture or noxious liquid substances from any place on land or from any apparatus used for transferring the oil, mixture or substances from or to any ship is regulated under Section 19. The person in charge of the apparatus or the occupier of that place, as the case may be, shall be liable to pay for the costs of any reasonable measure taken in removing or eliminating the oil, mixture or substance.

Finally, Section 20, a catch-all provision, makes any person liable to pay the costs of clean-up for putting, throwing, casting or depositing or causing to be put, thrown, cast or

deposited in Singapore waters any oil, oily mixture, refuse, garbage, plastics, waste matter, carcass, marine pollutant in package form, noxious liquid substances or trade effluent. The cost due from and payable by the person under Sections 17 to 20 may be recovered as a debt due to the PSA (Sec. 21).

The other major law, the MS98, mainly implements the provisions of CLC 1992 as well as FUND 1992.[4] The law took effect on 18 September 1998, the same day these two protocols entered into force in Singapore.

MS98 provides for strict liability for damage caused by oil escaping from an oil tanker. Section 3 makes a ship owner liable for oil pollution damage in Singapore resulting from the discharge or escape of oil from a ship carrying oil in bulk as cargo. Specifically, the owner is liable: a) for any damage caused outside the ship in the territory of Singapore by contamination resulting from the discharge or escape; b) for the cost of any measures reasonably taken after the discharge or escape for the purpose of preventing or reducing such damage so caused in the territory of Singapore by contamination resulting from the discharge or escape; c) for any damage caused in the territory of Singapore by any measures so taken. However, there are three instances where the ship owner is not held liable. These include, when the discharge or escape: a) resulted from an act of war, hostilities, civil war, insurrection or an exceptional, inevitable and irresistible natural phenomenon; b) was due wholly to anything done or left undone by another person, not being an employee or agent of the owner, with intent to do damage; or c) was due wholly to the negligence or wrongful act of a government or other authority in exercising its function of maintaining lights or navigational aids for the maintenance of which it was responsible (Sec. 4). Note that the last two exceptions do not absolve the ship owner from liability unless the incident was "due wholly" from the act or negligence of a third party. Aside from damage from incidences of actual discharge or escape of oil, the law also makes the ship owner liable for the cost of reasonable preventive measures (and any damage caused by such measures) where, as a result of any occurrence, there arises a grave and imminent threat of damage by contamination that might result from a discharge or escape of oil from the ship. In recognition of CLC 1992, MS98 makes a ship owner also liable if the damage is done to another Liability Convention country.

Even though the owner of the tanker that caused the discharge or escape of oil is liable for all the damages in Section 3, he may still limit his liability under Section 6 as long as the discharge or escape did not result from his act or omission, committed with intent to cause such damage or cost, or recklessly and in the knowledge that such damage or cost

---

[4] *Singapore recently became a party to CLC 1992 and FUND 1992. For CLC 1992, the instrument of accession was deposited on 18 September 1997, and will come into force a year later. For FUND 1992, the instrument of accession was deposited on 31 December 1997. Thereafter, the Convention will come into force for Singapore on 31 December 1998.*

would probably result. The limits to liability are as follows: a) for ships not exceeding 5000 tonnes,[5] three million special drawing rights (SDRs); b) for ships exceeding 5000 tonnes, three million SDRs, with an additional 420 SDRs for each ton of its tonnage in excess of 5000 tonnes up to a maximum of 59.7 million SDRs. These limitations may be amended by the MPA, with the approval of the Minister, to reflect future changes in the CLC.

To avail of this limitation on liability, the ship owner has to apply to the Court (Section 7). The Court may direct payment in accordance with the amounts in Section 6, to be paid to the Court or to the Authority in Singapore dollars. The conversion from SDRs to Singapore dollars is also provided in Section 7.

The payments to be made under these provisions can be very large. To ensure that the owner does pay for the costs and damages, the law, in Section 13, requires tankers carrying over 2000 tonnes of oil to contract for insurance against such risks. The insurer may be sued directly by the claimant (Sec. 15). In such case, however, the insurer is entitled to the limitations and defences of the ship owner, as well as the defence that the discharge or escape, or the threat of contamination, as the case may be, was due to the wilful misconduct of the owner himself. Tankers that do not have valid insurance may be refused entry to or be detained in port by the PSA. The master and owner of the ship also commit an offence for not securing the required insurance.

CLC 1992 aims to draw all liability to the ship owner because he is the one insured. Furthermore, if CLC 1992 applies, the ship owner cannot be sued under common law. This is echoed in MS98 under Section 5 where the ship owner, if he is liable under Section 3, can be held liable under that section only and not otherwise. In addition, no employee or agent of the owner, nor any person performing salvage or clean-up operations shall be held liable for any damage or costs.

At first glance, both the PPSA and the MS98 seem to overlap in the case of recovery of costs and damages arising from oil pollution from tankers. However, the PPSA, in Section 18 (4), provides that it shall not apply in relation to any discharge of oil or oily mixture where Section 3 of MSOPA (now MS98) applies.

In line with the recent accession of Singapore to the FUND 1992, Part III of MS98, which concerns the implementation of the FUND 1992, begins with the recognition of the International Oil Pollution Compensation (IOPC) Fund created under the Convention as a juridical person that may sue or be sued in its own name.

---

[5] *Gross tonnage is calculated in accord with the International Convention on Tonnage Measurement of Ships 1969.*

The law requires importers/recipients of oil cargo to contribute to the Fund where such oil was carried by sea to ports or installations in Singapore, except where the voyage was only within its territorial sea. The amount of the contribution is determined by the Director of the Fund (under Article 12 of the Convention). Contributions are due only from companies that import or receive more than 150,000 tonnes of crude oil or fuel oil in a year. The MPA may require information from potential contributor oil companies to be submitted to the Fund to serve as basis for proper assessment. It may also require security for the obligations to the Fund. Failure to give security or information is punishable with a fine of $20,000 (US$14,286) and/or imprisonment not exceeding 12 months.

The Fund shall be used to compensate for pollution damages only after failure to obtain full compensation from the ship owner under Section 3:

"(a) because the discharge or escape, or the relevant threat of contamination, by reason of which the damage was caused –

i) resulted from an exceptional, inevitable and irresistible natural phenomenon;

ii) was due wholly to anything done or left undone by another person, not being an employee or agent of the owner, with intent to do damage; or

iii) was due wholly to the negligence or wrongful act of a government or other authority in exercising its function in maintaining lights or other navigational aids for the maintenance of which it was responsible;

(b) because the owner or insurer liable for the damage cannot meet the obligations in full; or

(c) because the damage exceeds the liability under Section 3 as limited by the Section 6 or by Section 136 of the Merchant Shipping Act, as the case may be." (Sec. 27)

The Fund can resist liability by proving that the pollution damage resulted from an act of war, hostilities, civil war or insurrection, or the oil was discharged by a non-commercial ship operated by a State. The Fund is also not liable if the claimant cannot identify the ship that caused the damage. Liability of the Fund may be reduced if the damage resulted wholly or partly from the intentional or negligent act or omission of the claimant. Even as the Fund is charged to pay compensation, such compensation is not unlimited. Under Section 28, the aggregate amount of compensation from both Section 3 and the Fund in any one incident shall not exceed 135 million SDRs. In cases of pollution damage resulting from an exceptional, inevitable and irresistible natural phenomenon, the limit is also 135 million

SDRs. These limits are increased to 200 million SDRs when there are three Fund Convention countries involved whose combined quantity of oil imported or received is not less than 600 million tonnes during the preceding calendar year. The law bars the filing of claims against the Fund more than three years after the claim arose or six years after the original incident.

The Fund is also liable to pay compensation for pollution damage in another Fund country if the incident has caused pollution damage in both Singapore and that country, and proceedings under the Liability Convention for that damage is brought in a country which is not a Fund Convention country or in Singapore (Sec. 27 (2)).

Under common law, a claimant who suffered from pollution damage has to sue on the basis of negligence. In a case decided before the PPSA was enacted, *Esso Petroleum Co. Ltd. v. Southport Corporation*, a tanker ran aground after a steering failure. To prevent the ship from breaking, the master ordered the discharge of 400 tonnes of its oil cargo, which drifted to shore. The local authority sued to recover clean-up costs. The action for damages was dismissed because no negligence was proved. This case would have been decided differently today because of the statutory liability provisions in the MSOPA (now MS98). However, if the cargo had not been oil (e.g. noxious chemicals) the MSOPA (MS98) would not apply (Lim, 1994).

## ENVIRONMENTAL IMPACT ASSESSMENT: REQUIREMENTS AND ACTUAL PRACTICE

Singapore does not have a law that specifically deals with EIA. However, an EIA may be required for certain projects that have sufficient potential for pollution that might affect public health. The Ministry of Environment (ENV) decides if a proposed project should conduct an EIA. The EIA has to cover the following (Chia, 1997): 1) measures to reduce and control both air emissions and trade effluent discharge and to manage toxic waste effectively; and 2) hazard analysis to establish a safety zone to prevent knock-on effects and to protect the public from hazards arising from toxic-gas dispersal, fire and explosion.

The EIA process is integral to the planning and decision-making process. In Singapore, EIA is done as part of the land-use planning process as well as at the level of individual projects. Singapore has a well-established system of land-use control as envisioned in the Statutory Master Land-Use Plan, which was begun in the 1950s when Singapore was still under British rule. This Land-Use Plan is continually being updated every five years. In addition, the Ministry of National Development adopted in 1971 a Long-Range Comprehensive Concept Plan (Concept Plan) to guide all future development and ensure sufficient residential land for future population growth and zones for industrial, commercial and other uses. The Concept Plan has also undergone recent revisions and presently puts great emphasis on environmental conservation. The present planning strategy is to develop 55 detailed development guide plans (DGPs) which will eventually replace the Master Plan (Briffett and Lee, 1992).

The various national and local plans serve as guides for any development project proposed by both government and the public sector. The proponents of a typical development project would apply to the Urban Redevelopment Authority (URA) for planning approval. The URA consults with the ENV on the environmental aspects of the proposed project. The ENV or the Master Plan Committee determines whether an EIA is required. Whether or not an EIA is eventually required, the ENV then checks the environmental impact of the project and its compatibility with the land-use plans. The ENV then imposes pollution control requirements that will be incorporated in the design.

After the URA grants planning approval, the proponent goes to the Building Control Division (BCD) of the Public Works Department for building plan approval. The proponent also submits to the Central Building Plan Unit (CBPU) of the ENV the technical plans for environmental health measures, drainage, sewage and pollution control facilities. The BCD will only grant approval of the building plan if the CBPU is satisfied with the technical plans for environmental management. After the construction, the ENV inspects the premises for compliance with the plans. The ENV then informs the BCD of such compliance, clearing the way for the issuance by the BCD of a Temporary Occupation Permit and Certificate of Statutory Completion. After the grant of the permit, the proponent can now start operations.

An EIA has been required for the construction of the Ayer Merbau Island petrochemical complex, a gasworks plant in Queenstown, and for refuse incineration plants (Tan, 1996). In cases where an overseas developer wishes to store large quantities of hazardous substances that would have an off-plot impact, the proponent is required to engage a third-party consultant to conduct the EIA to support the application to locate the plant in Singapore (Chan, as cited by Chia, 1997).

In general, several layers of controls including regulations at the physical planning stage, provisions of environmental infrastructure, comprehensive environmental legislation and a responsive industrial community, eliminate the need for a mandatory EIA procedure for all cases which would otherwise delay the implementation of many industrial projects (Chia, 1997).

## REQUIREMENTS FOR USE OF MARKET-BASED INSTRUMENTS

As seen in the previous sections, Singapore has a well-established legal system that prohibits indiscriminate pollution and punishes violators. However, Singapore has also adopted a strategy to prevent or reduce pollution that is anchored on the "polluter-pays" principle. In cases where pollution is "allowed" within limits, the person who causes or produces the pollution pays for its treatment.

Under the Water Pollution Control and Drainage Act, the Trade Effluents Regulation (1976) has been promulgated, setting allowable limits of discharges of effluent into the sewerage system. Through a system of permits issued by the Director of Water Pollution and Drainage, factories or other pollution sources are allowed to discharge their industrial waste to the public sewers after giving details on the type and toxicity of the wastes, particulars of the processes generating such wastes and the pre-treatment processes used, if any. The firms are assessed corresponding fees depending on the amounts and nature of the effluents. As of 1993, some 310 industries have opted to discharge their wastes into the public sewers and pay the fees. Tariffs have been increased since 1977 to reflect higher treatment costs. In 1994 alone, total effluent charges amounted to $4,215,000 (US$3,010,714) (Tan, 1996).

Singapore also charges fees for the use of reception facilities to treat oily water from ships. Under the PPSA Reception Facilities Regulation, the PSA (now MPA) collects as much as $300 (US$214) per tonne for the discharge of sludge and other oily residues.

Even as these fee systems have market implications, they are considered as conventional regulatory mechanisms for maintaining vital services and not primarily as MBIs.

## NATIONAL LEGISLATIVE/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

Singapore has the advantage of being small in size and population. Administrative structures are fairly simple and single-tiered.

There are two main government offices that play major roles in the prevention and control of marine pollution. The MPA of Singapore has general jurisdiction over marine waters, ports and ship-based sources of pollution. The ENV has general jurisdiction over land-based sources of pollution as well as all other environmental issues.

The MPA was established in 1996 through a law specifically creating it as a statutory board under the Ministry of Communications. The MPA assumed the functions of the defunct Marine Department, the National Maritime Board and certain functions of the PSA. The PSA had previously been streamlined to act as an entity primarily tasked to operate port facilities. The regulatory functions of the former PSA have been transferred to the MPA.

The MPA administers the enforcement and implementation of a comprehensive set of legislation covering all aspects of the environment such as prevention, preparedness and response to marine pollution emergencies and compensation for oil pollution damage resulting from spills of persistent oil (Alam, 1997). Under the PPSA and MS98 statutes, the duties and functions of the Director of Marine and the PSA are now properly the duties and functions of the MPA.

The MPA has a corporate structure and is headed by a chairman and a management board of 10 members coming from government and the private sector. The present board includes private sector representatives from the Singapore Organization of Seamen, Singapore Shipping Association, Jardine Fleming Securities and Sembawang Shipyards Pte. Ltd. (MPA, 1996).

The MPA has eight divisions. The Policy Division develops strategic plans and policies to support MPA's mission of safeguarding Singapore's maritime interests and to promote Singapore as a world class port. It is responsible for the economic regulation of the port industry as well as coordination with international organisations such as the IMO, the Asia Pacific Economic Conference (APEC) and the ASEAN. The Port Division is responsible for controlling vessel traffic movements, ensuring navigational safety, protecting the marine environment and safeguarding usage of port waters. The Shipping Division is responsible for further developing and maintaining Singapore's position as an international maritime centre. It promotes safety of shipping and prevention of pollution from ships. The Training Division conducts courses for mercantile marine and shipping/port industry. Finally, the Technology, Corporate Service, Corporate Communications and Audit Departments provide administrative support to the other divisions.

The MPA is the sole regulator of port and marine services. Its current activities include the development of a new port master plan, administering the Singapore Registry of Ships, promoting the bunkering industry, strengthening financial mechanisms such as marine insurance, ship brokering and ship financing, as well as developing consultancy, maritime administration and conciliation mechanisms. Sea rubbish collection is also a major function of the MPA. It contracted with the PSA to collect garbage and flotsam.

The ENV, on the other hand, is a regular government agency. It generally implements land-based environmental regulations, including the Environmental Public Health Act, the Water Pollution Control and Drainage Act and the new Hazardous Waste (Control of Export, Import and Transit) Act. The ENV has under it the Pollution Control Department and the Environmental Health Division. The Ministry has since developed and implemented comprehensive environmental protection and public health programmes with a high standard of public health. These include putting in place the environmental infrastructure such as drains, sewers, sewage treatment works, refuse incineration plants and transfer stations, as well as the legal framework and control measures to protect the environment. An important function of the ENV is the regulation, inspection and monitoring of new development projects to ensure that these projects incorporate processes or facilities to prevent or minimise pollution. The ENV also requires and reviews EIAs for major development projects that have the potential to significantly affect public health. An International Environment and Policy Department was created in 1991 to foster bilateral, regional and international cooperation. The ENV has represented Singapore in negotiations on the Basel Convention, among others (Ng, 1997).

Other government agencies are also involved in environmental management, mainly as part of the overall environmental planning arrangement. Among these are the Urban Redevelopment Authority and Public Works Department of the Ministry of National Development, the Economic Development Board and Jurong Town Corporation under the Ministry of Trade and Industry, the Department of Scientific Services under the Ministry of Health and the Industrial Health Division of the Ministry of Manpower.

The patrolling and enforcement of pollution regulations in the seas is jointly being conducted by MPA enforcement inspectors, the Singapore Police Coast Guard and the Singapore Navy. Under the PPSA Reporting Requirements Regulations, all ships are mandated to report pollution incidences to the MPA or the Port Master.

## INTERNATIONAL CONVENTIONS AND INITIATIVES

Singapore is a major player in the field of international shipping and trade. It has participated actively in the work of the IMO, its main Committees, Working Groups and Correspondence Groups. It was re-elected for the third time since 1993 as a member of the IMO Council during the 20th Regular Session held from 17-28 November 1997 in London (MPA, 1998c).

For maritime-related international negotiations, the MPA represents the government of Singapore. For other environmental issues, it is the ENV that represents the government.

### *Specific Instruments Ratified and Extent of Implementation*

Singapore is a party to the following international agreements:

1) **UNCLOS.** Singapore became a party in 1994. The relevant provisions are those under Part III on the Straits used for International Navigation and Part XII on the Protection and Preservation of the Marine Environment. Singapore has not passed legislation to implement the provisions of the UNCLOS. This is likely due to the fact the UNCLOS (especially Part XII) recognises other existing conventions on the protection of the marine environment (MARPOL 73/78, etc., though not referred to by name). Since Singapore is a party to most of these conventions and it has already implemented them locally, there is little need to pass legislation that specifically implements UNCLOS.

2) **MARPOL 73/78.** Singapore acceded to Annexes I and II on 1 November 1990. The Convention came into force in Singapore on 1 February 1991. It acceded to Annex III on 2 June 1994. The PPSA is the implementing legislation of MARPOL 73/78. As discussed in Section Two above, the PPSA does not only implement Annexes I, II and III, but also Annex

V dealing with garbage.[6] In addition, the PPSA also contains provisions on pollution from land-based sources. Singapore is preparing to ratify Annex VI in 1999.

3) **CLC 1992.** Singapore became a party on 16 September 1981. The Convention entered into force in Singapore on 15 December 1981. At that time, the MSOPA was the implementing law providing for strict liability and limitations to liability for oil pollution by tankers. Singapore acceded to the 1992 Protocol on 18 September 1997. The Protocol entered into force in Singapore on 18 September 1998 (MPA, 1997b). MS98, which repealed the MSOPA, took effect on the same day.

4) **FUND 1992**. Singapore did not ratify the original Convention (1971) but only the Protocol of 1992. The Instrument of Accession was deposited on 31 December 1997. CLC 1992 will enter into force in Singapore on 31 December 1998. The new law, MS98, implements both CLC 1992 and FUND 1992. MS98 requires importers/recipients of oil cargo to contribute to the IOPC Fund and provides for the instances and procedures where claims may be made against the Fund.

5) **Basel Convention.** Singapore became a party on 2 January 1996. On 1 December 1997, the President assented to Act No. 13 of 1997, or the Hazardous Waste (Control of Export, Import and Transit) Act. The law, which took effect on 16 March 1998, implements the Basel Convention.

The Hazardous Waste Act regulates the import, export and transit of hazardous and other wastes following the framework of the Basel Convention. A permitting system is provided for the transport of hazardous wastes into and out of Singapore, which includes the regular Basel permits as well as special permits for instances covered by specific bilateral, multilateral and regional agreements under Article 11 of the Convention. The transport of regulated materials without the proper permits is severely punished with a maximum $300,000 (US$214,286) fine for corporations or a maximum $100,000 (US$71,429) fine and/or imprisonment not exceeding two years for individuals. Following the Convention, the law prohibits the export of hazardous wastes to Antarctica.

To effectively enforce the regulations, the law created the office of Director of Hazardous Wastes. The Director has extensive powers of inspection and control of the movement of vessels and aircraft carrying the regulated materials. The law does not spell out the regulatory procedures in detail but authorises the Minister to make regulations to give effect to the Convention and its amendments or any Article 11 arrangement or its amendments.

---

[6] *Singapore acceded to Annex V of MARPOL 73/78 on 27 May 1999.*

### *Regional Cooperation*

Singapore, Indonesia and Malaysia entered into a Memorandum of Agreement with the Malacca Strait Council in 1981 on the establishment of a revolving fund to combat oil pollution from ships in the Straits and Singapore. Japan donated 400 million yen (US$3,382,664.00) to the fund. The fund is managed by a Revolving Fund Committee with members from the three countries (Alam, 1997).

Singapore actively participates in ASEAN initiatives on marine environmental protection. Since the first meeting of the ASEAN Experts Group on the Environment in Jakarta in 1978, ASEAN has come up with institutional structures and action plans to support national, regional and international efforts on environmental matters including marine environment management. The ASEAN Experts Group meetings were upgraded to the meetings of the ASEAN Senior Officials on the Environment (ASOEN), under which working groups were established. Among these working groups is the Working Group on ASEAN Seas and Marine Environment, co-ordinated by Brunei and the Working Group on Transboundary Pollution, which Singapore co-ordinates.

ASEAN has come up with a Strategic Plan on the Environment 1994-98, which includes as a strategy the promotion of the protection and management of coastal zones and marine resources. The plan is to improve regional marine and coastal environmental coordination and develop a framework for the integrated management of regional coastal zones. The Strategic Plan is actually the fourth regional environmental plan developed by ASEAN. Previous such plans, namely the ASEAN Environmental Programme I, II and III (ASEP I, II and III) included the marine environment as a major component (See: Koh, 1996).

An ASEAN Cooperation Plan on Transboundary Pollution was adopted in 1995 in Kuala Lumpur. It focuses on transboundary atmospheric pollution, transboundary movement of hazardous wastes and transboundary ship-borne pollution. The Plan encourages ASEAN countries to accede to the Basel Convention and the promotion of information exchange between ASEAN countries regarding hazardous wastes and foreshadows the development of national legislation in relation to such matters as liability and compensation issues relating to movements of hazardous wastes. The Plan also encourages the creation of training programs for mitigation of ship-borne pollution and the creation of enhanced enforcement activities and onshore reception facilities for ship waste discharges (Boer, et al., 1998).

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

Singapore is a leading example in the effective formulation of laws and policies on marine pollution prevention and management. It also has the capability to play a key role in

the development of international norms for the management of the marine environment, since it is a major player in international shipping and maritime trade.

As proof of its effective policies and laws, a study has shown that there is 90% degree of compliance with environmental regulations in the manufacturing sector. This has been attributed to a number of factors (Hongkong Gov't., in Chia, 1997):

a) a growing manufacturing sector, and the assumption that industries are much more likely to comply if they are performing well;

b) strong government support for the manufacturing sector;

c) the fact that multinational corporations often operate within parameters that exceed national standards because of their adherence to international codes of practice; they have helped raise the standards of local small and medium-sized industries through their sourcing strategies which provide incentives to upgrade production and improve environmental management practices;

d) the fact that the process of shifting Singapore's production towards higher value-added goods and services has resulted in a number of the more polluting firms moving away from Singapore; and

e) a strong and committed national leadership.

The same factors can probably be said to explain high compliance with environmental regulations in the other sectors, especially shipping. Government support for the promotion and development of the shipping industry and the provision of the necessary infrastructure to prevent and manage pollution in the seas is very strong. Clear laws and policies that mandate the use of such infrastructure promote the full use of these facilities.

In Singapore, there is no law requiring integrated management. However, in actual practice the various government agencies work well together towards a common goal. Perhaps it is because Singapore has a small bureaucracy and fewer tiers of control.

In the matter of capacity for participation in international conventions, Singapore is also a good model. It has a well-informed machinery to assess whether it is to the interest of Singapore to be a party to an international agreement. To date, Singapore has not acceded to the London Convention 1972, the Intervention Convention, the Salvage Convention and the

OPRC.[7] It believes that no international convention should be ratified merely for the sake of ratification. Singapore takes its responsibilities under the international agreements seriously such that it does not become a party readily unless it is certain to meet its obligations. On the other hand, Singapore actively participates in the meetings and negotiations for international agreements to which it is a party (e.g., MARPOL 73/78).

Although Singapore has in place an advanced oil spill contingency plan, it has deferred ratification of the OPRC until it is certain of meeting the obligations entailed by such ratification. It is currently preparing amendments to existing legislation in support of OPRC, to make way for its plan to ratify the Convention in 1999, although in fact, Singapore is already implementing the provisions locally (MPA, 1998d). In the case of the London Convention 1972, Singapore has yet to see the need to ratify the Convention since no dumping activities are planned. Existing laws already cover the dumping by ships of any material.

Capacity building is a continuous and co-operative effort with strong participation from academe, such as the Asia-Pacific Centre for Environmental Law (APCEL) which does policy research and conducts trainings. APCEL responds to the need for environmental legal education and promotion of awareness of environmental issues.

The MPA also has strong training arm, the National Maritime Academy, which provides quality training to ensure that there is a ready pool of highly skilled maritime and port personnel to meet the needs of the industry. The Training Division of the MPA also organises workshops/seminars/lectures on topical issues of interest for the maritime/port community, sometimes jointly with professional bodies in Singapore such as the Chartered Institute of Transport (CIT), the Baltic and International Maritime Council (BIMCO) and local tertiary institutions. These workshops/seminars/lectures are aimed at keeping the shipping community informed of the latest developments in the industry so that they can take the necessary action to maintain their relevance.

[7] *Singapore acceded to OPRC on 10 March 1999.*

# Thailand

## THE MARINE POLLUTION SITUATION IN THAILAND

Thailand has over 2,614 km of coastline, facing both the Pacific and the Indian oceans. The seacoast bordering the Gulf of Thailand is 1,660 km long while that bordering the Andaman Sea is 954 km long.

Most of the pollution in Thailand comes from land-based sources, mainly domestic waste. Approximately 80% of land-based pollutants are domestic waste and 20% is industrial waste. Wastewater from communities is discharged directly into the canals and rivers, eventually reaching the coast.

Due to concentration in the Bangkok Metropolitan Region of 75% of the country's manufacturing industries and over 50% of total energy consumption, the area also experiences high levels of pollution relative to the rest of the country. The insufficiency of public drainage and waste treatment systems has resulted in the use of the canals in Bangkok as open sewers for domestic waste and industrial effluents. Chaopraya River, which flows through Bangkok, is therefore severely polluted. Other rivers where industrial development occurs are beginning to experience this problem. These rivers empty into the Gulf of Thailand.

Thirty-three thousand tonnes of solid waste are generated in Thailand each day, 7,000 in Bangkok alone. About 77% of the waste generated in Bangkok are disposed of in sanitary landfills. Currently, 20 urban centres have been equipped with treatment facilities for this type of waste. Most of the current waste recycling activities in Thailand are small-scale, involving scavenging and low technology or manual techniques of physical separation and purification of recyclable materials. Approximately seven to eight percent by weight of municipal solid waste is recycled.

Another cause for concern is the hazardous waste component of municipal waste, estimated at 400,000 tonnes per year, particularly with regard to polychlorinated biphenyls (PCBs), chromium VI and mercury from batteries, fluorescent lights, household chemicals and electronic equipment. No special facilities are available for the handling of these wastes. As to industrial waste, the economic development of Thailand has brought with it the rapid increase of establishments generating hazardous and toxic waste, from 12,000 before 1980 to 31,000 in a decade. Of most concern are the small and medium scale industries. In 1994, 1.6 million tons of hazardous wastes were generated in Thailand.

The development of agribusiness has had the consequence of increasing the use of chemical fertilisers and pesticides. So far, however, the levels of residue from these chemicals found in the soil and water are still within acceptable levels.

Fisheries is an important industry in Thailand. Thailand's marine areas are probably over-exploited. The estimated annual sustainable coastal fisheries production is 750,000 tonnes. The reduction of the EEZ due to conflicting claims with neighbouring countries has further concentrated the fishing effort to a smaller area, causing problems in fisheries development. The shrimp farming industry has rapidly grown during the last decade, leading to strict controls imposed over mangrove and coastal areas. However, this has resulted in a spillover of shrimp farming to freshwater areas, causing salinisation.

As for pollution from vessels, although the law prohibits the discharge of waste from ships, vessels continue to illegally discharge and dump waste in Thai waters, making them a significant source of marine pollution. Thailand has inadequate reception facilities for oily and other wastes from ships.

Pollution from seabed activities is not significant as Thailand only has offshore gas production facilities that are located outside Thailand's territorial sea.

## NATIONAL MEASURES ON MARINE POLLUTION

### *Legislation and Regulations on Marine Pollution in General*

The basis for State action concerning the environment is found in the Thailand Constitution of 1991. Section 74, Chapter 5 on State Policy provides that the State is to "maintain the environment and protect against pollution."

Chapter 4 of the Constitution on the responsibilities of the Thai people provides that they must "conserve natural resources and the environment as prescribed by law." Section 6 of the Enhancement and Conservation of National Environmental Quality Act (1992; hereinafter, the National Environmental Quality Act or the NEQA) provides, along with individuals' duties, the right to information as well as the right to compensation for "dangers" from contamination or spread of pollution caused by State-supported activities or projects. The duties are to co-operate and assist government officials in the performance of their responsibilities relating to the environment, to strictly observe the laws on the environment and to file complaints against any witnessed violators of environmental laws.

The umbrella environmental legislation in Thailand is the NEQA, which effectively replaced the 1975 Environment Act. The NEQA provides the legal basis for the management and control of environmental quality, environmental quality standards, policy development and requirements for EIA.

The characteristics of the law are: 1) recognition of environmental concerns as a vital part of development; 2) empowerment of policy and planning agencies with enforcement authority; 3) decentralisation of authority over environmental regulation to local governments; 4) recognition of the public's right to know and to participate in environmental matters; and 5) recognition of the important role of the private sector and NGOs in environmental protection.

The NEQA mandates the Minister of Science, Technology and Environment (MOSTE) to formulate the Environmental Quality Management Plan (Sec. 35; hereinafter, EQMP). All concerned government agencies shall implement this plan, and it is the duty of MOSTE to advise them on the formulation of their respective work plans in accordance with the EQMP. The EQMP should propose plans of action on the following: 1) management of air, water and environmental quality; 2) pollution control from point sources; 3) conservation of the natural environment, natural resources or cultural environment; 4) estimate of financing needed from the government budget and the Environmental Fund for the implementation of the EQMP; 5) scheme for institutional arrangements by which co-operation and co-ordination among government agencies and the private sector may be strengthened; 6) legislation and regulations needed; and 7) scheme for inspection, monitoring and assessment of environmental quality for objective evaluation of the results of the implementation of the EQMP.

As of early 1997, the EMQP has been proposed and approved. The following are its key targets: 1) prevention of further deterioration and acceleration of rehabilitation of degraded natural resources; 2) co-ordination of use of and reduction of conflicts over natural resources and minimisation of impacts of resource use; and 3) support for participation of all sectors, including local organisations, NGOs and the general public in natural resource management and administration for their sustainable use.

Under the NEQA, the National Environment Board (NEB) has the power to prescribe, among others, water quality standards for coastal and estuarine water areas (Sec. 32(2)). Pursuant to this, the Notification of the NEB No. 7 (1994) on Regulations on Standards for Seawater Quality classifies sea water into the following types of uses: (a) natural and environmental conservation; (b) coral reef conservation; (c) natural conservation other than coral reef; (d) sea water fishery farm; (e) swimming; (f) sports other than swimming; and (h) industrial areas. Different standards of water quality are applied for each type of seawater.

Sections 119 and 204 of the Navigation in Thai Waters Act (1914), as amended in 1992, provide the bases for the prohibition of all acts resulting in the pollution of the marine environment. Section 119 provides that:

> "Any person who, without the consent of the Harbour Master or other competent authority, dumps or discharges rocks, gravel, ballast, silt, mud, detritus, refuse, including oil and chemicals or any other substance in public waterways or public utility such as rivers, canals, swamps, reservoirs and lakes, or Thai territorial waters which may cause settling, or render them contaminated and poisonous to creatures, or endanger navigation shall be punished with a fine not exceeding two thousand baht [US$79] and shall repay the expenses which may be incurred by the Harbour Master in removing the same."

Section 204 further provides that "No discharge of petroleum whether mixed with water or not, shall be permitted into the harbour or river from any tank ship, or from the licensed premises." Refusal or failure to comply with this latter provision shall be punishable under Section 208 with a fine not exceeding 500 baht (US$20) or imprisonment for a period not exceeding six months.

Section 119, together with Sections 204 and 208, forbids operational and accidental discharge of pollution from ships. The same provision is the basis for the prohibition of ocean dumping in Thailand. The provision is broad enough to cover the disposal of industrial, hazardous and other wastes into the marine environment, although the penalty may not be high enough for deterrence.

***Legislation and Regulations on Marine Pollution from Land-Based Sources***

Sections 78 and 79 of the NEQA provide that the collection, transport, treatment and disposal of garbage and other solid wastes shall be in accordance with the governing laws. These are the Factory Act of 1992, the Toxic and Hazardous Substance Act of 1992, the Underground Water Act of 1977, the Mineral Act of 1967, the Public Health Act and the regulations issued pursuant to them.

After the NEQA was passed, a number of these laws were revised to promote an integrated waste management system. Among those revised were the Factory Act, the Public Health Act and the Toxic and Hazardous Substance Act.

The Factory Act of 1992 provides the legal basis for the establishment and control of industrial operations including the setting and enforcement of industrial standards. Under this law, generators of industrial waste are required to submit information on the composition and quantity of waste generated and on their treatment and disposal methods. If hazardous waste is generated, the factory is required to comply with the Hazardous

Substances Act and the NEQA.

The Ministry of Industry (MOI) is responsible for industries outside of designated industrial estates, while the Industrial Estates Authority of Thailand (IEAT) governs industries within the estates. Each is responsible for pollution within their jurisdiction. An example of an MOI regulation is the Notification of the Department of Industrial Works (MOI No. 25, 1988) regarding methods of storage, detoxification, transportation, treatment, and disposal of solid waste and unusable material from specific industries including smelting, electronic battery, electroplating, pesticide and chemical industries.

Under Section 55 of the NEQA, the Minister shall establish emission and effluent standards "in order to meet the environmental quality standards set by virtue of this Act for the conservation of national environmental quality." If other standards are already in existence under other laws, and they are more stringent, the latter shall continue to be in effect, notwithstanding the issuance by the Minister of regulations under the aforequoted provision. If the older standards are less stringent, the responsible government agency shall amend them to meet the standards set by the Minister (Sec. 56). If deemed reasonable, a Provincial Governor also has the power to set special emission or effluent standards within a pollution control area within the jurisdiction (Sec. 58).

A "pollution control area" or "pollution control zone" is an area so designated by the NEB by notification for the purpose of controlling, reducing and eliminating pollution, where it appears that the locality covered is affected by pollution problems and there is a tendency that such problems may be aggravated to cause health hazards to the public or adverse impact on the environmental quality (Sec. 59). The NEB may also designate an area as an "environmentally protected area" or "environmentally protected zone" where appropriate and take the necessary measures to protect the environment within the zone (Sec. 43). Pollution has been extensively managed within said zones, which have been designated since the passing of the NEQA and the EQMP in 1992.

The seventh national economic and social plan of the government includes a policy to relocate pollution-intensive industries from the Bangkok Metropolitan Region to designated areas. To facilitate waste treatment, industries are being encouraged to establish their operations within industrial estates, which are managed by the IEAT, a State-owned enterprise. Meanwhile, industrial development in the rural areas is also encouraging industry to relocate.

Industrial estates provide waste treatment facilities. The IEAT, through Notification No. 13/2530, has set up a system for industries within the estate to discharge into the central waste treatment system.

### *Legislation and Regulations on Oil Pollution*

In 1994, Thailand promulgated a Regulation of the Prime Minister's Office on the Prevention and Combating of Oil Pollution B.E. 2537 to replace a similar regulation promulgated in 1982. The regulation establishes a Committee on the Prevention and Combating of Oil Pollution, with members from every concerned Department of the government and the private sector. The Committee is responsible for policy formulation regarding oil pollution control at the national and international levels, for preparation of the National Response Plan and generally for the prevention and combating of oil pollution.

### *Legislation and Regulations on Toxic, Hazardous and Nuclear Waste*

Existing government regulations and institutions have been ineffective in controlling hazardous wastes for several reasons, which include diffusion of authority, lack of co-ordination, inadequate personnel, limited financial resources and lax enforcement. Diffusion of authority refers to the fact that provisions regarding chemical substances and the authority to regulate them were spread over approximately 21 laws. Furthermore, the provisions refer to "poisonous substances" a term that has a meaning far more limited than toxic and hazardous substances. This situation often resulted in gaps and loopholes where certain substances were left unregulated and thus there would be a lack of responsibility for incidents. The Hazardous Substances Act of 1992 was enacted as an integration measure and specifically aims to widen the scope of existing regulation.

The Act creates the Hazardous Substances Board and provides for control in the import, export, manufacturing, storage, transport, use and disposal of hazardous substances.

"Hazardous waste" is defined in the Hazardous Substances Act as waste containing any of the following elements: explosive substances, flammable substances, oxidising agents and peroxides, toxic substances, substances causing diseases, radioactive substances, mutant-causing substances, corrosive substances, irritating substances and other substances, chemicals or otherwise, which may cause injury to persons, animals, plants, property or the environment. Thailand is in the process of developing regulations to conform to the Basel Convention, which it ratified in November 1997.

Under the Factory Act, the MOI has issued a number of notifications on the control, storage, use, treatment and disposal of hazardous substances. Under the amendments to the Factory Act and the NEQA in 1992, licensed private firms are now allowed to do monitoring work and report to the Department of Industrial Works of the MOI or the IEAT, as the case may be, with the cost charged to the facilities monitored.

## LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGES

The NEQA has adopted the polluter pays principle. Section 96 provides that:

> "If leakage or contamination caused by or originated from any point source of pollution is the cause of death, bodily harm or health injury of any person or has caused damage in any manner to the property of any private person or of the State, the owner or possessor of such point source shall be liable to pay compensation for damages thereof, regardless of whether such leakage or contamination is the result of a wilful or negligent act of the owner or possessor thereof, except in case it can be proved that such pollution leakage or contamination is the result of: (1) Force majeure; (2) An act done in compliance with the order of the Government or State authorities; (3) An act, or failure to act, of the person who sustains injury or damage, or of any third party who is directly or indirectly responsible for the leakage or contamination. x x x "

Such compensation or damages shall include all expenses actually incurred by the government service for the clean-up of pollution arising from the leakage or contamination. It must be noted that under the NEQA, "point source" is defined as "any community, factory, building, structure, vehicle, place of business or activity or any other thing from which pollution is generated."

As mentioned above, under Section 6, any individual suffering damage or injury from pollution caused by State-supported projects has the right to compensation.

Section 97 provides that any person who commits an unlawful act or omission resulting in the destruction, loss or damage to natural resources owned by the State or belonging to the public domain shall compensate the State for the total value of the natural resources so destroyed, lost or damaged. This provides a basis for resource valuation. It will be noticed from these two articles that damage to natural resources resulting from non-criminal activity is not compensable unless the natural resources are "property."

Aside from the civil liabilities provided in Chapter VI, the NEQA also provides in Chapter VII for penal sanctions for various violations of the provisions of the Act.

Section 98 provides that any person who violates or refuses to observe the order issued by the Prime Minister or authorised officer by virtue of Section 9, i.e., in case of emergency or public danger arising from natural disaster or pollution, or who obstructs any act done in compliance with such order, shall be punished by imprisonment not exceeding one year or a fine not exceeding 100,000 baht (US$3,937), or both. If the offending person is the same person who caused the danger or damage arising from

pollution, such person shall be punished by imprisonment not exceeding five years or a fine not exceeding 500,000 baht (US$19,685), or both.

Under the Factory Act, non-compliance results in liability for a range of fines up to 200,000 baht (US$7,874). The highest liability under the Act is for operation without permit of a Type 3 Factory (one likely to cause pollution), that would result in a fine of 200,000 (US$7,874) baht or imprisonment for a maximum of two years or both. There is also an additional fine of 5,000 baht (US$197) per day until the factory is closed.

Failure to comply with the wastewater treatment requirements of the NEQA results in penal sanctions ranging from imprisonment of one month and/or 10,000 baht (US$394) (for obstruction of the legal order of the pollution control official) to imprisonment for one year and/or 100,000 baht (US$3,937) for failure to install wastewater treatment facilities, etc. Under Section 111, the directors or managers shall be liable for criminal acts of the corporation in this connection.

### REQUIREMENTS FOR EIA AND ACTUAL PRACTICE

After the NEQA was passed, the coverage of the EIA was increased to include more types and sizes of establishments and projects and the process improved. The NEQA requires an EIA for certain types and sizes of projects or activities likely to have environmental impact, to be identified by the Minister of Science, Technology and Environment with the approval of the NEB and published in the Government Gazette (Sec. 46). The Minister in 1993 issued two notifications to that effect, requiring EIA for such projects as: (1) hotel/resorts with more than 80 rooms located adjacent to rivers, coastal areas, lakes or beaches or in the vicinity of national parks or historical parks; (2) mining; (3) industrial estates; (4) ports which can accommodate vessels above 500 gross tons; (5) coastal reclamation; (6) certain sizes of building in areas adjacent to rivers, coastal areas, lakes or beaches or in the vicinity of national parks or historical parks; (7) hospitals, particularly if adjacent to rivers, coastal areas, lakes or beaches; (8) many industries, including pesticide, chemical fertilisers, petrochemical, etc.; and (9) highways through different types of protected areas and coastal areas within 50 metres from maximum sea level.

A project or activity may be exempted from the EIA requirement if said project or activity complies with various measures provided in the applicable standard EIA report. This standard EIA report pertains to the EIA of a project or activity of the same type or size or located in an area of similar nature as the project or activity seeking an exemption. The Minister, with the approval of the NEB shall issue a notification regarding such exemption in the Government Gazette. The Minister shall issue rules and methods pertaining to such exemption (Sec. 46).

## THE USE OF MARKET-BASED INSTRUMENTS

The Thai government is exploring the potential role of market-based incentives to improve compliance with regulations. In general, the NEB has the power to recommend, among other measures, the application of MBIs (Sec. 13, NEQA). Under Section 94 of the NEQA, the owner or possessor of any point source of pollution who has the duty to install an on-site treatment facility may request the government for assistance regarding tax exemptions for imported machinery and equipment and apply for permission to bring in foreign experts including income tax exemptions for such experts. Income tax may be waived for environment-related activities. Those who are not legally required to install such facilities but wish to do so, have the right to request for "inducement support" from the government.

The NEQA also provides for penalties based on the polluter pays principle, as discussed above. Manufacturers must include the pollution control costs within the capital and operating costs of manufacturing products and providing services, instead of being subsidised by the national budget.

Other applications of MBIs in Thailand include a tax on leaded gas to promote the use of unleaded gas and a combination of incentives and penalties -- including polluter pays types -- to promote waste reduction, recycling and reuse. The use of the polluter pays principle will be heightened within the next few years particularly for waste minimisation. Potential instruments for use in the future have been identified, such as increasing the environmental taxes on the water-intensive and toxic-intensive sectors.

Under the National Hazardous Waste Management Plan, the following measures have been implemented and encouraged: (1) tax exemptions for the import or provision of facilities for the collection of recyclable waste; (2) imposition of a progressive tax on the amount of waste to be disposed; (3) financial support and privileges for the establishment of waste recycling facilities; and (4) programs to improve understanding and awareness among waste producers.

The NEQA established the Environment Fund (Sec. 22) which is to be used, among others, for loans to government agencies and the private sector for wastewater treatment facilities and other pollution control projects (Sec. 23). The seed money of the Fund came from the Fuel Oil Fund and the Revolving Fund for Environmental Development and Quality of Life established by the Annual Budget for 1992. Other sources are grants given by the Government from time to time and donations. Service fees and penalties collected under the NEQA shall go directly into the Fund without having to pass through the Treasury, but a ratio shall be retained by the facility providing the services for its operation (Sec. 93).

The Fund's initial capital was 500 million baht (about US$20 million at the rate at that time). This was further supplemented by the Fuel Oil Fund, which was built up from a charge to consumers of 0.1 baht (about US$0.004) per litre of oil consumed. At the start of 1997, the Fund had accumulated to over six billion baht (about US$240 million at pre-devaluation rates).

Money from the Environmental Fund may be disbursed in the form of grants or loans to government agencies, local administrations or private persons, for specific purposes, namely, the establishment and/or operation of wastewater treatment or waste disposal facilities. Loans or grants may also be disbursed for purposes to be found under the general description of "any activity concerning the promotion and conservation of environmental quality" at the discretion of the Fund Committee and with the approval of the NEB.

A Fund Committee runs the Fund. The Permanent Secretary of the MOSTE chairs the Committee. The members are the heads of 10 other government ministries and agencies and five "qualified persons" appointed by the NEB. The Secretary-General of the Office of Environmental Policy and Planning is both member and secretary of the Fund. The Committee may fix the duration for repayment of loans, the interest rates and securities and shall also determine the ratio and criteria for retention of service fees and penalties by the service facility.

Since its establishment, the Fund has been utilised as envisioned, mostly for the management of water quality, air and noise quality and solid waste as components of local administrations' Action Plans.

The use of MBIs has already gained a foothold in Thailand and will have an expanded role in the future. In particular, the polluter pays principle will be utilised more and more extensively.

## NATIONAL LEGISLATIVE/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

### *Legislative Mechanisms and Processes*

Thailand is governed by a constitutional monarchy with a parliamentary government. An elected governor administers the capital city, Bangkok. The country's 74 provinces are divided into districts, sub-districts, *tambons* (groups of villages) and villages. An appointed governor administers each province.

### *Distribution of Mandates and Obligations*

The MOSTE was given full jurisdiction over the development of environmental legislation, management and general environmental policy under the NEQA.

The NEB which is chaired by the Prime Minister with the Deputy Prime Minister and the Minister of Science, Technology and Environment as First and Second Chairmen, respectively, implements the NEQA. Other members of the Board are the Ministers of Defence, Finance, Agriculture and Co-operatives, Transport and Communications, Interior, Education, Public Health, and Industry, the Secretary-General of the National Economic and Social Development Board, the Secretary-General of the Board of Investment, the Director-General of the Budget Bureau, eight other members qualified in environmental matters, at least four of whom should be from the private sector and authorised by the Cabinet Council and the Permanent Secretary of the MOSTE as member and secretary.

The Board has the authority to recommend national policy and environmental promotion and preservation plans to the Cabinet and is responsible for co-ordination among government agencies in waste management, environmental monitoring and inspection, control and promotion of waste management facilities. The Board also prescribes environmental quality standards and hazardous waste regulations, oversees the EIA process and monitors the use of the Environmental Fund.

The MOSTE is equipped with three watchdog organisations: the Office of Environmental Policy and Planning (OEPP), the Department of Pollution Control (DPC), and the Department of Environmental Quality Promotion (DEQP). The NEB may employ these agencies for further action on its functions.

The OEPP determines Thailand's environmental policies and draws up a national environmental master plan similar to the five-year National Economic and Social Development Plan. The OEPP also oversees provincial administrative bodies involved in environmental issues. The DPC, on the other hand, monitors the levels of pollution in Thailand and sets environment quality standards. Finally, the DEQP processes information, promotes environmental projects, mobilises funds for projects and co-ordinates with the private sector.

Environmental regulation of industries within industrial estates is under the control of the IEAT, although all industries are ultimately registered under the DIW of the MOI. Industries outside designated industrial estates are under the control of the DIW. These two agencies are responsible for issuing operating licenses to factories, setting industrial effluent and emission standards, enforcing related legislation and monitoring industrial pollution and providing central treatment facilities for factories in their respective areas.

Meanwhile, municipalities, sanitary districts and provincial councils are responsible for the collection and disposal of community wastes.

The Ministry of Transport and Communication has overall responsibility for shipping in Thai waters. Under the Ministry, the Harbour Department is responsible for all matters concerning shipping and the territorial waters of the country. As such it is in charge of pollution from sea-based sources. The Port Authority of Thailand looks after the ports.

***Local Government***

One of the main achievements of the NEQA is the transfer of functions and responsibility over environmental management to local administrations at both provincial and municipal levels. The Tambon Administration Organisation Act passed in 1995 continued this development by granting "juridical person" status to the local governments, thereby transferring certain powers to them. For instance, land use planning is now done locally.

Local governments are encouraged under the Act to formulate waste management action plans. Since the passing of the Act, local governments have undertaken the following: operation or management of central treatment facilities at the local level, inspection, requiring installation of treatment facilities, issuance of permits to operate and render treatment services and charging of fines and fees related to the central treatment facilities.

The management of watersheds also utilises the local stakeholders' approach, thereby increasing the degree of local involvement therein.

***Public Participation***

Unlike the first five national economic and social plans, the Sixth Plan for 1986 to 1991 included natural resources and environmental planning considerations. This Plan emphasised alternative development and decentralising natural resources management to the local level in order to promote a sense of ownership, participation and awareness among local residents.

The revisions of the NEQA in 1992 increase the right of the public to information and participation.

Sections 7 and 8 of the NEQA allow NGOs to be registered with the MOSTE in order to be able to undertake the following activities: the organisation of volunteers to assist government agencies in the performance of duties under this Act and other

environmental activities, awareness-building activities, assistance to communities, research and studies from which they can make recommendations to the government and legal aid to those entitled to compensation for pollution damage. However, to qualify for registration, the NGO has to be: a) a juridical person; b) directly engaged in activities concerning environmental protection or conservation of natural resources; and c) non-political and non-profit oriented. The MOSTE is empowered to prescribe the rules, procedures and conditions for registration. Section 8 of the Act provides that environmental NGOs registered with the MOSTE pursuant to Section 7 may request government assistance or support in certain matters. The Fund Committee, with the approval of the NEB, may allocate grants or loans in support of any activity of the registered NGOs. However, in 1996 and 1997, only 65 NGOs were registered with MOSTE, and only 15 of the projects supported by the Environment Fund were by NGOs. This is not surprising, as NGOs are by nature uncomfortable with having to undergo a process of registration and evaluation by government. The government's policy is to encourage more NGOs to participate.

In reality there are hundreds of NGOs in Thailand working on issues related to the environment. Most of these work mainly with land environment issues. There are probably a number in coastal areas, and very few dealing with the marine environment.

One role of the NGOs in Thailand is the mobilisation of communities' participation in environmental management. Community-based monitoring and evaluation have been utilised in the areas of waste management. Proposed laws in fisheries, community forests and water resource law include mechanisms by which local communities will play larger roles in the management of natural resources.

In the past few years, Thailand has involved the private sector in development projects, especially in infrastructure, through a number of schemes such as the build-operate-and-transfer (BOT). Environment-friendly practices in industries have also been promoted through such programs as demand-side management (for waste minimisation among others) and integrated pest management.

There are private sector interest groups such as the Oil Industry Environmental Safety Group (OIESG) that actively work on marine pollution issues. Composed of the major oil companies in the country, it works closely with the Harbour Department on oil pollution prevention and response.

## INTERNATIONAL CONVENTIONS AND INITIATIVES

Since Thailand's ratification of the Basel Convention in November 1997, legislation and other mechanisms have been in place. Aside from the Basel Convention, however, Thailand has not ratified any of the international conventions related to marine pollution. The country has also made a policy decision to ratify MARPOL 73/78 in view of the increasing evidence of pollution from ships in the Bangkok area and the vicinity of other ports in the eastern seaboard. This is a matter of extreme concern to the country, coastal tourism being very important to Thailand. The legislative framework still needs to be set up. As mentioned above, there are only three provisions of law referring to pollution from ships and other sea-based sources. Currently, reception facilities in Bangkok and smaller ports in the eastern seaboard are being developed by the government and private sector working in tandem. Corresponding fee mechanisms are being developed as well. The challenge is to minimise costs for discharge at the facilities to ships while at the same time making the facilities a viable business concern.

Thailand is a signatory to the Tokyo Memorandum of Understanding on Port State Control in the Asia-Pacific.

Thailand is not a party to the London Convention 1972 although it is in principle opposed to disposal of wastes at sea. This is expressed by Section 119 of the Navigation on Thai Waters Act (referred to above). However, its enforcement capability is minimal.

In June of 1996, the concerned government agencies and the oil sector of Thailand agreed to recommend the ratification of FUND and CLC in early 1997. Amendments to the law and the issuance of short-term regulations would be necessary to enable Thailand to meet the requirements of both conventions. Procedures would have to be set up for the collection of fees from the private sector for contribution to the funds.

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

In the past decade, Thailand has experienced high growth rates and the drive to develop has dominated. However, the country has recognised the importance of the environment and has acted on it.

The NEQA is an attempt to integrate the provisions of law on the environment into one law, with one agency responsible. The composition of the NEB -- with no less than the Prime Minister as Chair and membership from the Minister level -- signifies the importance Thailand has attached to the environment. Thus, despite the retention by certain agencies, in particular the MOI, of powers related to environmental protection,

regulation is co-ordinated through the NEB.

The decentralisation of environmental functions and responsibilities seems to be successful at least in producing more action in terms of pollution management.

The ineffectiveness of laws and regulations has been aggravated though due to such problems as diffusion of authority, lack of co-ordination, inadequate human and financial resources and lax enforcement.

The Thai government can learn through time of the use of monitoring and other enforcement mechanisms to maximise the available resources for effective enforcement. Co-ordination is also one aspect of governance that is difficult to attain but necessary for implementation. The new and amended pieces of legislation in Thailand provide openings for new approaches such as delegation of monitoring work to private entities.

Most efforts towards the management and prevention of marine pollution in Thailand have been on the land-based sources. This is not illogical since, as anywhere, the bulk of marine pollution comes from land-based sources.

At the moment in Thailand, the understanding of the problems in the land environment far outweighs that in the marine environment. In the marine environment the main concern is the conservation of the living resources. There is far less lucidity about the physical problems of marine pollution. However, it cannot be denied that the success in the management of land-based sources of pollution also has a positive impact on the marine environment.

There is as yet very little legislation dealing directly with pollution in the marine areas. There are the three provisions in the Navigation Act. On water pollution, there are provisions on canals and waterways. This is understandable for a country with many such watercourses. As these canals and waterways eventually find their way to the sea, their pollution has significant effects on the marine environment as well. However, there is much more room for legislation and related actions for more effective management of marine pollution.

Bangkok, the biggest port, is located at the northern extremity of the Gulf of Thailand, its most enclosed portion, and is thus most vulnerable to pollution. The growing maritime industry increases hazards from ship-borne pollution. More efficient ships and ferries will make crossing the Gulf more practical than taking the land route to and from the eastern and western seaboards.

Language is a constraint in the implementation of international conventions. Expertise for the translation of a technical document like MARPOL 73/78 into the Thai

language is not readily available. Studying legislation is met by the same constraints. Recently however, the Harbour Department has decided to act on the problem by directly translating such important documents.

It can only be speculated that the delay in the ratification of the conventions that Thailand has already signified it will ratify is due to a complicated political process. In the meantime, the concerned agencies such as the Harbour Department are taking some steps to incorporate the principles embodied by international documents.

In sum, the following actions are needed to move towards the following goals in marine pollution legislation: 1) ratification of the relevant conventions; 2) development of more specific legislation in the area of marine pollution, providing the proper definitions, authorities, requirements and enforcement mechanisms; 3) incorporation of marine pollution management and prevention into the national environment quality management policy and programs; and 4) facilitation of experience-sharing and other capacity-building activities among local governments in waste management and other environmental management functions.

# Vietnam

## THE MARINE POLLUTION SITUATION IN VIETNAM

The Socialist Republic of Vietnam occupies a total land area of 331,689 sq. km on the Southeast Asian mainland and has about 3,400 km of coastline which is dominated by the Red River Delta in the North and the Mekong River Delta in the south. These deltas are heavily populated and are used extensively for agricultural production. The remainder of the coastline can be characterised as a long, narrow, densely-populated strip. Average total yearly discharge of all rivers in the country is 800 billion cubic metres and on average there is a river outlet every 20 km along the coastline.

There are over 3000 islands in the coastal and marine zones of Vietnam. Approximately 50% (i.e., 29 of 61) of Vietnam's provinces and cities are located along the coastline. About one-fourth of the population in Vietnam lives in the coastal zone. The mean density of population in the coastal zone is 281 persons/sq. km, being 1.34% more than the country average. The population growth rate is about four per cent per year.

The coastal and marine zone of Vietnam is characterised by 13 major ecosystems and is rich in flora and fauna, including over 2000 marine fish species, 300 species of scleractinian coral and an unknown number of plant species.

The fisheries industry is extremely important to Vietnam, providing approximately 60% of the total animal protein consumed by Vietnamese citizens. Marine capture is primarily nearshore-based, and is undertaken by a fleet of over 60,000 motor, wind and human-powered fishing boats. Aquaculture activities in the coastal zone produce fish, crustaceans (shrimp and crab), mollusks and seaweed. The total Vietnamese fish stock is estimated at 3.6 million tonnes including 1.7 million tonnes of pelagic fish. The sustainable yield is approximately 1.2 to 1.3 million tonnes. In 1997, marine fisheries products captured totalled 900,000 tonnes. Overfishing occurs for a number of reasons, including the concentration of fishing activity in the shallow waters of the nearshore zone, destructive fishing techniques, including dynamiting and use of undersized mesh nets, increasing size of the national fishing fleet, lack of management and enforcement capabilities and intrusion of foreign fishing fleets.

Vietnam has 73 ports and harbours. On the average, a seaport may be found every 30 km along the coastline. The important harbours are found in Quang Ninh, Hai Phong, Cua lo, Da nang, Quang Ngai, Nha trang, Sai Gon, and Can Tho. In 1994, 3.2 million

tonnes of cargo were loaded and unloaded in Hai Phong, one of the major cities in Vietnam, and 5.5 million tonnes in 12 ports within the Quang Ninh area. The amount of handled cargo is expected to increase significantly during the next years. There are no reception facilities as yet in Vietnam.

Untreated sewage, industrial and agricultural waste and effluents from aquaculture pollute rivers and contribute to the contamination of the marine and coastal environment. Industrial and urban pollution adversely affect the marine environment to the extent that 60 to 70% of the waste dumped into Vietnam's seas come from these sources.

Most urban sewage is discharged into open ditches or gutters, which empty into canals that drain into ponds, rivers or the sea. Septic facilities are of low quality and are poorly maintained resulting in drains that overflow during storms, spreading untreated sewage and garbage. According to World Bank estimates, 120 million cubic metres of untreated sewage is discharged in Hanoi, 70 million cubic metres in Hai Phong, and 300 million cubic metres in Ho Chi Minh City.

Coastal industries in Vietnam may be classified as follows: (1) heavy industry, e.g., cement manufacturing, shipbuilding, ship repair, power generation, metal pipe manufacturing, engineering, coal processing, and brick making; (2) light industry, e.g., glassware, ceramics, chemical manufacturing, enamelware, paint, plastic, calcium carbide, battery, light powder, and petroleum factories; and (3) food industry, e.g., fish cannery and seafood processing.

Generally, industries dump untreated waste directly into the environment. As a result, there are high levels of some heavy metals in coastal waters near towns and industrial centres. Copper and zinc in particular have been found at unacceptably high concentration levels, and mercury concentrations reached the permissible limits in coastal waters near Quang Ninh province. At the mouth of the Red River, concentrations of copper, zinc, arsenic, dichlor-diphenyl-trichlor (DDT) and the pesticide 666 exceeded allowable levels. In general, oil concentrations in river mouths are too high to allow the cultivation of marine products in those areas.

Most of the solid waste generated in Vietnam consists of household garbage, with only 18% originating from industry. Generally, only about 50 to 70% of urban solid waste are collected. The rest are burned, fed to animals, collected by scavengers, or dumped into ponds, lakes and low-lying areas.

The amount of hazardous waste generated annually in Vietnam is estimated to be 275,000 tonnes. There are no specialised treatment or disposal facilities for medical or hazardous waste.

Vietnamese seas have become one of the most active sites for oil and gas exploration and exploitation. The estimated oil reserve is 700 million tonnes. Normal activities associated with oil transport and oil production generate significant amounts of oil pollution. Ocean currents and prevailing winds tend to bring any released oil towards Vietnam's coast. The oil released into Vietnam's coastal areas is 41,000 tonnes per year.

In late 1987, the Government issued a law on foreign investment that opened offshore areas for petroleum exploration. Thus far, 27 production sharing contracts have been signed, with others expected to be signed in the near future. The petroleum industry in Vietnam is still relatively new, but offshore oil and gas exploration and production are increasing in Vietnam's territorial waters. The production of crude oil rose from 0.3 million tonnes in 1987 to 7 million tonnes in 1994.

Vietnam exports crude oil while importing all its requirements for refined petroleum. These are all transported by sea. From 1991, the volume of sea-borne oil imported and exported by Vietnam rose at an annual rate of 19.4% to 12.621 million tonnes by the end of 1995. It is estimated that by the year 2010, a total of 40 million tonnes of oil will be passing through Vietnamese ports.

The tankers carrying this cargo are mostly foreign, as Vietnam's tanker fleet has a total of only 43,000 dead-weight tonnes (dwt) and is mostly old and outdated. However, there are plans to develop the tanker fleet to be able to carry up to 33% of the oil transported by the year 2010.

There are also plans of building refinery plants, currently non-existent, within the country.

There is substantial tanker traffic along Vietnam's coast between the major oil exporters and Japan and other East Asian countries. However, there is not enough information about the volume of this traffic or how close to the coast this traffic passes, or, in general, how significantly it affects or may affect the marine environment of Vietnam. It is estimated that approximately 200 million tonnes of oil per year travel through Vietnam's offshore waters from the Middle East to Japan.

There are a total of 973 vessels in Vietnam's shipping fleet. Two hundred seventeen of these, representing 88% of the fleet's total tonnage, ply international routes. This part of the fleet has an average age of 18 years, with some of the vessels being as old as 50 years. The rest of the fleet has an average tonnage of 200 and an average age of 12 years.

The sea plays a very important role in the country's survival and development. Coastal development, industrial pollution, environmental deterioration, reduction of biodiversity, overfishing and destruction of mangroves, swamps, wetlands and coral systems are the most serious problems facing Vietnamese development. Rational exploitation and use of marine resources and protection of the marine environment in the present stage have become urgent issues and are the focus of government policy.

## NATIONAL MEASURES ON MARINE POLLUTION

### *Legislation and Regulations on Marine Pollution in General*

Protection of the environment has been incorporated in the 1992 Constitution of Vietnam in the following provisions:

> "State organs, units of the armed forces, economic and social bodies, and all individuals must abide by State regulations on the rational use of natural wealth and on environmental protection.
>
> All acts likely to bring about exhaustion of natural wealth and to cause damage to the environment are strictly forbidden." (Art. 29)

Among the duties and powers of the Government (referring to the executive branch) under Article 112 is the duty to "take measures to protect the environment".

The Standing Committee of the National Assembly of the Socialist Republic of Vietnam approved and issued on 12 May 1977 a *Statement on the Territorial Sea, the Contiguous Zone, and the Exclusive Economic Zone of the Continental Shelf of Vietnam,* one of the provisions of which states:

> "The Socialist Republic of Vietnam has sovereign rights for the purpose of exploring, exploiting, conserving and managing all natural resources, whether living or non-living, of the waters, the seabed and subsoil of the exclusive economic zone of Vietnam; it has exclusive rights and jurisdiction with regard to the establishment and use of installations and structures, artificial islands; exclusive jurisdiction with regard to other activities for economic exploration and exploitation in the exclusive economic zone of Vietnam; the Socialist Republic of Vietnam has jurisdiction with regard to the preservation of the marine environment, and activities for pollution control and abatement in the exclusive economic zone of Vietnam."

Vietnam's EEZ is adjacent to its territorial sea and forms with it a 200-nautical

mile zone from the baseline.

In 1994, the Law on Environmental Protection passed by the National Assembly came into effect, setting the broad strategic directions for environmental assessment, protection and management in Vietnam. This law adopts the principles set by the United Nations Conference on Environment and Development (UNCED), as well as international conventions covering aspects of marine environment protection, such as MARPOL 73/78 and UNCLOS. Article 45 of the law provides:

> "The Government of Vietnam shall implement all international treaties and conventions relating to the environment which it has signed or participated in, honour all international treaties and conventions on environmental protection on the basis of mutual respect for each other's independence, sovereignty, territorial integrity and interests."

In 1991, Vietnam adopted a detailed environmental framework and action plan, the National Plan for Environment and Sustainable Development (NPESD).

The Maritime Code of Vietnam (1990) contains provisions for the protection and development of marine resources. The Code does not mention any specific international convention but refers to them in general. Article 23 refers to the obligation of both Vietnamese and foreign vessels while in Vietnamese waters to observe the "regulations of Vietnam on environmental protection and the provisions of any international agreement that Vietnam has signed or recognised." Article 6 states that in case of inconsistency between the Code and any international agreement that Vietnam has signed or recognised, the provisions of the international agreement shall prevail.

Vietnam has developed a provisional set of environmental quality standards, including standards for surface water, groundwater, drinking water, industrial wastewater effluent and environmental quality in the workplace.

***Legislation and Regulations on Marine Pollution from Vessels***

The Maritime Code of Vietnam provides that sea-going ships shall be used only after the structure, equipment, documents, crew levels and the particular skills of the crew of the ships fully conform with the regulations issued by the Minister of Transport, Telecommunications and Post on the maritime safety of ships, their crew and on the prevention of environmental pollution (Art. 17). Vietnamese sea-going ships shall be issued certificates of seaworthiness only after examination and confirmation that sufficient conditions exist to ensure seaworthiness in accordance with the State standards of Vietnam or those required under international agreements which Vietnam has signed or recognised (Art. 18).

The director of the port authority is responsible for organising the implementation of regulations governing the activities of the port authority and supervising the implementation of rules and regulations designed to ensure maritime safety and prevent environmental pollution (Art. 59).

Article 23 of the Code provides that sea-going ships whether Vietnamese or foreign, while operating in the sovereign waters of Vietnam shall observe Vietnam's regulations on environmental protection and the provisions of international instruments that Vietnam has signed or recognised. The same Article provides that foreign atomic powered sea-going ships shall be permitted to operate in the inland and territorial waters of Vietnam only after a permit to do so has been granted by the Chairman of the Council of Ministers.

Article 22 of the Law on Environmental Protection provides that organisations and individuals operating means of transportation by water, among others, must observe environmental standards and be subject to supervision and periodic inspection for compliance with environmental standards by the relevant sectoral management agency and the State management agency for environmental protection. Owners of means of transportation which, while in transit through Vietnamese territory, carry potential sources of environmental pollution, must apply for permission, and declare and submit to control and supervision by the State management agency for environmental protection of Vietnam (Art. 47).

The rules for prevention of pollution by ship (Vietnam National Standard [TCVN] 4044-85) and other rules for classification and construction of sea-going ships and cargo handling were issued in the 1980s. These are currently being overhauled to conform to MARPOL 73/78 and current international safety standards. These new rules have been submitted to the Minister for approval.

Article 17 of Decree No. 30/CP (1980) prohibits foreign ships from discharging waste materials or other noxious substances that cause pollution to the coastal and marine environment of Vietnam, and requires these ships to take all necessary measures to prevent, reduce or control pollution of the living environment. Article 16 of this Decree provides that nuclear-powered ships and ships carrying radioactive substances, or carrying or using other dangerous toxic substances, while passing through the territorial seas and contiguous zone of Vietnam, must be ready to submit to the Vietnamese authorities all necessary technical documents and apply precautionary measures in conformity with regulations on prevention of marine pollution and protection of the marine environment established in international agreements.

In the port of Hai Phong, all foreign vessels must undergo mandatory pilotage. An anchorage for explosives is located 60 km away from Hai Phong.

Proposed legislation for the management of the Vietnamese EEZ is under consideration. A national programme to respond to oil spills is likewise being developed.

Ministry of Science, Technology and Environment (MOSTE) Circular No. 2592/MTg dated November 12, 1996 pertains to the supervision of marine pollution from ships and means of river transport. The MOSTE Minister's Directive No. 389-MTg dated June 17, 1994 relates to the temporary guidelines for the treatment of oil spills. Circular No. 2262/MTg dated December 19, 1994, also of the MOSTE, contains the guidelines for the remedy of oil spill incidents. Ordinance No. 39/1998/ND-CP of June 10, 1998 discusses the treatment of sunk goods in the sea.

The Ordinance on Protection of Aquatic Resources (1998) and the Law on Water Resources (1998) embody relatively concrete provisions on the responsibilities for protecting the marine environment, measures for protecting the environment and dealing with pollution and accidents of the marine environment in activities of the concerned sectors.

***Legislation and Regulations on Marine Pollution from Land-Based Sources***

Article 26 of the Law on Environmental Protection requires that waste water, refuse containing toxic substances, pathogenic agents, inflammable or explosive substances and non-biodegradable wastes be properly treated before discharge. Article 29 of the same law strictly prohibits the discharge of grease or oil, toxic chemicals, radioactive substances exceeding permissible limits, wastes, dead animals or plants, harmful and infectious bacteria and viruses into water sources.

Guidelines on the treatment and disposal of industrial wastewater are currently being developed.

The Ordinance on Mineral Resources contains some provisions on environmental protection that are applicable to geological exploration and mineral exploitation on the land, continental shelves, inland waters and seas of Vietnam. These provisions also have some bearing on the dumping of mine tailings and other waste into rivers and other bodies of water. Article 5 of the Ordinance provides that organisations and individuals carrying out geological exploration and mineral exploitation operations shall be obliged to implement regimes in relation to management and protection of mineral resources, the environment and other resources. Article 9 provides that State management bodies, social organisations and citizens shall be obliged to protect mineral resources and the surrounding environment.

### *Legislation and Regulations on Marine Pollution from Seabed Activities*

Article 21 of the Law on Environmental Protection requires organisations and individuals, while searching and exploring for, exploiting, transporting, processing, or storing oil and gas, to apply appropriate technology, implement environmental protection measures, develop preventive plans against oil leakage, oil spills, oil fires and explosions and to have the necessary facilities to respond in a timely manner to such incidents.

The Petroleum Law (1993) contains broad provisions on the prevention of pollution and on government liability and compensation for offshore or onshore petroleum exploitation activities. This law requires organisations and individuals conducting petroleum operations to do the following: (1) utilise advanced technology and comply with Vietnamese laws on the protection of natural resources and the environment and the safety of persons and property; (2) have a plan for environmental protection, take all measures to prevent pollution, promptly eliminate sources of pollution and be responsible for remedying all results of pollution; and (3) obtain and maintain insurance for facilities and installations servicing petroleum operations, environmental insurance and other forms of insurance in compliance with Vietnamese laws and in accordance with the international practices of the petroleum industry (Arts. 4, 5 and 7). One of the essential provisions of a petroleum contract is a provision on the obligation to protect the environment and to secure safety during the conduct of petroleum operations (Art. 15).

Decree No. 84-CP issued on December 17, 1996 provides guidelines for the implementation of the Petroleum Law. Decision No. 333-QD/CNNG-KHKT issued on September 1990 by the Minister of Industry contains the regulations on the protection of the environment for oil and gas activities in the seabed. These documents stipulate the measures for the prevention and control of pollution from seabed activities subject to national jurisdiction. In addition, the MOSTE Minister's Directive No. 395/1998/QD-BKHCNMT of April 10, 1998 contains the regulations on environmental protection in searching, exploring, developing fields, exploiting, storing, transporting and refining petroleum and other related services.

The Mining Law (1994) stipulates that mining areas are to be reclaimed and rehabilitated after production and that compensation be paid for environmental damage. This includes mineral resources, which may be found in the "continental shelf, and inland and sea territory".

## LEGAL REGIME OF LIABILITIES FOR MARINE POLLUTION DAMAGES

The Law on Environmental Protection provides in Article 6 that all organisations and individuals shall have the responsibility to protect the environment and obey environmental protection legislation. Article 7 states that any organisation or individual whose activities cause damage to the environment shall make compensation therefor according to regulations by law. Article 52 provides that organisations or individuals that violate environmental protection legislation, causing damage to the State or to other organisations or individuals, shall pay compensation for the damages and the costs of remedying the consequences in accordance with the regulations.

Article 30 of the same law provides that organisations and individuals engaged in production, business and other activities that cause environmental degradation, environmental pollution, or environmental incidents must implement remedial measures as specified by the local People's Committees and by the State management agency for environmental protection, and shall be liable for damages in accordance with regulations.

Article 44 deals with the situation where there are several organisations or individuals operating within an area where an environmental incident, environmental pollution, or environmental degradation occurs, and provides for assignment of responsibility for the incident or pollution.

Sea-going Vietnamese and foreign ships that specialise in the carriage of oil, oil products or any other dangerous cargo are required, when operating in the seaports or other marine areas of Vietnam, to be insured in respect of the civil liability of their owners in the event of environmental pollution (Art. 23, Maritime Code).

Article 194 of the Maritime Code makes ship owners liable to pay civil compensation for losses that arise from the use of sea-going ships in the event that they fail to prove the cause of those losses. Article 195 adds that the liability of a ship owner shall not be reduced in respect of compensation to be paid as a result of, among others, environmental pollution caused by nuclear activities. Finally, in the event that laws of Vietnam on environmental protection or the international agreements which Vietnam has signed or recognised contain provisions inconsistent with those contained in the Code, the limits to liability to pay compensation stipulated in those laws or agreements shall prevail over the provisions of the Code.

Regulations on foreign ships operating in the maritime zone of Vietnam were stipulated in Decree No. 30/CP, 1980. Strict liability is adopted for polluters, including rehabilitation costs and liability for damages caused by pollution. Article 17 of the Decree provides that the polluting ship must pay compensation for all immediate and long-term damages caused by the pollution, in conformity with the laws of Vietnam.

The Petroleum Law, in Article 43, subjects organisations and individuals violating

any provision of this law to warning, or fine, or confiscation of their facilities, or other administrative sanctions depending on the severity of the violation. Article 44 provides that organisations and individuals, whose petroleum operations cause damage to petroleum resources, other natural resources, the environment, or to property of the State or any organisation or individual, shall be liable for compensation for such damage in accordance with Vietnamese laws.

Decree No. 26/CP dated April 26, 1996 contains the Government's regulations for the administrative punishment of violations of environmental protection legislation. Decree No. 48-CP issued on August 12, 1996 refers to the regulations for punishment of administrative violations of aquatic protection legislation.

### REQUIREMENTS FOR EIA AND ACTUAL PRACTICE

Article 18 of the Law on Environmental Protection requires organisations and individuals, when constructing or renovating production areas, population centres or economic, scientific, health, cultural, social, security and defence facilities, as well as owners of foreign investment or joint venture projects, and owners of other socio-economic development projects, to submit EIA reports to the State management agency for environmental protection. The result of the appraisal of the EIA reports shall constitute one of the bases for the approval of projects.

Organisations and individuals who manage economic, scientific, technical, health, cultural, social, security and defence establishments that began their operations prior to the promulgation of the Law on Environmental Protection must submit an EIA report on their respective establishments for appraisal by the State management agency for environmental protection. Those who fail to meet the environmental standards set will be given a specified period of time to undertake remedial measures (Art. 17).

Various decrees have been promulgated for the implementation of the Law on Environmental Protection, among them Government Decree No. 175/CP, *Providing Guidance for the Implementation of the Law on Environmental Protection*, dated 18 October 1994. Chapter III of this Decree contains requirements for the submission of EIAs by investors and enterprises.

### THE USE OF MARKET-BASED INSTRUMENTS

So far, Vietnam is not yet utilising any MBIs in the protection of the environment. However, in discussions on ratification and implementation of marine pollution conventions, Vietnam has indicated interest in sustainable financing mechanisms.

There are indications that the MOSTE is planning to introduce economic

mechanisms to promote compliance with environmental protection laws. Specifically, the MOSTE is considering a pollution tax regulation on pollutive practices and subsidies or reduced taxes for clean technology.

## NATIONAL LEGISLATIVE/REGULATORY STRUCTURE AND PROCEDURES ON MARINE POLLUTION

### *Legislative Mechanisms*

Vietnam is a socialist republic. The National Assembly is the supreme organ of the State. Its members are elected for a five-year term by universal adult suffrage. The Head of State is the President who is elected by the National Assembly from among its members. The President appoints a Prime Minister from among the members of the National Assembly subject to the latter's approval. The Prime Minister forms a government, subject to ratification by the National Assembly. On the local level, the country is divided into provinces and municipalities, which are governed by locally elected People's Councils.

The National Assembly may abrogate all written documents issued by any office or official, from the President down, which is contrary to the Constitution, the law, or its resolutions. The National Assembly also has the power to ratify or refuse ratification of international agreements entered into by the country's President.

The National Assembly alone can amend the Constitution or pass laws, but the Government may issue "resolutions and decrees". The Prime Minister may issue "decisions and directives", while the Ministers and heads of agencies may issue "decisions, directives and circulars". At each level, the issuance must be in accordance with the Constitution and the issuances of the higher offices.

### *Distribution of Mandates and Obligations*

The MOSTE is the government body responsible for State management on a nation-wide level of science, technology and the environment. The National Environmental Agency (NEA) within the MOSTE is responsible for formulating policies, strategies and regulations for environmental protection and sustainable development, including the NPESD, as well as for monitoring their implementation. The NEA's responsibilities include the control of pollutants, the management of domestic, agricultural and industrial waste and the management of the national monitoring system, EIA and programs to increase environmental awareness.

At the provincial level, the authority responsible for environmental protection is the Department of Science, Technology and Environment (DOSTE), of which there is one

for each of Vietnam's provinces.

A marine environment monitoring system has been established and approved by MOSTE and the Government. Within the monitoring system, the first Marine Environmental Monitoring Station (MEMS) was established in 1995 at Do Son near Hai Phong. In 1996, the monitoring system will be continuously expanded to cover all coastal and marine waters of Vietnam. The tasks of the monitoring stations include the following: (1) to conduct coastal and environmental monitoring activities in the Gulf of Tonkin and its western coast; (2) to inform the NEA or MOSTE about the occurrence of oil spills for emergency response; (3) to submit annual reports on the monitoring results to MOSTE and to participate in the preparation of the *"Annual Report on the State of the Marine Environment in Vietnam"*; and (4) to train in technical skills in marine environmental protection according to a plan developed by the NEA.

All ministries, ministry-level agencies and other governmental bodies are mandated, within the scope of their respective powers, functions and responsibilities, to co-operate with the MOSTE in carrying out environmental protection within their sectors and in establishments under their direct supervision.

The People's Committees of provinces and cities directly under the Central Government shall exercise their State management function for environmental protection at the local level. The DOSTEs are responsible to the People's Committees of provinces and cities directly under the Central Government for environmental protection in their localities.

The Ministry of Construction is responsible for, among other things, implementing infrastructure activities such as water supply and sewer systems. Its National Institute for Urban and Industrial Projects will implement the NPESD in areas of pollution prevention and control.

The Ministry of Health implements an environmental health programme which includes environmental protection measures to cope with pollution problems and measures to improve water supply and sanitation facilities.

The State Planning Committee is responsible for planning and co-ordinating domestic investments and external assistance. It is also the focal point for GEF programmes in Vietnam.

The Ministry of Transport, Telecommunications and Post (MOTTP) has the duty and responsibility for marine transportation. Under the Ministry are the Vietnam National Maritime Bureau (VINAMARINE) and the Vietnam Register of Shipping (VIRES).

The VINAMARINE, the Vietnam maritime administrator, reports to the MOT. The VINAMARINE has the following duties and powers, among others: (1) to work out strategies, programmes, five-year and long-term plans for the development of the Vietnamese shipping industry, to be presented to the Minister of Transport for consideration and thereafter to the Prime Minister for approval; (2) to draft laws, ordinances, under-law circulars, regulations, policies, rules of management, procedures and legal norms on maritime activities and submit them to the Minister of Transport for decision or for submission to the Government, and to proclaim the circulars giving guidelines on their implementation; and (3) to carry out international co-operation in shipping, to propose to the Minister of Transport and to the Prime Minister whether or not to join international conventions or to sign shipping pacts and protocols, and under the authorisation of the Prime Minister or the Minister, to sign shipping agreements with foreign countries and to join international shipping organisations and conventions. The VINAMARINE also has the duty and responsibility to communicate with the IMO.

Under the VINAMARINE, the port authorities are responsible for the implementation of and compliance with regulations relating to safety of navigation, environment pollution prevention and marine sanitation.

The VIRES is the state body that carries out technical supervision, classification, tonnage measurement, safety and quality certification of ships and offshore installations under the requirements of national law and international conventions to which Vietnam is a party. The VIRES supervises ships to ensure that they comply with rules and international conventions. It also drafts regulations to ensure safe navigation of ships and carriage of good and issues International Oil Pollution Prevention Certificates. The VIRES determines the technical standards -- which may be TCVNs or standards and regulations applied in the transport sector only (TCNs) -- that are issued by the MOT. The MOSTE Minister's Decision No. 2920/QD-MTg of December 21, 1996 calls for the application of TCVNs to the environment.

***Public Participation***

Article 53 of the Constitution provides that the citizen has the right "to participate in the administration of the State and management of society, the discussion of problems of the country and the region". Articles 39 to 41 of the Law on the Promulgation of Legal Documents are about soliciting public comments on bills and draft ordinances. The Standing Committee of the National Assembly decides whether or not to solicit public comments depending on the nature and content of the bill or draft ordinance, and controls the contents of the material to be presented to the public, as well as the scope, mode and time for soliciting public comments. Citizens may also send their comments either through their agencies or by mail. The agency or organisation submitting the draft or the

National Assembly then co-ordinates with the evaluating agency in studying and accepting the public comments and revising the draft accordingly. The evaluating agency is determined by the National Assembly for every bill or draft ordinance. It is the evaluating agency's responsibility to determine, among other things, the necessity, conformity with party lines, policies, Constitution and laws, procedure and order and feasibility of the comments submitted by the public.

A law that specifically provides for public participation is the Ordinance on Mineral Resources, which declares in Article 9 that State bodies shall, in accordance with their powers and obligations, be responsible for giving full consideration to the recommendations of social organisations and individuals made in relation to the implementation of measures for the management and protection of mineral resources and the surrounding environment.

## INTERNATIONAL CONVENTIONS AND INITIATIVES

The *Ordinance on the Conclusion and Implementation of International Treaties* (1993) contains provisions on the power to prepare, negotiate, sign and ratify international treaties. Article 6 of the Ordinance is on the respective responsibilities of the President of the Council of State, the President of the Council of Ministers and the Minister of Foreign Affairs to negotiate and sign international conventions. Article 7 provides for the ratification of these conventions. Article 11 affirms that "(t)he Socialist Republic of Vietnam faithfully observes the international treaties it has concluded and expects other parties to do the same."

Under this Ordinance, the Council of Ministers is charged with the implementation of conventions and, in this regard, is assisted by the Ministry of Foreign Affairs. The responsibility of complying with convention obligations lies with the relevant Ministries.

The Ordinance also provides a mechanism for the amendment, modification, or promulgation of a law to give effect to international conventions. Article 11(6) provides:

> Should the implementation of an international treaty necessitate an amendment to, modification or promulgation of a normative act of law of the Socialist Republic of Vietnam, the Ministerial Authority is under an obligation to co-operate with the Ministry of Justice in submitting recommendations to that effect.

Vietnam has ratified UNCLOS, MARPOL 73/78 (Annexes I and II) and the Basel Convention. There is a current effort to ratify OPRC, the London Convention 1992, CLC 1992 and FUND 1992 and to implement MARPOL 73/78.

In October 1998, a workshop that considered the legal, economic and technical issues of implementing international environmental treaties related to marine pollution, transboundary transportation and disposal of hazardous wastes and climate change was held in Hanoi. The workshop focused on the legal, economic and technical aspects of protecting Vietnam's marine and coastal environments in the context of international treaties to which Vietnam is a signatory. It also examined three conventions that might be advantageous for Vietnam to sign, i.e., the London Convention 1972, CLC 1992 and FUND 1992. In accordance with the Vietnam-Canada Ocean Co-operation Programme (VCOP), two national workshops on the possibilities of ratification by Vietnam of these conventions were organised.

***Specific Instruments Implemented***

In 1991, Vietnam ratified MARPOL 73/78. Despite ratification, implementing national legislation has been slow to develop. However, there is currently a sincere effort to pass the necessary legislation.

The Maritime Code is on the National Assembly's agenda for revision, and some general provisions on the implementation of MARPOL 73/78 are expected to be incorporated therein. It is expected that regulations for said Code will be issued by the Prime Minister. The technical requirements for ships will be specified in TCVNs to be issued by the Minister of Transport through the VIRES.

At present, Vietnamese ships on international routes have by necessity a better rate of compliance than ships on domestic routes. The Vietnamese authorities expect that getting the domestic vessels into compliance will be difficult.

With regard to Annex II of MARPOL, there is no full implementation as yet. Vietnamese authorities have identified the need for: (a) a better technical understanding of the application of the Annex; and (b) planning for future implementation. At present, there is little traffic in the substances covered by Annex II. Annexes IV and V as well will be difficult to implement, which is probably why they are not yet being considered for ratification soon.

A concern in Vietnam is that several ports with heavy transhipment traffic are located in environmentally sensitive areas such as Ha Long Bay and Vung Tau. Regulatory instruments to protect those environments have only recently been passed. There are a number of other areas of this nature for which there are no current regulations. Many of them are also important tourist and fishing areas. Co-ordination between the maritime and environmental sectors of government is needed in this regard. It is of interest to note that under the standards currently being proposed, special standards for discharge of oil have to be observed in Ho Chi Minh City (6 parts per

million [PPM]) and Ha Long Bay (10 PPM).

In 1992, the port authority of Hai Phong issued *"Regulations for the protection of the environment in the maritime water area and the port water area of Hai Phong"* which prohibit the discharge of all types of wastes from ships in the maritime and port areas of Hai Phong. There are no reception facilities for slops and tank wash water in the port of Hai Phong. This port has one berth reserved for dangerous cargo and one oil jetty. Storage areas for dangerous cargo, containment and fire protection are not available. But a collection system for garbage from ships is in place.

Oil spill combating equipment is not available in the port of Hai Phong and its oil jetty. The risk of chemical accidents and oil spills in the port of Hai Phong is increased due to strong currents in the entrance and the river, tropical storms which may cause ships to run aground or founder, lack of special training for personnel involved in monitoring and handling dangerous cargo and inadequate emergency response procedures and accident prevention infrastructure for oil and chemical spills.

The oil company VIETSOVPETRO, which conducts offshore oil and gas exploration and production in Vietnam, has a small oil spill response team located onshore near Ho Chi Minh City. However, there is a lack of experience in oil spill mitigation and response.

The MOSTE, in co-operation with the Swedish International Development Agency, is currently developing a national oil spill contingency plan. Oil companies co-operate with the Vietnam Marine University to provide seminars on oil pollution prevention and combating. Training on emergency response and procedures for chemical spills is not available.

The NEA has documented oil spills since 1989, from which time they have documented more than 14 major oil spill accidents causing considerable damage to the marine environment. Recently, Vietnam (represented by the NEA) was able to collect compensation for the damage suffered from three of these accidents. This was accomplished after intense negotiations with the Protection and Indemnity (P&I) clubs involved. However, as the oil and oil transporting industries grow, better liability and compensation systems are needed. It is for this reason that a decision to accede to CLC 1992 and FUND 1992 has been made. The concerned agencies are carefully studying the treaties for a sufficient understanding of their requirements.

Although Vietnam has not yet ratified the London Convention 1972, reportedly there are regulations prohibiting the dumping of waste into the sea, which are being

implemented.

Vietnam is also a party to the Basel Convention but at present, no legislation exists for the implementation of this Convention. Article 29(6) of the Law on Environmental Protection does prohibit the importation of hazardous wastes into Vietnam, but there are still no implementing laws on the transport, storage and disposal of hazardous substances.

***Reasons for Non-ratification or Non-implementation of Conventions***

It cannot be said that Vietnam lacks legal documents for the prevention and control of pollution and the preservation of the marine environment. However, like other developing countries, Vietnam is confronted with two big problems: insufficient data for a precise assessment of the pollution situation in the marine environment and insufficient sub-law documents guiding the implementation of the relevant laws. The existing legal documents of Vietnam on such an interdisciplinary and diverse concern as the marine environment lack harmony and comprehensives. In addition, many areas of marine environmental protection have not yet been covered by Vietnamese legislation such as ocean dumping and liability in case of oil casualties.

Vietnamese industries are at an early stage of development and have limited resources to be equipped to mitigate the environmental impacts of their activities. The priority of the Government is improving the economy of Vietnam, thus pushing environmental issues to the background.

There is little incentive for domestic industries to meet environmental standards. MBIs to encourage environment friendly practices are not yet utilised in Vietnam. It can even be said that one of Vietnam's key attractions to foreign investment in industries may be its relatively lax environmental standards and lack of capacity to enforce environmental protection legislation.

Conversely, especially obvious to foreign investors or shipping in Vietnam, but felt by all, is the lack of uniformity and consistency in the law and its application. The inconsistent application of the law by judicial and quasi-judicial bodies may be attributed to a general lack of experience and application. Contributing factors are autonomy of local governments, weakness of the judicial system and a general lack of awareness of the importance of a predictable application of laws and regulations. This can only be remedied once Vietnam realises that there is a demand for consistency and reliability in the law and its application.

Local governments in Vietnam have considerable powers, resulting in overlapping jurisdictions between central and provincial authorities and different standards or

regulations in different jurisdictions within Vietnam. The problem can be felt within MOSTE itself. The provincial DOSTEs report to the central office only for administrative and technical guidance. The hiring, firing, and paying of the staff at the local DOSTE offices are done by the provincial government. Furthermore, the co-ordination between marine and environmental agencies at the local level is at an even lower rate than among the national agencies.

At the national level, implementation of conventions is constrained by the number of government agencies having jurisdiction over the marine environment. MOSTE, the Ministry of Agriculture, the Ministry of Industry, the Ministry of Construction and the MOT, among other agencies, are involved in one way or another with environmental issues. For example, although the MOSTE is responsible for State management of the environment, it is the MOT, through the VINAMARINE and port authorities, which is responsible for the implementation of regulations relating to marine environment pollution prevention and marine sanitation. There is also some confusion between VINAMARINE and VIRES over the implementation of MARPOL, because although VIRES sets the technical standards, the powers to inspect and detain ships belong to safety officers and port officials, who are under VINAMARINE.

At present, the action plan for the ratification and implementation of the different international conventions on marine pollution is developed, implemented and evaluated by consensus of the agencies involved.

Vietnam has a large bureaucracy with a multiplicity of implementing agencies. The legislative system, with many hierarchical levels and types of laws, is complicated enough to warrant passage of a law to clarify the requirements of each type and level of legislation, as well as the authority to issue them. This is the Law on the Promulgation of Documents, passed by the National Assembly in November 1996. The National Assembly convenes briefly twice a year, and therefore the time to consider and pass laws is limited. Both at the national and local level, agencies will have to realise that some amount of co-ordination is necessary to be able to achieve the objectives of protecting the marine environment.

Capacity building activities, which come with foreign-supported projects, have also contributed and will continue to contribute to some changes. In the maritime and environmental sector, there are a number of such initiatives. It can be said however, that the maritime agencies have a good understanding of the technical issues. It is in the enforcement that logistical and bureaucratic constraints, among other things, pose difficulties.

## ASSESSMENT OF THE COUNTRY'S NEEDS IN CAPACITY-BUILDING FOR LEGISLATION AND RATIFICATION OF INTERNATIONAL CONVENTIONS ON MARINE POLLUTION

Implementation of and compliance with environmental legislation in the marine sector suffer from conflicting economic interests and the lack of an institutional set-up for monitoring and enforcement.

The capacity of the relevant Vietnamese authorities to regulate and monitor environmental pollution is minimal and inadequate. The disposal of waste is largely unregulated. Improvements in the waste collection system cannot be financed by the end users that have little economic capacity to pay for waste collection. There is a general lack of analytical laboratory capability and reliable water quality data in Vietnam. Certainly, one problem is funding for infrastructure such as reception facilities and equipment.

Environmental education has recently developed through traditional educational curricula and the development of textbooks. Publications and seminars have promoted awareness for coastal zone management. International studies on issues related to the protection of the marine environment in Vietnam include the VCOP, a project with assistance from the Netherlands on lagoon management, a master plan for the coastal zone of central Vietnam in co-operation with France and a management plan within the United Nations Environment Programme-Regional Seas Programme on the coastal environment in relation to watershed management (EAS-35).

Among the recommendations of the NPESD for waste management are: (1) promotion of waste minimisation, waste exchange and recycling; (2) development of treatment and disposal systems for municipal solid waste and sewage; (3) development of a waste management plan for Hanoi, including improvement of collection, transportation and disposal of all sludge and rehabilitation of ponds and canals to improve the hydraulic capacity of these systems for drainage and wastewater discharges; (4) development of alternatives and alternative methods for industries currently generating hazardous substances; (5) development of regulations pertaining to the storage, transportation, handling and use of toxic chemicals and hazardous substances; (6) establishment of a national registry of potentially toxic chemicals and hazardous substances and information and technology transfer on environmentally safe management of these substances; and (7) establishment of standards on industrial pollution, especially regarding smokestack emissions and effluent discharges.

The short-term actions proposed for the ratification of international conventions on marine pollution include:

- drafting MARPOL 73/78 implementing regulations;

- legislation to identify roles and responsibilities of national and local authorities and line agencies;

- identification of training opportunities;

- development of a project proposal on cost-effective shore reception facilities, including a national fee system;

- review of the legal mechanisms needed for the ratification and implementation of CLC 1992 and FUND 1992;

- developing an action plan towards ratification and implementation of the London Convention 1992; and

- development of a project to strengthen capacity of local governments to manage coastal and marine areas, including integrated waste management.

The Vietnamese are sincere in their wish to progress in the realm of ocean management. However, they are burdened by bureaucracy and a lack of resources.

It will take time, patience and international and regional support to reach an acceptable level of implementation.

The formulation of implementing rules and regulations and the setting up of environmental standards, for which the acquisition of technical expertise is necessary are of immediate importance. Certainly, the encouragement of public awareness of environmental issues and problems and the active participation of all sectors, including the NGOs, would benefit the country in general.

# References


**CAMBODIA**

Far Eastern Economic Review. 1996. Asia 1996 Yearbook. Hongkong.

Far Eastern Economic Review. 1997. Asia 1997 Yearbook. Hongkong.

MPP-EAS. 1996. Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1996. Proceedings of the IMO/APCEL/MPA workshop on the ratification and implementation of MARPOL 73/78 in the East Asian Seas. MPP-EAS Workshop Proceedings 3, 107 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

**CHINA**

China amends marine environment law. 07/07/1999. Asia Pulse Pte Limited.

Fan, Z.J. 1989. Marine pollution legislation in China: Retrospect and prospect. *In* Mare. Pol. Bulletin 20 (7): 333.

Far Eastern Economic Review. 1996. Asia 1996 Yearbook. Hongkong.

Far Eastern Economic Review. 1997. Asia 1997 Yearbook. Hongkong.

ITTXDP (Integrated Task Team of the Xiamen Demonstration Project). 1996. The coastal environmental profile of Xiamen. MPP-EAS Technical Report 6, 110 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

ITTXDP (Integrated Task Team of the Xiamen Demonstration Project). 1996. Strategic Management Plan for Marine Pollution Prevention and Management in Xiamen. MPP-EAS Technical Report 7, 60 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas. Quezon City, Philippines.

Jin, R.L. and Z.K. Cheng. 1988. People's Republic of China. *In* International Handbook of Pollution Control, E.J. Kormondy (ed.). Greenwood Press, Connecticut, USA.

Marine Pollution Updates II(1). March 1996. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas. Quezon City, Philippines.

MPP-EAS. 1996. Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1998. Strengthening regulation on the management of Xiamen's coastal zone: Terminal report (Xiamen demonstration project). GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas (unpublished).

Yu, H. 1995. Like the warm glow of charcoal on a wintry day: the Xiamen demonstration project. Tropical Coasts 2(1): 19.

**INDONESIA**

Arifin, K.B. 1996. Indonesian country report on protection of the ocean (Implementation of Agenda 21, Chapter 17) (unpublished).

BAPEDAL. 1994. Compliance, capacity expansion, public participation: Strategic directions 1994-1998. *Bandang Pengendalian Dampak Lingkungan* (Environmental Impact Management Agency), Jakarta, Indonesia.

Bernama-Kyodo. 1996. 115 Indonesian companies dump waste into rivers - Agency. Chambers World Network International Ltd. Asia Intelligence Wire Bernama 31/10/96.

Boelart-Suominen, S. 1993. Legal and institutional aspects of integrated coastal zone management in national legislation. RAS/92/G32, Food and Agriculture Organization (FAO) (draft).

Day, S. 1996. Suburban sprawl or suburban villages? Defining planning principles for new land development in Indonesia. *In* Pacific Rim Law and Policy Journal 5(2): 331. Seattle, USA.

Directorate General of Marine Safety (Indonesia). 1996. Information on oil spill contingency plan and regional cooperation (unpublished paper).

Far Eastern Economic Review. 1996. Asia 1996 Yearbook. Hongkong.

Far Eastern Economic Review. 1997. Asia 1997 Yearbook. Hongkong.

Government of the Republic of Indonesia website.

Ministry of State for Population and Environment (Indonesia). 1992. Marine resources management and sustainable development in Indonesia. (Unpublished paper prepared for the Regional Working Group on Marine Environment and Oceanographic Studies, Guangzhou, People's Republic of China).

MPP-EAS. 1996. Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1996. Proceedings of the IMO/APCEL/MPA workshop on the ratification and implementation of MARPOL 73/78 in the East Asian Seas. MPP-EAS Workshop Proceedings 3, 107 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1998. Proceedings of the national workshop on the implementation of MARPOL 73/78 in Indonesia: Cost-effective shore reception facilities. MPP-EAS Workshop Proceedings 11, 66 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

Hardjasoemantri, K. 1994. Environmental legislation in Indonesia. Gadjah Mada University Press, Yogyakarta, Indonesia.

Hardjosoemantri, K. 1990. Problem of land-based pollution in Southeast Asia. SEAPOL International Conference on the Implementation of the Law of the Sea Convention in the 1990's: Marine Environment Protection and Other Issues, p. 248. Center for Archipelago, Law and Development Studies, Bangkok, Thailand.

Khalid Bafana, S. H. 1997. Environmental law in Indonesia: An analysis of enforcement mechanisms. Directed Independent Research paper in part fulfillment of Ll.B. requirements, Faculty of Law, National University of Singapore.

Safety of Navigation: Designation of certain sea lanes and air routes thereabove through Indonesian archipelagic waters: Note by Indonesia (IMO document MSC 67/7/2). 1996.

USAID. 1994. A Preliminary Analysis of Policies, Programs, Regulations and Initiatives in Regard to Industrial Pollution Prevention in ASEAN. The ASEAN Environmental Improvement Project, US Agency for International Development, Manila, Philippines.

**MALAYSIA**

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1994. Environmental impact assessment (EIA): Procedure and requirements in Malaysia. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1995. Environmental impact assessment guidelines for development of tourist and recreational facilities on national parks. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1995. Environmental impact assessment guidelines for toxic and hazardous waste treatment and disposal projects. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1994. Guidelines for the siting and zoning of industries. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1993. Environmental quality report 1992. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1994. Environmental quality report 1993. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1995. Environmental quality report 1994. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1992. Environmental quality report 1991. Kuala Lumpur, Malaysia.

Department of Environment, Ministry of Science, Technology and Environment (Malaysia). 1996. Impak, vol. 1. Kuala Lumpur, Malaysia.

Far Eastern Economic Review. 1996. Asia 1996 Yearbook. Hongkong.

Far Eastern Economic Review. 1997. Asia 1997 Yearbook. Hongkong.

Maritime Institute of Malaysia. 1996. The MIMA Bulletin 3(1). Kuala Lumpur, Malaysia.

Maritime Institute of Malaysia. 1995. The MIMA Bulletin 2(2). Kuala Lumpur, Malaysia.

Maritime Institute of Malaysia. 1994. The MIMA Bulletin 1(2). Kuala Lumpur, Malaysia.

MPP-EAS. 1996. Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

Ong, A. Curbing pollution in Malaysia waters. Southeast Asia Business Time (Malaysia) 13/3/97 P1.

USAID. 1994. A Preliminary Analysis of Policies, Programs, Regulations and Initiatives in Regard to Industrial Pollution Prevention in ASEAN. The ASEAN Environmental Improvement Project, US Agency for International Development, Manila, Philippines.

**PHILIPPINES**

Far Eastern Economic Review. 1996. Asia 1996 Yearbook. Hongkong.

Far Eastern Economic Review. 1997. Asia 1997 Yearbook. Hongkong.

MPP-EAS. 1996. Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1996. Proceedings of the IMO/APCEL/MPA workshop on the ratification and implementation of MARPOL 73/78 in the East Asian Seas. MPP-EAS Workshop Proceedings 3, 107 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1997. Proceedings of the national workshop on the ratification and implementation of MARPOL 73/78 in the Philippines. MPP-EAS Workshop Proceedings 8, 51 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

USAID. 1994. A Preliminary Analysis of Policies, Programs, Regulations and Initiatives in Regard to Industrial Pollution Prevention in ASEAN. The ASEAN Environmental Improvement Project, US Agency for International Development, Manila, Philippines.

**REPUBLIC OF KOREA**

Hong, S. Y. and Y. T. Chang. 1997. Integrated coastal management and the advent of new ocean governance in Korea: Strategies for increasing the probability of success. The International Journal of Marine and Coastal Law 12(2): 141-161.

Hong, S. Y. and J. H. Lee 1995. National level implementation of chapter 17: the Korean example. Special issue, Earth Summit implementation: Progress achieved on oceans and coasts. Ocean & Coastal Management 29: 231-249.

Korea Legislation Research Institute, 1998. Statutes of the Republic of Korea.

Kwon, M.S., 1996. Marine pollution legislation in the Republic of Korea. *In:* Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

Lee, S. D., 1991. National legislations for marine environmental protection: The Korean experience, presented at The International Conference on Maritime Issues in the 1990's: Antarctica, Law of the Sea, and Marine Environment, Seoul, July 9-10, 1991.

Ministry of Construction and Transportation, 1996. National coastal zone assessment project- formulating institutional mechanism of integrated coastal management. Seoul, Korea.

Ministry of Environment, 1991. National report of the republic of Korea to UNCED 1992. Seoul, Korea.

Ministry of Environment, 1997. Environment White Paper. Seoul, Korea.

Ministry of Maritime Affairs and Fisheries, 1998. Maritime Affairs and Fisheries white paper (1993-1997). Seoul, Korea.

**SINGAPORE**

Alam, Z. 1997. Singapore experience in implementing international conventions on the protection of the marine environment. IUCN/APCEL/UNEP Course on Capacity Building for Environmental Legal Education in the Asia-Pacific Region, 9 June-4 July 1997. Singapore.

Boer, B., R. Ramsay and D. Rothwell. 1998. International environmental law in the Asia Pacific. Kluwer Law International, The Hague.

Briffett, C. and M. Lee. 1992. The case for environmental impact assessment in Singapore. *In:* Infrastructure: Impact on development and environment. The 1992 Convention of the Institute of Engineers. May 28-30, 1992. Singapore.

Chia, L.S. 1997. Experience of a small island state in siting industrial plants and pollutive facilities. The International Journal of Marine and Coastal Law 12(2): 245-263.

ENV. 1987. Clean rivers. The cleaning up of Singapore River and the Kallang Basin. Ministry of Environment, Singapore.

Koh, K.L. 1996. Selected ASEAN documents on the environment. APCEL Document Series, Issue No. 1, July 1996. Asia-Pacific Centre for Environmental Law, Singapore.

Lim, C.A.C. 1994. Environmental protection of the seas in Singapore. Singapore Journal of Legal Studies. [1994] 52-90.

MPA. 1996. Inaugural annual report 1996. Maritime and Ports Authority of Singapore.

MPA. 1997a. Statistics downloaded from the MPA website: http://www.mpa.gov.sg

MPA. 1997b. Singapore accedes to the protocol of 1992 to the International Convention on Civil Liability for Oil Pollution Damage, 1969. Nautilus: The corporate newsletter of the MPA of Singapore. May-Dec 1997.

MPA. 1998a. Singapore accedes to the Protocol of 1992 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971. Nautilus: The corporate newsletter of the MPA of Singapore. Jan-Mar. 1998.

MPA. 1998b. Singapore is re-elected as IMO Council member. Nautilus: The corporate newsletter of the MPA of Singapore. Jan-Mar. 1998.

MPA. 1998c. Special feature: The Evoikos oil spill experience. Nautilus: The corporate newsletter of the MPA of Singapore. Jan-Mar. 1998

MPA. 1998d. Personal communication with Zafrul Alam, Assistant Director (Special Projects), Policy Division, MPA.

MPP-EAS. 1997. Ratification of international conventions relating to marine pollution in East Asia. Marine Pollution Updates III(2):2.

Ng, P.S. (ed). 1997. Singapore facts and pictures 1997. Ministry of Information and the Arts, Singapore.

Tan, A.K.J. 1996. Country report on marine pollution legislation and implementation. *In* Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

USAID. 1994. A Preliminary Analysis of Policies, Programs, Regulations and Initiatives in Regard to Industrial Pollution Prevention in ASEAN. The ASEAN Environmental Improvement Project, US Agency for International Development, Manila, Philippines.

**THAILAND**

Boelart-Suominen, S. 1993. Legal and institutional aspects of integrated coastal zone management in national legislation. RAS/92/G32, Food and Agriculture Organization (FAO) (draft).

Challis, N. 1997. The establishment of a MARPOL waste oil reception facility for Bangkok and the ports of the eastern seaboard of Thailand: Public sector - private sector partnership for marine pollution prevention, p. 314. *In* S. Adrian Ross, C. Tejam and R. Rosales (eds.). Sustainable financing mechanisms: public sector - private sector partnerships. MPP-EAS Conference Proceedings 6, 352 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

Chumporn P. 1990. Thailand and the sea law implementation: Marine environment protection. SEAPOL International Conference on the Implementation of the Law of the Sea Convention in the 1990's: Marine Environment Protection, p. 478. Center for Archipelago, Law and Development Studies, Bandung, Indonesia.

Donaldson, J. 1995. The USAID/URI Thailand coastal resources management project: A review. *In* ESCAP/ADB/UNEP Workshop on Coastal and Marine Environmental Management. Asian Development Bank, Manila, Philippines.

Far Eastern Economic Review. 1996. Asia 1996 Yearbook. Hongkong.

Far Eastern Economic Review. 1997. Asia 1997 Yearbook. Hongkong

International Maritime Organization. 1995. Global waste survey: Final report. Manila, Philippines.

Kriangsak, K. 1990. Semi-enclosed Southeast Asian Seas regime building. SEAPOL International Conference on the Implementation of the Law of the Sea Convention in the 1990's: Marine Environment Protection and Other Issues, p. 501. Center for Archipelago, Law and Development Studies, Bandung, Indonesia.

McDorman, T. L. 1985. Thailand and the 1982 Law of the Sea Convention. Marine Policy, p. 292.

Ministry of Science, Technology and Environment. 1997. Thailand's action for sustainable development (Thailand's Country Report to UN Commission on Sustainable Development). Bangkok, Thailand.

MPP-EAS. 1996. Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

Pollution Control Department. 1994. Laws and standards on pollution control in Thailand (3rd ed.). Bangkok, Thailand.

Tasneeyanond, P. and S. Rubthong. 1991. Legal and institutional issues affecting the management of Thailand's coastal region: A case study of Phuket Province. (Place of publication unknown.)

Thailand to join conventions on oil slick damage. 1996. Southeast Asia Bangkok Post 28/6/96, p.2.

USAID. 1994. A Preliminary Analysis of Policies, Programs, Regulations and Initiatives in Regard to Industrial Pollution Prevention in ASEAN. The ASEAN Environmental Improvement Project, US Agency for International Development, Manila, Philippines.

Water Quality Management Division, Pollution Control Department (Thailand). 1994. Summary of the pollution control regulations from "Enhancement and Conservation of the National Environmental Quality Act, B.E. 2535". Pollution Control Department, Bangkok, Thailand.

**VIETNAM**

Boer, B. and D.R. Rothwell. Date unknown. Accession to and implementation of international conventions for Vietnam. Ministry of Science, Technology and the Environment (Vietnam), the World Conservation Union (IUCN) (unpublished).

Far Eastern Economic Review. 1996. Asia 1996 Yearbook. Hongkong.

Far Eastern Economic Review. 1997. Asia 1997 Yearbook. Hongkong.

Kirk, E. and J. Tolland 1995. Marine pollution from land-based sources: Relevant international law, comparative legislative regimes, current Viet Namese legislation and an action plan for Viet Nam. Vietnam-Canada Ocean and Coastal Cooperation Project (VCOP) (unpublished).

MPP-EAS. 1996. Regional network on the legal aspects of marine pollution: Inception workshop. MPP-EAS Workshop Proceeding 1, 144 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1996. Proceedings of the IMO/APCEL/MPA workshop on the ratification and implementation of MARPOL 73/78 in the East Asian Seas. MPP-EAS Workshop Proceedings 3, 107 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

MPP-EAS. 1997. Proceedings of the National Workshop on IMO Conventions for the Prevention and Management of Marine Pollution. MPP-EAS Workshop Proceedings 7, 50 p. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines.

National Environment Agency (Vietnam). 1997. Working together to make it work. National Oil Contingency Plan Workshop, Vietnam. National Environment Agency, Hanoi, Vietnam.

Nguyen, N.S. and Hua, C.T., Date unknown. Oil spill and oil pollution in Vietnam (unpublished paper).

Nguyen T.N.M. 1997. International compensation fund: A case study of Vietnamese legal regime. Paper presented at the Workshop on CLC and FUND, Ministry of Transport, Hanoi, Vietnam (unpublished).

# Appendix 2: National Legislation Relating to Marine Pollution in East Asia

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | **Cambodia** | **China** | **Indonesia** |
| **Framework Environmental Law** | Law on Environmental Protection and Natural Resource Management, 1996 | Environmental Protection Law, 1989 | Basic Provisions for the Management of the Living Environment Act, 1997 |
| **Other Environmental Legislation** | Law of Land Management of Urbanization and Construction, 1993 | | Spatial Use Management Act, 1992; Natural Resources and Ecosystem Conservation Act, 1990 |
| **Environmental Impact Assessment (EIA)** | | Environmental Protection Law, 1989; specific laws, e.g., Management Measures for Certification of Environmental Impact Assessment of Construction Projects | Environmental Impact Assessment Regulation, 1993 |
| **General Law on Pollution** | | | Circular on the Procedure to Minimize Environmental Pollution and Destruction, 1987 |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | **Malaysia** | **Philippines** | **Republic of Korea** |
| **Framework Environmental Law** | Environmental Quality Act, 1974, as amended in 1996 | Philippine Environmental Policy, 1977 and Philippine Environment Code, 1977 | Framework Act on Environmental Policy, 1990 |
| **Other Environmental Legislation** | | National Integrated Protected Areas System Act, 1992 | Natural Environment Conservation Act |
| **Environmental Impact Assessment (EIA)** | Environmental Impact Assessment Order, 1987 | Presidential Decree Establishing an Environmental Impact Statement System, 1978; Rules and Regulations for the Environmental Impact Statement System, 1996 | Environmental Impact Assessment Act, 1993 and its Presidential Decree |
| **General Law on Pollution** | | National Pollution Control Decree of 1976 | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Singapore | Thailand | Vietnam |
| **Framework Environmental Law** | | Enhancement and Conservation of National Environmental Quality Act, 1992 | Law on Environmental Protection, 1994 |
| **Other Environmental Legislation** | Environmental Public Health Act, 1987 | | |
| **Environmental Impact Assessment (EIA)** | | Notifications of the Ministry of Science, Technology and Environment specifying types and sizes of projects and activities, 1993 | Decree Providing Guidance for the Implementation of the Law on Environmental Protection, 1994 (Chapter 3 on Assessment of Environmental Impact) |
| **General Law on Pollution** | | | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Cambodia | China | Indonesia |
| **General Law on Marine Pollution** | | Marine Environmental Protection Law, 1983 | |
| **Specific Laws on Marine Pollution** | | | |
| **Sea-Based Sources** | | | Indonesian Exclusive Economic Zone Act, 1983 |
| ***Navigation/ maritime/shipping*** | Sub-decree on Harbour Rules for Foreign Ships, 1983 | Marine Environmental Protection Law, 1983; Regulations on Prevention of Pollution of Sea Areas by Vessels, 1983; Regulations Concerning Dumping of Wastes into the Sea by Vessels, 1983 | Navigation Act, 1992; Decree on Oil Pollution Certificate and Noxious Liquid Substances Certificate, 1986 |
| ***Exclusive Economic Zone*** | | | Indonesian Exclusive Economic Zone Act, 1983 |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Malaysia | Philippines | Republic of Korea |
| **General Law on Marine Pollution** | | Marine Pollution Decree, 1974, as amended in 1976 | Prevention of Marine Pollution Act, 1991 |
| **Specific Laws on Marine Pollution** | | | |
| **Sea-Based Sources** | | Revised Coast Guard Law, 1974 | |
| ***Navigation/ maritime/shipping*** | Merchant Shipping (Oil Pollution) Act, 1994; Merchant Shipping Ordinance (Part VA on Pollution from Ships) | Philippine Coast Guard Memorandum Circular on the Prevention, Containment, Abatement and Control of Marine Pollution, 1994 | Prevention of Marine Pollution Act, 1991; Compensation for Oil Pollution Damage Guarantee Act |
| ***Exclusive Economic Zone*** | Exclusive Economic Zone Act, 1984 | | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | **Singapore** | **Thailand** | **Vietnam** |
| **General Law on Marine Pollution** | Prevention of Pollution of the Sea Act, 1990 | | |
| **Specific Laws on Marine Pollution** | | | |
| **Sea-Based Sources** | | | |
| ***Navigation/ maritime/shipping*** | Prevention of Pollution of the Sea Act, 1990; Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act, 1998 | Navigation in Thai Waters Act, 1914, as amended in 1972 | Maritime Code, 1990; Regulations for Foreign Ships Operating in Maritime Zones of Vietnam, 1980 |
| ***Exclusive Economic Zone*** | | Royal Proclamation Establishing the Exclusive Economic Zone of the Kingdom of Thailand, 1981 | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Cambodia | China | Indonesia |
| ***Continental shelf*** | | Regulations on Environmental Protection in Offshore Oil Exploration and Exploitation, 1983; Regulations on the Exploitation of Offshore Petroleum Resources in Cooperation with Foreign Enterprises | Indonesia's Continental Shelf Act, 1973 |
| ***Fisheries*** | | Fisheries Law, 1986 | Fishery Act, 1985 |
| **Land-Based Sources** | | Regulations on Prevention of Pollution Damage to the Marine Environment by Land-Based Pollution, 1990; by Coastal Construction Projects, 1990 | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Malaysia | Philippines | Republic of Korea |
| ***Continental shelf*** | Continental Shelf Act, 1966; Petroleum Mining Act, 1966 | | |
| ***Fisheries*** | | The Philippine Fisheries Code of 1998 | Fisheries Act |
| **Land-Based Sources** | Prescribed Premises Regulations, 1977, 1978 issued pursuant to the Environmental Quality Act | | Wastes Control Act, 1991, Water Quality Conservation Act, 1990 |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Singapore | Thailand | Vietnam |
| ***Continental shelf*** | | | Petroleum Law |
| ***Fisheries*** | | | |
| **Land-Based Sources** | Water Pollution Control and Drainage Act, 1975 | Public Health Act | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Cambodia | China | Indonesia |
| ***Water pollution*** | | Water Pollution Prevention Law | Regulation on Control of Water Pollution, 1990 |
| ***Toxic and hazardous wastes*** | | Rules for Environmental Management of Chemicals Imported for the First Time and of Imported and Exported Toxic Chemicals and a number of other special rules and circulars | Regulation on Hazardous and Toxic Waste Management, 1994, as amended in 1995 |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Malaysia | Philippines | Republic of Korea |
| ***Water pollution*** | | Water Code, 1976 | Water Quality Conservation Act, 1990 |
| ***Toxic and hazardous wastes*** | Scheduled Wastes Regulations, 1989 and Customs Orders, 1993 | Toxic Substances and Hazardous and Nuclear Wastes Control Act, 1990 | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | **Singapore** | **Thailand** | **Vietnam** |
| ***Water pollution*** | Water Pollution and Drainage Act, 1975 | Underground Water Act, 1977 | Law on Water Resources, 1998; Ordinance on Protection of Aquatic Resources, 1998 |
| ***Toxic and hazardous wastes*** | Hazardous Waste (Control of Export, Import and Transit) Act, 1997 | Toxic and Hazardous Substances Act, 1992 | |



continued

| Types of Legislation | Country | | |
|---|---|---|---|
| | Cambodia | China | Indonesia |
| ***Agricultural wastes*** | | | Decree on Limitation for Pesticide Registration, 1973; Regulation on Control, Distribution, Storage and Use of Pesticides, 1973; Act No. 12/1992 on Horticulture System, regarding Fertilizer and Pesticide Use, plus several decrees of the Ministry of Agriculture |
| ***Mineral wastes*** | | Mineral Resources Law, 1996 | Mining Act, 1967 |



continued

| Types of Legislation | Country | | |
|---|---|---|---|
| | Malaysia | Philippines | Republic of Korea |
| ***Agricultural wastes*** | Prescribed Premises (Crude Palm-Oil) Regulations, 1977, and Order, 1977; Prescribed Premises (Raw Natural Rubber) Regulations, 1978, and Order 1978 | Fertilizer and Pesticide Authority (FPA) Decree (1977); FPA Rules and Regulations on Importation, Manufacture, Formulation, Repacking, Distribution, Delivery, Sale, Storage and Use of Pesticides | |
| ***Mineral wastes*** | | Philippine Mining Act of 1995 and its rules and regulations; Revised Forestry Code of the Philippines, 1975 | |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Singapore | Thailand | Vietnam |
| ***Agricultural wastes*** | | | |
| ***Mineral wastes*** | | Mineral Act, 1967 | Mining Law, 1994, Ordinance on Mineral Resources |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | **Cambodia** | **China** | **Indonesia** |
| ***Sewage/Industrial wastes*** | Regulation (Prakas) prohibiting the discharge of liquid industrial waste and sewage into the sea, rivers and lakes, 1994 | Measures Governing Sewage Treatment Facilities and Environmental Protection and at least seven other administrative regulations | Industry Act, 1984; Decree on Control of Industrial Pollution to the Environment, 1986 |
| ***Others*** | | Regulations on Management of Laying Submarine Cables and Pipelines | Guidelines on Environmental Quality Standards (Coastal Water Quality Standards), 1988 |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | **Malaysia** | **Philippines** | **Republic of Korea** |
| ***Sewage/Industrial wastes*** | Sewage and Industrial Effluents Regulations, 1979; Prohibition on the Use of Controlled Substance in Soap, Synthetic Detergent and Other Cleaning Agents Order, 1995 | | Act on the Disposal of Sewage, Excreta and Livestock Wastewater, 1991; Wastes Control Act, 1991 |
| ***Others*** | | The Sanitation Code, 1975 | Coastal Management Act, 1999 |



continued

**National Legislation Relating to Marine Pollution in East Asia**

| Types of Legislation | Country | | |
|---|---|---|---|
| | Singapore | Thailand | Vietnam |
| ***Sewage/Industrial wastes*** | | Factory Act, 1992 | |
| ***Others*** | | | |



continued

# Appendix 3: Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| **1.0 International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 Relating Thereto (MARPOL 73/78)** | Ratified Annexes I to V in 1994. | Ratified Annexes I and II in 1993, Annex III in 1994 and Annex V in 1988. | Ratified Annexes I and II in 1986. |
| 1.1 An agency with authority over pollution from ships and the obligation to perform the functions related thereto. | Port Authority of the Ministry of Public Works under Sub-Decree No. 11 on Harbour Rules for Foreign Ships (5 March 1983) | Harbour Superintendency Administration; state fishery and superintendency departments responsible for supervising the discharge of wastes by vessels at fishing ports | Directorate-General on Sea Communications under Decree of the Minister No. KM/167/HM207/PHB-86 |
| 1.2 Legislation which: | | | |
| .1 Prohibits, according to the requirements of the Convention, discharge of oil, noxious liquid substances, sewage, and garbage. | Art. 13 of Subdecree No.11 on Harbour Rules for Foreign Ships, 5 March 1983 prohibits discharge of sewage or used oil and dumping of any waste into water or dock by foreign ships that moor at Cambodia's ports. | Art. 26, Marine Environmental Protection Law (MEPL); Arts. 4 and 5, Regulations Concerning Prevention of Pollution of Sea Areas by Vessels (RPV); Art. 26, Regulations Governing Supervision and Control of Foreign Vessels (RSCV) | Arts. 65 & 66 of Act 21/1992 on Navigation generally prohibit discharge by ships of wastes or other substances into the sea |
| -provides for proper procedures for harmful substances carried by sea in packages; | | | |
| .2 Gives effect to the requirements of the Convention; | | | Act 21/1992 on Navigation |
| .3 Provides sanctions which: | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **1.0 International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 Relating Thereto (MARPOL 73/78)** | Ratified Annexes I, II and V in 1997. | Not ratified. | Ratified Annexes I and II in 1994 and Annexes III and V in 1996. |
| 1.1 An agency with authority over pollution from ships and the obligation to perform the functions related thereto. | Director General of Environment under the Malaysian Exclusive Economic Zone Act 1984, Act 311 (EEZA 1984); Director of Marine under the Merchant Shipping (Oil Pollution) Act 1994 (Act 515); and the Director of Marine, in consultation with Director General, the Minister of Transport under Merchant's Shipping Ordinance, 1952 (Act 70) | Philippine Coast Guard (PCG) under the Marine Pollution Control Decree of 1976 (PD 979) and PD 601 | Ministry of Marine Affairs and Fisheries (MOMAF) |
| 1.2 Legislation which: | | | |
| .1 Prohibits, according to the requirements of the Convention, discharge of oil, noxious liquid substances, sewage, and garbage. | Sec. 27, Environmental Quality Act, 1974 (Act 127), as amended by Act A953 (Environmental Quality [Amendment] Act of 1996) (EQA 74) and EEZA 1984, prohibiting the discharge of oil and oil-containing mixture/pollutant. Sec. 29, EQA 74 prohibits unlicensed discharge of environmentally hazardous substances, pollutants/wastes | PD 979, PCG Memorandum Circular (MC) 03-94; PCG MC 01-94 | Art. 5 of Prevention of Marine Pollution Act permits the discharge of oil and oily mixtures only under the conditions of the Ordinance of the MOMAF; Art. 11 prohibits the discharge of any harmful liquid substance in the sea from a ship except under the cases enumerated therein; Art. 16 prohibits the discharge of waste from ships, unless the conditions therein are complied with |
| -provides for proper procedures for harmful substances carried by sea in packages; | | | |
| .2 Gives effect to the requirements of the Convention; | EQA 74 | Not completely - thru different PCG MCs; PD 979 & PCG MC 03-94. | |
| .3 Provides sanctions which: | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **1.0 International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 Relating Thereto (MARPOL 73/78)** | Ratified Annexes I and II in 1990, Annex III in 1994 and Annex V in 1999. | Not ratified. | Ratified Annexes I and II in 1991. |
| 1.1 An agency with authority over pollution from ships and the obligation to perform the functions related thereto. | Maritime and Port Authority | Harbour Department, Ministry of Transport, Telecommunications and Post | Vietnamese National Maritime Bureau, Ministry of Transport |
| 1.2 Legislation which: | | | |
| .1 Prohibits, according to the requirements of the Convention, discharge of oil, noxious liquid substances, sewage, and garbage. | Sec. 7, Prevention of Pollution of the Sea Act of 1990 (PPSA), prohibits the discharge of oil, or any oily mixture from any ship into Singapore waters or a Singapore ship into any part of the sea; Singapore Port Regulations (Regulation 104) | General prohibition: Secs. 119 and 204, Navigation in Thai Waters Act prohibit discharge into water bodies of substances including oil, chemicals and refuse. | Decree No. 30/CP(1980) Art. 17 prohibits discharge of waste materials or other noxious substances that cause pollution into the coastal and marine environment of Vietnam by foreign ships. |
| -provides for proper procedures for harmful substances carried by sea in packages; | | | |
| .2 Gives effect to the requirements of the Convention; | PPSA | | |
| .3 Provides sanctions which: | | Secs. 119 and 208, Navigation in Thai Waters Act -- violators face fine or imprisonment | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| -are adequate in severity to discourage violations, | | | Art. 119, Act 21/1992 on Navigation |
| -apply to all its flag ships wherever they may be, | | Yes, under MEPL, RPV and RSCV. | Art. 4, Act 21/1992 on Navigation |
| -apply to all ships which commit violations within its jurisdiction. | | Yes, under MEPL, RPV and RSCV. | Art. 4, Act 21/1992 on Navigation |
| 1.3 Systems for certification, survey and inspection of ships, to ensure compliance with the requirements of the Convention as to construction, equipment, and procedures. | | | Decree of the Ministry of Communication No. KM/167/HM207/Phb-86 requires ships to carry an International Certificate for the Prevention of Pollution by Oil (IOPP) and an International Certificate for the Prevention of Pollution from Poisonous Liquid Material |
| 1.4 Systems for monitoring and detection: | | | |
| .1 To detect violations and enforce requirements | | | |
| .2 Using appropriate and practicable measures of detection and environmental monitoring | | | |
| .3 Including procedures for reporting and accumulation of evidence | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| -are adequate in severity to discourage violations, | EQA 74 provides for a fine not exceeding 10,000 ringgit (US$4,000) or imprisonment of up to five years, or both; EEZA 1984 provides for fines of up to one million ringgit (US$400,000) or imprisonment up to five years for offenses committed within Malaysian waters (EQA) and any part of Malaysian Coast/Reef (Act 70) | Not adequate; laws need to be updated | Yes. Penalties range from imprisonment for not more than five years or a fine not exceeding 50,000,000 Won (US$23,810) for discharge of oil in contravention of Article 5(1) of the prevention of Marine Pollution Act, to a fine not to exceed 2,000,000 Won (US$952.00) for refusal, interference with or evasion without justifiable reason of an inspection by entry or demand for report as prescribed in Article 56(3) (Arts. 71 to 79). |
| -apply to all its flag ships wherever they may be, | | | Yes, under Article 3 of the Prevention of Marine Pollution Act. |
| -apply to all ships which commit violations within its jurisdiction. | EQA 74, EEZA 1984 | Yes. Sec. 7, PD 979 says "any vessel" who violates Sec.4 or any regulation (meaning, PCG MC 03-94) & PCG MC 03-94 (on the scope). | Yes, under Article 3 of the Prevention of Marine Pollution Act. |
| 1.3 Systems for certification, survey and inspection of ships, to ensure compliance with the requirements of the Convention as to construction, equipment, and procedures. | Min. of Environment empowered to make rules on design, construction, alteration of ships, inspection and certifications in accordance with Act 70 | Yes. Sec. 5 (b), PD 601 (Revised Coast Guard Law of 1974), PCG MCs 05-83 and 08-96 (Port State Control). | Arts. 24 to 33, Prevention of Marine Pollution Act |
| 1.4 Systems for monitoring and detection: | | Yes. | |
| .1 To detect violations and enforce requirements | | PCG MC 08-91 (Marine Pollution Inspection & Apprehension Report). Otherwise, none. | Arts. 56 and 58, Prevention of Marine Pollution Act |
| .2 Using appropriate and practicable measures of detection and environmental monitoring | | PCG 08-91 (Marine Pollution Inspection & Apprehension Report). | |
| .3 Including procedures for reporting and accumulation of evidence | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| -are adequate in severity to discourage violations, | Yes. Sec. 7, PPSA: a fine of $500 to $500,000 (US$357 to 357,000) or imprisonment not exceeding two years or both for the discharge of oil or any oily mixture from any ship into Singapore waters or a Singapore ship into any part of the sea | Very light fine -- 2000 baht (US$79) under Sec. 119 of the Navigation in Thai Waters Act or 500 baht (US$20) under Sec. 208 of the Navigation in Thai Waters Act | |
| -apply to all its flag ships wherever they may be, | Yes. Sec. 7, PPSA. | No. | |
| -apply to all ships which commit violations within its jurisdiction. | Sec. 10, PPSA | Yes. Apply only to violations within Thai jurisdiction (Sec. 119). | |
| 1.3 Systems for certification, survey and inspection of ships, to ensure compliance with the requirements of the Convention as to construction, equipment, and procedures. | Sec. 22, PPSA and PPSA Regulations (Singapore Oil Pollution Prevention Certificate or a Singapore Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk) | | Arts. 17 and 18, Maritime Code |
| 1.4 Systems for monitoring and detection: | | | Generally, Arts. 19-22, Maritime Code |
| .1 To detect violations and enforce requirements | Secs. 22 to 24, 28 and 29, PPSA | | |
| .2 Using appropriate and practicable measures of detection and environmental monitoring | Secs. 22, 23, and 31, PPSA | | |
| .3 Including procedures for reporting and accumulation of evidence | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| | REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|---|
| 1.5 | Provision for investigation upon receiving evidence of violation by its ship or any casualty occurring to any of its ships producing a deleterious effect upon the environment | | | Arts. 93 & 99 of Act 21/1992 on Navigation |
| 1.6 | Procedures for taking proceedings | | | Arts. 93 & 99 of Act 21/1992 on Navigation |
| 1.7 | Measures incorporating all possible efforts to avoid a ship being unduly detained or delayed in connection with inspection, monitoring, and violations. | | | The closest is Art. 13 of Act No. 5/1983 on the Indonesian Exclusive Economic Zone, providing that law enforcement measures in case of criminal acts may include detention until the "handing over" of the case for prosecution, which must take place as soon as possible, and not to exceed seven days. However, detention may continue during prosecution. |
| 1.8 | Provision of compensation to be paid to ships so unduly detained or delayed for any loss or damage suffered. | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| | REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|---|
| 1.5 | Provision for investigation upon receiving evidence of violation by its ship or any casualty occurring to any of its ships producing a deleterious effect upon the environment | Dir. of Marine in consultation with Dir. Gen to take action after due investigation to prevent/reduce pollution (Sec. 306(d), Act 70); Also, EQA 74 (1996 Amendment) Secs. 46A to D and 48 re: forfeiture, seizure, disposal, detention and sale of ships (power and procedure) | Yes. PCG MC 03-94 (PCG Investigation and Adjudication Officer for Marine Environment Protection & Pollution in every coast guard district) | |
| 1.6 | Procedures for taking proceedings | Dir. Gen w/ powers to detain any vessel, defined as every description of ship/floating submarine craft/structure (Act 311) ; Section 46C, EQA 74 re: forfeiture if no prosecution w/in one month from seizure | Yes. Proceedings to follow requirements of due process but primarily summary in nature. | Generally, Arts. 65 and 66, Prevention of Marine Pollution Act, with details to be provided by the appropriate Ordinances |
| 1.7 | Measures incorporating all possible efforts to avoid a ship being unduly detained or delayed in connection with inspection, monitoring, and violations. | | PCG MC 08-96 (Port State Control) | |
| 1.8 | Provision of compensation to be paid to ships so unduly detained or delayed for any loss or damage suffered. | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| | REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|---|
| 1.5 | Provision for investigation upon receiving evidence of violation by its ship or any casualty occurring to any of its ships producing a deleterious effect upon the environment | Sec. 22, PPSA | | |
| 1.6 | Procedures for taking proceedings | Secs. 31 and 32, PPSA | | |
| 1.7 | Measures incorporating all possible efforts to avoid a ship being unduly detained or delayed in connection with inspection, monitoring, and violations. | | | |
| 1.8 | Provision of compensation to be paid to ships so unduly detained or delayed for any loss or damage suffered. | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| 1.9 Report by the master or other person in charge of the ship of any incident involving a discharge or probable discharge of oil or noxious liquid substances carried in bulk or harmful substances in packaged form. | | mandatory reporting of a marine pollution incident to the Harbour Superintendency Administration for investigation and settlement (Art. 34, MEPL and Art. 6, RPV) | Art. 67, Act 21/1992 on Navigation |
| 1.10 Ensuring the provision of adequate reception facilities in ports. | | | Minister of Communications Decree No. KM 215/AL/506/PHB-87 (19/9/87) on the Procurement of Shore Reception Facility |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| 1.9 Report by the master or other person in charge of the ship of any incident involving a discharge or probable discharge of oil or noxious liquid substances carried in bulk or harmful substances in packaged form. | Owner/Master of vessel required to immediately report to Dir. Gen. (Sec.12(1) Act 311) | PCG MC 08-91. PCG must be immediately notified about particulars of the incident such as name of vessel, location, weather condition, type of spill, quantity, etc. for the immediate recovery and clean-up operation. | |
| 1.10 Ensuring the provision of adequate reception facilities in ports. | | PPA MC 16-95 on reception facilities; MC 02-94 on garbage | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| 1.9 Report by the master or other person in charge of the ship of any incident involving a discharge or probable discharge of oil or noxious liquid substances carried in bulk or harmful substances in packaged form. | Sec. 15, PPSA: if any actual or probable discharge of any harmful substance occurs in prescribed circumstances from a Singapore ship into any part of the sea or from any ship into Singapore waters, the master of the ship shall without delay report the occurrence in such manner and to such officer as may be prescribed; if the master of the ship is unable to report the incident, the owner, charterer, manager and operator of the ship or an agent of the owner, charterer, manager or operator of the ship shall without delay report the occurrence; failure to so report shall result, upon conviction, in a fine not exceeding $5,000 (US$3,571) | | Art. 55, Maritime Code, on the general obligation to report maritime accidents |
| 1.10 Ensuring the provision of adequate reception facilities in ports. | Part IV, PPSA; Reception Facilities Regulations; Section 11, PPSA, gives the Port of Singapore Authority (PSA) the power to provide reception facilities for ships using the port or any terminal of Singapore; Minister or Transport, may direct the PSA or a terminal operator to provide or arrange for the provision of appropriate reception facilities | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| 1.11 Measures to enforce the reporting and documentation requirements of the Convention. | | | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| 1.11 Measures to enforce the reporting and documentation requirements of the Convention. | | PCG MC 08-91 | |



continued

**Table 5. Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| 1.11 Measures to enforce the reporting and documentation requirements of the Convention. | Part IV, PPSA, Section 12, Oil Regulations; Section 12, PPSA, empowers the Minister of Transport to make regulations requiring the keeping of oil record books; Section 13 empowers the Minister to make regulations requiring the keeping of cargo record books; Section 14 provides penalties for failure to carry such books, failure to comply with any other requirements of Sections 12 and 13 or any regulations made thereunder, or knowingly makes a false or misleading entry in such books | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| **2.0 International Convention on Civil Liability for Oil Pollution Damage (CLC) 1969** | Ratified in 1994. | Denounced in 1999 in accordance with the 1992 Protocol. | Ratified in 1978. |
| 2.1 Provision of strict liability of the shipowner for any pollution damage caused by oil discharged/escaped from a ship: | | | General provisions on strict liability under Art. 20, Act 4/1982 on Basic Provisions for the Management of the Living Environment and Art. 11 of Act 5/1983 on the Indonesian EEZ. |
| .1 -up to the amount of 133 SDRs (US$191) per ton of the ship's tonnage or 14 million SDRs (US$20.1 million), whichever is less; | | | |
| .2 -where the ship is a laden oil tanker; and | | | |
| .3 -and the pollution damage is suffered within the territory of the state (up to the territorial sea). | | Art. 2, MEPL | |
| 2.2 Requirement for shipowner to constitute a fund representing the limit of his liability by deposit or guarantee to cover incidents causing oil pollution damage, against which a claim for pollution damage may directly be brought. | | par. 2, Article 28, MEPL; Art. 12, RPV | |
| 2.3 Requirement for the shipowner, where the ship is carrying more than 2,000 tons of oil, to maintain insurance or other financial security to cover his liability, against which a claim for pollution damage may directly be brought. | | Art. 13 of the RPV states that "[v]essels engaged in international trade with a bulk oil carrying capacity of 2,000 tons shall, besides observing these regulations, be bound by the provisions of the International Convention on Civil Liability for Oil Pollution Damage, 1969."; par. 2, Art. 28 of the MEPL requires any vessel carrying more than 2,000 tons of oil in bulk as cargo to have a valid Certificate of Insurance or other financial security in respect of civil liability for oil pollution damage, or a credit certificate for civil liability against oil pollution damage, or hold other financial credit guarantees | The closest is Art. 68 of Act 21/1992 on Navigation which provides that "the shipowner must insure his liability (constitute a guarantee/file a bond)" to fulfil his responsibility for the pollution which comes from his ship. |
| 2.4 Issuance by the authority in respect of a ship under its registry of a certificate attesting that insurance or other financial security is in force, which certificate must be carried on board the ship. | | | |
| 2.5 Exercise of port state control in the inspection of such a certificate. | | | |
| 2.6 Courts possessing the proper jurisdiction to entertain actions for compensation. | | | |
| 2.7 Recognition and enforcement of a judgment given by a competent court of another state. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **2.0 International Convention on Civil Liability for Oil Pollution Damage (CLC) 1969** | Ratified in 1995. | Not ratified. | Denounced in 1997 in accordance with the 1992 Protocol. |
| 2.1 Provision of strict liability of the shipowner for any pollution damage caused by oil discharged/escaped from a ship: | Yes, under the Merchant Shipping (Oil Pollution) Act of 1994 (Act 515), the implementing legislation. | | |
| .1 -up to the amount of 133 SDRs (US$191) per ton of the ship's tonnage or 14 million SDRs (US$20.1 million), whichever is less; | 133 SDRs per ton with respect to one incident; 14 M SDRs aggregate amount (Act 515). | | |
| .2 -where the ship is a laden oil tanker; and | Sec. 2, Act 515 | | |
| .3 -and the pollution damage is suffered within the territory of the state (up to the territorial sea). | In any area of Malaysia or any area of other State parties. | | |
| 2.2 Requirement for shipowner to constitute a fund representing the limit of his liability by deposit or guarantee to cover incidents causing oil pollution damage, against which a claim for pollution damage may directly be brought. | Yes, under Sec. 7, Act 515. | | |
| 2.3 Requirement for the shipowner, where the ship is carrying more than 2,000 tons of oil, to maintain insurance or other financial security to cover his liability, against which a claim for pollution damage may directly be brought. | Yes. | MARINA MC 56-A (Resolution 91-043) in an amount equivalent to US$300 M if tanker/barge has 700,000 liters or more capacity or US$10 M if tanker/barge has less than 700,000 liters capacity. | |
| 2.4 Issuance by the authority in respect of a ship under its registry of a certificate attesting that insurance or other financial security is in force, which certificate must be carried on board the ship. | Yes, from the Director of Marine or other authorized person. | | |
| 2.5 Exercise of port state control in the inspection of such a certificate. | Sec. 12, Act 515. | | |
| 2.6 Courts possessing the proper jurisdiction to entertain actions for compensation. | Yes, High Court of Malaysia. | | |
| 2.7 Recognition and enforcement of a judgment given by a competent court of another state. | Yes, under Sec. 24, Act 515. | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **2.0 International Convention on Civil Liability for Oil Pollution Damage (CLC) 1969** | Denounced in 1997 in accordance with the 1992 Protocol. | Not ratified. | Not ratified |
| 2.1 Provision of strict liability of the shipowner for any pollution damage caused by oil discharged/escaped from a ship: | | | Art. 17, Decree No. 30/CP (1980) -- Regulations on foreign ships operating in maritime zone, strict liability for polluters including costs, liability for damage compensation for immediate and long-term damages caused by pollution. |
| .1 -up to the amount of 133 SDRs (US$191) per ton of the ship's tonnage or 14 million SDRs (US$20.1 million), whichever is less; | | | Maritime Code, Arts. 194-196: Shipowners are civilly liable for losses if they fail to prove any other cause for such losses, subject to limitations based mainly on total value of the ship. |
| .2 -where the ship is a laden oil tanker; and | | | |
| .3 -and the pollution damage is suffered within the territory of the state (up to the territorial sea). | | | |
| 2.2 Requirement for shipowner to constitute a fund representing the limit of his liability by deposit or guarantee to cover incidents causing oil pollution damage, against which a claim for pollution damage may directly be brought. | | | |
| 2.3 Requirement for the shipowner, where the ship is carrying more than 2,000 tons of oil, to maintain insurance or other financial security to cover his liability, against which a claim for pollution damage may directly be brought. | | | Art. 23, Maritime Code - Vietnamese & Foreign ships that specialize in carriage of oil, oil products, or any other dangerous cargo, required when operating in Vietnam's seaports or other marine areas to be insured in respect of civil liability of owners in the event of environmental pollution. But not in implementation of CLC. |
| 2.4 Issuance by the authority in respect of a ship under its registry of a certificate attesting that insurance or other financial security is in force, which certificate must be carried on board the ship. | | | |
| 2.5 Exercise of port state control in the inspection of such a certificate. | | | |
| 2.6 Courts possessing the proper jurisdiction to entertain actions for compensation. | | | |
| 2.7 Recognition and enforcement of a judgment given by a competent court of another state. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|---|
| 2.8 | Legislation to give effect to these requirements. | | RPV | |
| 2.9 | Designation of a proper authority for certification and enforcement. | | Harbour Superintendency Administration | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|---|
| 2.8 | Legislation to give effect to these requirements. | Act 515 (1994) | | |
| 2.9 | Designation of a proper authority for certification and enforcement. | Yes, Director of Marine. | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|---|
| 2.8 | Legislation to give effect to these requirements. | Merchant Shipping (Oil Pollution) Act (repealed by Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act of 1998 | | |
| 2.9 | Designation of a proper authority for certification and enforcement. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| **3.0 1992 CLC Protocol** | Not ratified. | Ratified in 1997. | Ratified in 1999. |
| 3.1 Provision of strict liability of the shipowner for any pollution damage caused by oil discharged/escaped from a ship: | | | |
| .1 -limited to a maximum of 59.7 million SDRs (US$85.9 million). | | | |
| .2 -the ship is a laden or unladen oil tanker | | | |
| .3 - the pollution damage is suffered within the territory, territorial sea, or exclusive economic zone of the state. | | | |
| 3.2 Requirement for shipowner to constitute a fund representing limit of liability by deposit or guarantee to cover incidents causing oil pollution damage, against which a claim for pollution damage may directly be brought. | | | |
| 3.3 Requirement for the shipowner, where the ship is carrying more than 2,000 tons of oil, to maintain insurance or other financial security to cover his liability, against which a claim for pollution damage may directly be brought. | | par. 2, Art. 28, MEPL | |
| 3.4 Issuance by the authority in respect of a ship registered under its flag of a certificate attesting that insurance or other financial security is in force, which certificate must be carried on board the | | | |
| 3.5 Exercise of port state control in the inspection of such a certificate. | | | |
| 3.6 Courts possessing the proper jurisdiction to entertain actions for compensation. | | | |
| 3.7 Recognition and enforcement of a judgment given by a competent court of another state. | | | |
| 3.8 Legislation to give effect to these requirements. | | | |
| 3.9 Designation of a proper authority for certification and enforcement. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **3.0 1992 CLC Protocol** | Not ratified. | Ratified in 1997. | Ratified in 1997. |
| 3.1 Provision of strict liability of the shipowner for any pollution damage caused by oil discharged/escaped from a ship: | | Not yet implemented. | Art. 4, Ch. II, Compensation for Oil Pollution Damage Guarantee Act (COPDGA) |
| .1 -limited to a maximum of 59.7 million SDRs (US$85.9 million). | | | Art. 7, Ch. II, COPDGA |
| .2 -the ship is a laden or unladen oil tanker | | | Art. 2, Ch. I, COPDGA |
| .3 - the pollution damage is suffered within the territory, territorial sea, or exclusive economic zone of the state. | | | Art. 3, Ch. I, COPDGA |
| 3.2 Requirement for shipowner to constitute a fund representing limit of liability by deposit or guarantee to cover incidents causing oil pollution damage, against which a claim for pollution damage may directly be brought. | | | Art. 6, Ch. II and Art. 35, Ch. 5, COPDGA |
| 3.3 Requirement for the shipowner, where the ship is carrying more than 2,000 tons of oil, to maintain insurance or other financial security to cover his liability, against which a claim for pollution damage may directly be brought. | | | Art. 14, Ch. III, COPDGA |
| 3.4 Issuance by the authority in respect of a ship registered under its flag of a certificate attesting that insurance or other financial security is in force, which certificate must be carried on board the | | | Arts. 18 and 21, Ch. III, COPDGA |
| 3.5 Exercise of port state control in the inspection of such a certificate. | | | Art. 45, Ch. VI, COPDGA |
| 3.6 Courts possessing the proper jurisdiction to entertain actions for compensation. | | | Art. 12, Ch. II, COPDGA |
| 3.7 Recognition and enforcement of a judgment given by a competent court of another state. | | | Art. 28, Ch. III, COPDGA |
| 3.8 Legislation to give effect to these requirements. | | | COPDGA |
| 3.9 Designation of a proper authority for certification and enforcement. | | | Minister of Maritime Affairs and Fisheries |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **3.0 1992 CLC Protocol** | Ratified in 1997. | Not ratified. | Not ratified. |
| 3.1 Provision of strict liability of the shipowner for any pollution damage caused by oil discharged/escaped from a ship: | Sec. 7, Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act of 1998 (MS98) | | |
| .1 -limited to a maximum of 59.7 million SDRs (US$85.9 million). | Sec. 6, MS98 | | |
| .2 -the ship is a laden or unladen oil tanker | Sec. 3, MS 98 | | |
| .3 - the pollution damage is suffered within the territory, territorial sea, or exclusive economic zone of the state. | Sec. 3, MS 98 | | |
| 3.2 Requirement for shipowner to constitute a fund representing limit of liability by deposit or guarantee to cover incidents causing oil pollution damage, against which a claim for pollution damage may directly be brought. | Sec. 7, MS 98 | | |
| 3.3 Requirement for the shipowner, where the ship is carrying more than 2,000 tons of oil, to maintain insurance or other financial security to cover his liability, against which a claim for pollution damage may directly be brought. | Sec. 13, MS 98 | | |
| 3.4 Issuance by the authority in respect of a ship registered under its flag of a certificate attesting that insurance or other financial security is in force, which certificate must be carried on board the | Secs. 13 and 14, MS 98 | | |
| 3.5 Exercise of port state control in the inspection of such a certificate. | Sec. 13, MS 98 | | |
| 3.6 Courts possessing the proper jurisdiction to entertain actions for compensation. | Sec. 7, MS98 | | |
| 3.7 Recognition and enforcement of a judgment given by a competent court of another state. | Sec. 16, MS 98 | | |
| 3.8 Legislation to give effect to these requirements. | MS98 | | |
| 3.9 Designation of a proper authority for certification and enforcement. | Director of Marine | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| **4.0 International Convention on the Establishment of an International Oil Pollution Compensation Fund (FUND) 1971** | Not ratified. | Not ratified. | Denounced in 1999. |
| 4.1 Provision that compensation is to be obtained from the IOPC Fund for any pollution damage caused by persistent oils discharged/ escaped from a ship, for full compensation beyond the limits of the CLC, | | | General provisions on strict liability under Art. 20, Act 4/1982 on Basic Provisions for the Management of the Living Environment and Art. 11 of Act 5/1983 on the Indonesian EEZ. |
| .1 -up to a limit of 60 million SDRs (US$86.3 million). | | | |
| .2 -where the ship is a laden oil tanker | | | |
| .3 -and the pollution damage is suffered within the territory of the state (up to the territorial sea) | | | |
| 4.2 Courts possessing the proper jurisdiction to entertain actions for compensation against the Fund. | | | |
| 4.3 Recognition of the Fund's right to intervene as a party in legal proceedings instituted in accordance with the CLC. | | | |
| 4.4 Recognition and enforcement of a judgment given by a competent court of another state-party against the Fund. | | | |
| 4.5 Notification to IMO of names and addresses of persons (whether State-owned or private) in the State, receiving more than 150,000 tons of contributing oil, and the quantity received by each, as liable to contribution. | | | |
| 4.6 Ensuring fulfillment of obligations to contribute to the Fund, and appropriate measures for the effective execution of such obligations. | | | |
| 4.7 Authorization without restriction of the transfer and payment of any contribution to, and any compensation paid by, the Fund. | | | |
| 4.8 Exemption of the Fund, its assets, income, contributions and other property from all direct taxation. | | | |
| 4.9 Legislation to give effect to these requirements. | | | |
| 4.10 Designation of a proper authority for certification and enforcement. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **4.0 International Convention on the Establishment of an International Oil Pollution Compensation Fund (FUND) 1971** | Ratified in 1995. | Not ratified. | Denounced in 1997 in accordance with the 1992 Protocol. |
| 4.1 Provision that compensation is to be obtained from the IOPC Fund for any pollution damage caused by persistent oils discharged/ escaped from a ship, for full compensation beyond the limits of the CLC, | Yes, under Sec. 19, Act 515. | | |
| .1 -up to a limit of 60 million SDRs (US$86.3 million). | Sec. 16, Act 515 (1994). Amount of liability - subject to par. 4.5.6 of Art. 4 of FUND 1971 (as amended in 1976) and schedule, 30M SDRS or 60M SDRS for ships actually carrying oil in bulk or cargo in any area of Malaysia | | |
| .2 -where the ship is a laden oil tanker | Sec. 2, Act 515 | | |
| .3 -and the pollution damage is suffered within the territory of the state (up to the territorial sea) | Sec. 2, Act 515 | | |
| 4.2 Courts possessing the proper jurisdiction to entertain actions for compensation against the Fund. | Yes, High Court of Malaysia. | | |
| 4.3 Recognition of the Fund's right to intervene as a party in legal proceedings instituted in accordance with the CLC. | Yes | | |
| 4.4 Recognition and enforcement of a judgment given by a competent court of another state-party against the Fund. | Yes, Sec. 16 of the Merchant Shipping (Oil Pollution) Act, 1994. | | |
| 4.5 Notification to IMO of names and addresses of persons (whether State-owned or private) in the State, receiving more than 150,000 tons of contributing oil, and the quantity received by each, as liable to contribution. | | | |
| 4.6 Ensuring fulfillment of obligations to contribute to the Fund, and appropriate measures for the effective execution of such obligations. | Dir. of Marine authorized to carry out powers and duties under Act 515, i.e., international arrest, detention and prosecution of offenders of the Act. | | |
| 4.7 Authorization without restriction of the transfer and payment of any contribution to, and any compensation paid by, the Fund. | | | |
| 4.8 Exemption of the Fund, its assets, income, contributions and other property from all direct taxation. | | | |
| 4.9 Legislation to give effect to these requirements. | Act 515 | | |
| 4.10 Designation of a proper authority for certification and enforcement. | Director of Marine | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **4.0 International Convention on the Establishment of an International Oil Pollution Compensation Fund (FUND) 1971** | Not ratified. | Not ratified. | Not ratified. |
| 4.1 Provision that compensation is to be obtained from the IOPC Fund for any pollution damage caused by persistent oils discharged/ escaped from a ship, for full compensation beyond the limits of the CLC, | | | |
| .1 -up to a limit of 60 million SDRs (US$86.3 million). | | | |
| .2 -where the ship is a laden oil tanker | | | |
| .3 -and the pollution damage is suffered within the territory of the state (up to the territorial sea) | | | |
| 4.2 Courts possessing the proper jurisdiction to entertain actions for compensation against the Fund. | | | |
| 4.3 Recognition of the Fund's right to intervene as a party in legal proceedings instituted in accordance with the CLC. | | | |
| 4.4 Recognition and enforcement of a judgment given by a competent court of another state-party against the Fund. | | | |
| 4.5 Notification to IMO of names and addresses of persons (whether State-owned or private) in the State, receiving more than 150,000 tons of contributing oil, and the quantity received by each, as liable to contribution. | | | |
| 4.6 Ensuring fulfillment of obligations to contribute to the Fund, and appropriate measures for the effective execution of such obligations. | | | |
| 4.7 Authorization without restriction of the transfer and payment of any contribution to, and any compensation paid by, the Fund. | | | |
| 4.8 Exemption of the Fund, its assets, income, contributions and other property from all direct taxation. | | | |
| 4.9 Legislation to give effect to these requirements. | | | |
| 4.10 Designation of a proper authority for certification and enforcement. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| **5.0 1992 FUND Protocol** | Not ratified. | Not ratified. | Not ratified. |
| 5.1 Provision that compensation is to be obtained from the IOPC Fund for any pollution damage caused by persistent oils discharged/ escaped from a ship, for full compensation beyond the limits of the CLC: | | | |
| .1 -up to a limit of 135 million SDRs (US$194 million). | | | |
| .2 -the ship is a laden or unladen oil tanker | | | |
| .3 - the pollution damage is suffered within the territory, territorial sea, or exclusive economic zone of the state. | | | |
| 5.2 Courts possessing the proper jurisdiction to entertain actions for compensation against the Fund. | | | |
| 5.3 Recognition of the Fund's right to intervene as a party in legal proceedings instituted in accordance with the CLC. | | | |
| 5.4 Recognition and enforcement of a judgment given by a competent court of another state-party against the Fund. | | | |
| 5.5 Notification to IMO of names and addresses of persons (whether State-owned or private) in the State, and the quantity of contributing oil received by each, where the oil received is more than 150,000 tons, as liable to contribution. | | | |
| 5.6 Ensuring fulfillment of obligations to contribute to the Fund, and appropriate measures for the effective execution of such obligations. | | | |
| 5.7 Authorization without restriction of the transfer and payment of any contribution to, and any compensation paid by, the Fund. | | | |
| 5.8 Exemption of the Fund, its assets, income, contributions and other property from all direct taxation. | | | |
| 5.9 Legislation to give effect to these requirements. | | | |
| 5.10 Designation of a proper authority for certification and enforcement. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **5.0 1992 FUND Protocol** | Not ratified. | Ratified in 1997. | Ratified in 1997. |
| 5.1 Provision that compensation is to be obtained from the IOPC Fund for any pollution damage caused by persistent oils discharged/ escaped from a ship, for full compensation beyond the limits of the CLC: | | Not yet implemented. | |
| .1 -up to a limit of 135 million SDRs (US$194 million). | | | Art. 23, Ch. IV, Compensation for Oil Pollution Damage Guarantee Act (COPDGA) |
| .2 -the ship is a laden or unladen oil tanker | | | Art. 2, Ch. I, COPDGA |
| .3 - the pollution damage is suffered within the territory, territorial sea, or exclusive economic zone of the state. | | | Art. 3, Ch. I, COPDGA |
| 5.2 Courts possessing the proper jurisdiction to entertain actions for compensation against the Fund. | | | Art. 27, Ch. IV, COPDGA |
| 5.3 Recognition of the Fund's right to intervene as a party in legal proceedings instituted in accordance with the CLC. | | | Art. 27, Ch. IV and Art. 36, Ch. V, COPDGA |
| 5.4 Recognition and enforcement of a judgment given by a competent court of another state-party against the Fund. | | | Art. 28, Ch. IV, COPDGA |
| 5.5 Notification to IMO of names and addresses of persons (whether State-owned or private) in the State, and the quantity of contributing oil received by each, where the oil received is more than 150,000 tons, as liable to contribution. | | | Art. 30, Ch. IV, COPDGA |
| 5.6 Ensuring fulfillment of obligations to contribute to the Fund, and appropriate measures for the effective execution of such obligations. | | | Art. 32, Ch. IV, COPDGA |
| 5.7 Authorization without restriction of the transfer and payment of any contribution to, and any compensation paid by, the Fund. | | | |
| 5.8 Exemption of the Fund, its assets, income, contributions and other property from all direct taxation. | | | |
| 5.9 Legislation to give effect to these requirements. | | | COPDGA |
| 5.10 Designation of a proper authority for certification and enforcement. | | | Minister of Marine Affairs and Fisheries |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **5.0 1992 FUND Protocol** | Ratified in 1997. | Not ratified. | Not ratified. |
| 5.1 Provision that compensation is to be obtained from the IOPC Fund for any pollution damage caused by persistent oils discharged/ escaped from a ship, for full compensation beyond the limits of the CLC: | Sec. 27, MS 98 | | |
| .1 -up to a limit of 135 million SDRs (US$194 million). | Sec. 28, MS 98 | | |
| .2 -the ship is a laden or unladen oil tanker | Sec. 3, MS 98 | | |
| .3 - the pollution damage is suffered within the territory, territorial sea, or exclusive economic zone of the state. | Sec. 2, MS 98 | | |
| 5.2 Courts possessing the proper jurisdiction to entertain actions for compensation against the Fund. | Sec. 29, MS 98 | | |
| 5.3 Recognition of the Fund's right to intervene as a party in legal proceedings instituted in accordance with the CLC. | Sec. 24, MS 98 | | |
| 5.4 Recognition and enforcement of a judgment given by a competent court of another state-party against the Fund. | Sec. 29, MS 98 | | |
| 5.5 Notification to IMO of names and addresses of persons (whether State-owned or private) in the State, and the quantity of contributing oil received by each, where the oil received is more than 150,000 tons, as liable to contribution. | | | |
| 5.6 Ensuring fulfillment of obligations to contribute to the Fund, and appropriate measures for the effective execution of such obligations. | Sec. 25, MS 98, any unpaid amount shall bear interest; empowers MPA to impose on persons who are or may be liable to pay contributions the obligation to give security for the payment to the MPA or the Fund of said contribution; contravention of such regulations, may result in a fine not exceeding $20,000 (US$12,286), imprisonment for a term not exceeding 12 months, or both | | |
| 5.7 Authorization without restriction of the transfer and payment of any contribution to, and any compensation paid by, the Fund. | | | |
| 5.8 Exemption of the Fund, its assets, income, contributions and other property from all direct taxation. | | | |
| 5.9 Legislation to give effect to these requirements. | MS 98 | | |
| 5.10 Designation of a proper authority for certification and enforcement. | MPA | | |



continued

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| **6.0 International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) 1990** | Not ratified. | Ratified in 1998. | Not ratified, but Indonesia is a member of ASEAN OSRAP. |
| 6.1 Cooperation and assistance to requesting States parties to deal with oil pollution incidents. | | | |
| 6.2 Requirement for ships, offshore units, aircraft, seaports and oil handling facilities to: | | | |
| .1 -report oil pollution incidents to the nearest coastal state or competent national authority | | | |
| .2 -advise neighboring states at risk, as appropriate | | | |
| .3 -advise IMO as appropriate | | | |
| 6.3 Establishment of a national system for responding promptly and effectively to oil pollution incidents, which have, as a basic minimum: | | | operations prescribed by draft Presidential Decree on Emergency Control of Oil Pollution at Sea already put into use during actual accidents and exercises |
| .1 -a national contingency plan | | | |
| .2 -designated national authorities | | | |
| .3 -operational focal points responsible for oil pollution preparedness and response, reporting, and handling of requests for assistance | | | |
| 6.4 Establishment, within its capabilities individually or through bilateral or multilateral cooperation, and in cooperation with the oil and shipping industries, port authorities, and other relevant entities, of: | | | |



continued

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **6.0 International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) 1990** | Ratified in 1997. | Not ratified, but Philippines is a member of ASEAN OSRAP. | Not ratified. |
| 6.1 Cooperation and assistance to requesting States parties to deal with oil pollution incidents. | Implementing legislation being developed. | | |
| 6.2 Requirement for ships, offshore units, aircraft, seaports and oil handling facilities to: | | | |
| .1 -report oil pollution incidents to the nearest coastal state or competent national authority | | | |
| .2 -advise neighboring states at risk, as appropriate | | | |
| .3 -advise IMO as appropriate | | | |
| 6.3 Establishment of a national system for responding promptly and effectively to oil pollution incidents, which have, as a basic minimum: | | | |
| .1 -a national contingency plan | | | |
| .2 -designated national authorities | | | |
| .3 -operational focal points responsible for oil pollution preparedness and response, reporting, and handling of requests for assistance | | PD 602, Establishing the Oil Pollution Operations Center in the PCG Headquarters authorises the PCG to negotiate directly with local companies which have oil containment and recovery facilities for the use of such equipment in combating oil pollution | |
| 6.4 Establishment, within its capabilities individually or through bilateral or multilateral cooperation, and in cooperation with the oil and shipping industries, port authorities, and other relevant entities, of: | | | |



continued

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **6.0 International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) 1990** | Ratified in 1998. | Not ratified, but Thailand is a member of ASEAN OSRAP. | Not ratified. |
| 6.1 Cooperation and assistance to requesting States parties to deal with oil pollution incidents. | | | |
| 6.2 Requirement for ships, offshore units, aircraft, seaports and oil handling facilities to: | | | |
| .1 -report oil pollution incidents to the nearest coastal state or competent national authority | | | |
| .2 -advise neighboring states at risk, as appropriate | | | |
| .3 -advise IMO as appropriate | | | |
| 6.3 Establishment of a national system for responding promptly and effectively to oil pollution incidents, which have, as a basic minimum: | | A Regulation of the Prime Minister's Office on the Prevention and Combating of Oil Pollution B.E. 2537 (1994) establishes a Committee on the Prevention and Combating of Oil Pollution, responsible, *inter alia,* for the preparation of a National Response Plan. There is no information on whether such plan has been prepared and adopted. | a national programme to respond to oil spills is being developed, in cooperation with the Swedish International Development Agency; Ministry of Science, Technology and Environment (MOSTE) Minister's Directive No. 389-MTg dated June 17, 1994 relates to the temporary guidelines for the treatment of oil spills; marine environmental monitoring stations in the coastal and marine waters of Vietnam must inform the National Environmental Agency (NEA) or MOSTE about the occurrence of oil spills for emergency response |
| .1 -a national contingency plan | Yes. | | |
| .2 -designated national authorities | | | |
| .3 -operational focal points responsible for oil pollution preparedness and response, reporting, and handling of requests for assistance | | | |
| 6.4 Establishment, within its capabilities individually or through bilateral or multilateral cooperation, and in cooperation with the oil and shipping industries, port authorities, and other relevant entities, of: | | | |



continued

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| .1 -minimum level of prepositioned oil spill response equipment, proportionate to the risk involved, and programs for its use; | | | |
| .2 -programme of exercises for oil pollution response organizations and training or relevant personnel; | | | |
| .3 -detailed plans and communication capabilities for responding to oil pollution incidents; | | | |
| .4 -mechanism or arrangement for coordinating response to oil pollution incidents and if appropriate, the capabilities to mobilize the necessary resources. | | | |
| 6.5 Requirement of oil pollution emergency plans for: | | | |
| .1 -oil tankers 150 grt and above and other ships of at least 400 grt, according to the Guidelines for the Development of Shipboard Oil Pollution Emergency Plans of Regulation 26, Annex I of MARPOL; | | | |
| .2 -any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation, production activities or loading or unloading oil; | | | General provision under Art. 8(1)(a), Act 1/1973 on Indonesia's Continental Shelf |
| .3 -any seaport and oil handling facility that presents a risk of an oil pollution incident. | | | |
| 6.6 Legislation to give effect to Convention requirements | | | |



continued

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| .1 -minimum level of prepositioned oil spill response equipment, proportionate to the risk involved, and programs for its use; | | | |
| .2 -programme of exercises for oil pollution response organizations and training or relevant personnel; | | | |
| .3 -detailed plans and communication capabilities for responding to oil pollution incidents; | | | |
| .4 -mechanism or arrangement for coordinating response to oil pollution incidents and if appropriate, the capabilities to mobilize the necessary resources. | | | |
| 6.5 Requirement of oil pollution emergency plans for: | | | |
| .1 -oil tankers 150 grt and above and other ships of at least 400 grt, according to the Guidelines for the Development of Shipboard Oil Pollution Emergency Plans of Regulation 26, Annex I of MARPOL; | | PCG MC 04-93 requires oil tankers of 150 GT and above and every ship other than an oil tanker of 400 GT and above to carry on board a shipboard oil pollution emergency plan duly approved by the PCG | |
| .2 -any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation, production activities or loading or unloading oil; | | | |
| .3 -any seaport and oil handling facility that presents a risk of an oil pollution incident. | | | |
| 6.6 Legislation to give effect to Convention requirements | NOTES: 1. Malaysia seems to have a National Contingency Plan which has been in existence since 1976. With the ratification of the OPRC in 1997, Malaysia will need to look into the finer points of the said plan. 2. EQA 74 (A953 Amendment) (1996) establishes an Environmental Fund (consisting of cess payments/ contributions from certain business, e.g. oil explosion/bulk movement, etc.). The Fund, shall, among others, be administered for the purpose of preventing/combating spillage and discharge/ dumping of oil (Sec. 36E). | | |



continued

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| .1 -minimum level of prepositioned oil spill response equipment, proportionate to the risk involved, and programs for its use; | | | |
| .2 -programme of exercises for oil pollution response organizations and training or relevant personnel; | | | |
| .3 -detailed plans and communication capabilities for responding to oil pollution incidents; | | | |
| .4 -mechanism or arrangement for coordinating response to oil pollution incidents and if appropriate, the capabilities to mobilize the necessary resources. | | | |
| 6.5 Requirement of oil pollution emergency plans for: | | | |
| .1 -oil tankers 150 grt and above and other ships of at least 400 grt, according to the Guidelines for the Development of Shipboard Oil Pollution Emergency Plans of Regulation 26, Annex I of MARPOL; | | | Article 21 of the Law on Environmental Protection requires organisation and individuals, while searching and exploring for, exploiting, transporting, processing, or storing oil and gas, to apply technology, implement environmental protection measures, develop preventive plans against oil leakage, oil spills, oil fires and explosions, and to have the necessary facilities to respond in a timely manner to such incidents |
| .2 -any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation, production activities or loading or unloading oil; | | | |
| .3 -any seaport and oil handling facility that presents a risk of an oil pollution incident. | | | |
| 6.6 Legislation to give effect to Convention requirements | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | Cambodia | China | Indonesia |
|---|---|---|---|
| **7.0 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, and Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1989 (Intervention Convention)** | Not ratified. | Ratified in 1990. | Not ratified. |
| 7.1 Measures to be taken on the high seas necessary to prevent, mitigate, or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution following upon a maritime casualty or related acts, which may reasonably be expected to result in major harmful consequences. | | | |
| 7.2 Consultation with other affected states, particularly the flag state/s, before taking such measures. | | | |
| 7.3 Notification of persons who may be affected before taking such measures. | | | |
| 7.4 Notification without delay of measures taken to the concerned states and persons, and IMO. | | | |
| 7.5 Provision on the payment of compensation for damage caused by excessive measures taken. | | | |
| 7.6 Procedures for negotiation, conciliation and arbitration of controversies as to: | | | |
| .1 -whether the measures taken were in contravention of the provisions of the Convention, | | | |
| .2 -whether compensation is obliged to be paid, or | | | |
| .3 -the amount of the compensation. | | | |
| 7.7 Legislation to give effect to the provisions of the Convention. | | | |
| 7.8 Designation of an appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **7.0 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, and Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1989 (Intervention Convention)** | Not ratified. | Not ratified. | Not ratified. |
| 7.1 Measures to be taken on the high seas necessary to prevent, mitigate, or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution following upon a maritime casualty or related acts, which may reasonably be expected to result in major harmful consequences. | Sec. 306(d), Act 70 (1952) authorizes the Director of Marine, in consultation with the Director General to take action to prevent/ reduce extent of pollution in any Malaysian waters or any part of Malaysian coast/reef. | | |
| 7.2 Consultation with other affected states, particularly the flag state/s, before taking such measures. | | | |
| 7.3 Notification of persons who may be affected before taking such measures. | | | |
| 7.4 Notification without delay of measures taken to the concerned states and persons, and IMO. | | | |
| 7.5 Provision on the payment of compensation for damage caused by excessive measures taken. | | | |
| 7.6 Procedures for negotiation, conciliation and arbitration of controversies as to: | | | |
| .1 -whether the measures taken were in contravention of the provisions of the Convention, | | | |
| .2 -whether compensation is obliged to be paid, or | | | |
| .3 -the amount of the compensation. | | | |
| 7.7 Legislation to give effect to the provisions of the Convention. | | | |
| 7.8 Designation of an appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **7.0 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, and Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1989 (Intervention Convention)** | Not ratified. | Not ratified. | Not ratified. |
| 7.1 Measures to be taken on the high seas necessary to prevent, mitigate, or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution following upon a maritime casualty or related acts, which may reasonably be expected to result in major harmful consequences. | | | |
| 7.2 Consultation with other affected states, particularly the flag state/s, before taking such measures. | | | |
| 7.3 Notification of persons who may be affected before taking such measures. | | | |
| 7.4 Notification without delay of measures taken to the concerned states and persons, and IMO. | | | |
| 7.5 Provision on the payment of compensation for damage caused by excessive measures taken. | | | |
| 7.6 Procedures for negotiation, conciliation and arbitration of controversies as to: | | | |
| .1 -whether the measures taken were in contravention of the provisions of the Convention, | | | |
| .2 -whether compensation is obliged to be paid, or | | | |
| .3 -the amount of the compensation. | | | |
| 7.7 Legislation to give effect to the provisions of the Convention. | | | |
| 7.8 Designation of an appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | Cambodia | China | Indonesia |
|---|---|---|---|
| **7.0 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, and Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1989 (Intervention Convention)** | Not ratified. | Ratified in 1990. | Not ratified. |
| 7.1 Measures to be taken on the high seas necessary to prevent, mitigate, or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution following upon a maritime casualty or related acts, which may reasonably be expected to result in major harmful consequences. | | | |
| 7.2 Consultation with other affected states, particularly the flag state/s, before taking such measures. | | | |
| 7.3 Notification of persons who may be affected before taking such measures. | | | |
| 7.4 Notification without delay of measures taken to the concerned states and persons, and IMO. | | | |
| 7.5 Provision on the payment of compensation for damage caused by excessive measures taken. | | | |
| 7.6 Procedures for negotiation, conciliation and arbitration of controversies as to: | | | |
| .1 -whether the measures taken were in contravention of the provisions of the Convention, | | | |
| .2 -whether compensation is obliged to be paid, or | | | |
| .3 -the amount of the compensation. | | | |
| 7.7 Legislation to give effect to the provisions of the Convention. | | | |
| 7.8 Designation of an appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| **7.0 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, and Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1989 (Intervention Convention)** | Not ratified. | Not ratified. | Not ratified. |
| 7.1 Measures to be taken on the high seas necessary to prevent, mitigate, or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution following upon a maritime casualty or related acts, which may reasonably be expected to result in major harmful consequences. | Sec. 306(d), Act 70 (1952) authorizes the Director of Marine, in consultation with the Director General to take action to prevent/ reduce extent of pollution in any Malaysian waters or any part of Malaysian coast/reef. | | |
| 7.2 Consultation with other affected states, particularly the flag state/s, before taking such measures. | | | |
| 7.3 Notification of persons who may be affected before taking such measures. | | | |
| 7.4 Notification without delay of measures taken to the concerned states and persons, and IMO. | | | |
| 7.5 Provision on the payment of compensation for damage caused by excessive measures taken. | | | |
| 7.6 Procedures for negotiation, conciliation and arbitration of controversies as to: | | | |
| .1 -whether the measures taken were in contravention of the provisions of the Convention, | | | |
| .2 -whether compensation is obliged to be paid, or | | | |
| .3 -the amount of the compensation. | | | |
| 7.7 Legislation to give effect to the provisions of the Convention. | | | |
| 7.8 Designation of an appropriate authority. | | | |



continued

| | Singapore | Thailand | Vietnam |
|---|---|---|---|
| **7.0 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, and Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1989 (Intervention Convention)** | Not ratified. | Not ratified. | Not ratified. |
| 7.1 Measures to be taken on the high seas necessary to prevent, mitigate, or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution following upon a maritime casualty or related acts, which may reasonably be expected to result in major harmful consequences. | | | |
| 7.2 Consultation with other affected states, particularly the flag state/s, before taking such measures. | | | |
| 7.3 Notification of persons who may be affected before taking such measures. | | | |
| 7.4 Notification without delay of measures taken to the concerned states and persons, and IMO. | | | |
| 7.5 Provision on the payment of compensation for damage caused by excessive measures taken. | | | |
| 7.6 Procedures for negotiation, conciliation and arbitration of controversies as to: | | | |
| .1 -whether the measures taken were in contravention of the provisions of the Convention, | | | |
| .2 -whether compensation is obliged to be paid, or | | | |
| .3 -the amount of the compensation. | | | |
| 7.7 Legislation to give effect to the provisions of the Convention. | | | |
| 7.8 Designation of an appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|---|
| **8.0** | **International Convention on Salvage, 1989 (Salvage Convention)** | Not ratified. | Ratified in 1994. | Not ratified. |
| 8.1 | Requirement to exercise due care during salvage operations to prevent or minimize damage to the environment. | | | |
| 8.2 | Requirement that in the fixing of reward for salvage, the skill and efforts of the salvors in preventing or minimizing damage to the environment shall be among the criteria. | | | |
| 8.3 | Requirement for the payment of special compensation for salvage operations where the vessel or its cargo posed a threat to the environment. | | | |
| 8.4 | Legislation to give effect to the requirements of the | | | |
| 8.5 | Designation of appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|---|
| **8.0** | **International Convention on Salvage, 1989 (Salvage Convention)** | Not ratified. | Not ratified. | Not ratified. |
| 8.1 | Requirement to exercise due care during salvage operations to prevent or minimize damage to the environment. | | | |
| 8.2 | Requirement that in the fixing of reward for salvage, the skill and efforts of the salvors in preventing or minimizing damage to the environment shall be among the criteria. | | | |
| 8.3 | Requirement for the payment of special compensation for salvage operations where the vessel or its cargo posed a threat to the environment. | | | |
| 8.4 | Legislation to give effect to the requirements of the | | | |
| 8.5 | Designation of appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|---|
| **8.0** | **International Convention on Salvage, 1989 (Salvage Convention)** | Not ratified. | Not ratified. | Not ratified. |
| 8.1 | Requirement to exercise due care during salvage operations to prevent or minimize damage to the environment. | | | |
| 8.2 | Requirement that in the fixing of reward for salvage, the skill and efforts of the salvors in preventing or minimizing damage to the environment shall be among the criteria. | | | |
| 8.3 | Requirement for the payment of special compensation for salvage operations where the vessel or its cargo posed a threat to the environment. | | | |
| 8.4 | Legislation to give effect to the requirements of the | | | |
| 8.5 | Designation of appropriate authority. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| 9.0 **Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention)** | Not ratified. | Ratified in 1985. | Not ratified. |
| 9.1 Designation of an appropriate authority to: | Arts. 12-14 of the Environmental Law has general provisions on waste management including wastes disposed into the sea. | | The Minister of Environment has the authority to grant or reject a licensing application for dumping wastes and to determine disposal sites under Art. 20 of Law of the Republic of Indonesia Number 23 of 1997 regarding Environmental Management (EMA-1997). |
| .1 -issue special and general permits; | | State Oceanic Administration (SOA) and its agencies; Art. 6 of the Regulations Concerning Dumping of Wastes into the Seas, 1985 (RDWS), states procedure of application for permit | "Without a licensing decision, every person is prohibited from disposing of waste disposal to an environmental medium." Art. 20(1), EMA-1997 |
| .2 -keep records of the nature and quantities of all matter permitted to be dumped, and the location, time and method of dumping; and | | | |
| .3 -monitor individually, or in collaboration with other Parties and competent international organizations, the condition of the seas. | | | |
| 9.2 Prohibition of the dumping of at least the substances listed in Annex I (Black List). | | Art. 38, MEPL contains general prohibition on dumping without permission of SOA; SOA may issue an emergency permit for allowing dumping of wastes listed in Annex I (Black List) at designated areas at sea in emergency cases where their disposal on land may pose serious dangers to human health. | General provision under Art. 8, Act 5/1983 on the Indonesian EEZ to "prevent, minimize, control and surmount" pollution in the EEZ. |
| 9.3 Requirement of a prior special permit for at least the substances listed in Annex II (Grey List). | | Art. 11, RDWS | |
| 9.4 Requirement of a prior general permit for the dumping of all other wastes or matter. | | Art. 11, RDWS | |
| 9.5 Issuance of permits only after careful consideration of all factors listed in Annex III (Provisions to be considered in Establishing Criteria Governing the Issue of Permits). | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| 9.0 **Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention)** | Not ratified. | Ratified in 1973. | Ratified in 1993. |
| 9.1 Designation of an appropriate authority to: | Under Act 311 on the EEZ (1984), dumping may be carried out only with a license from the Director General. | | |
| .1 -issue special and general permits; | | Commandant, PCG for substances listed in Annex II and the Environmental Management Bureau (EMB) for substances listed in Annex III-A (PCG MC 02-91) | Wastes which are difficult to dispose of on land may be disposed into the sea in accordance with the Ordinance of the Prime Minister (Art. 16[4], Prevention of Marine Pollution Act). The ship to be used for the transportation and discharge of waste into the sea may be registered with the MOMAF (Art. 22). |
| .2 -keep records of the nature and quantities of all matter permitted to be dumped, and the location, time and method of dumping; and | | | |
| .3 -monitor individually, or in collaboration with other Parties and competent international organizations, the condition of the seas. | | | |
| 9.2 Prohibition of the dumping of at least the substances listed in Annex I (Black List). | | PDs 984 and 979 and PCG MC 03-94 contain the general provisions; PCG MC 02-91 the detailed provisions. | |
| 9.3 Requirement of a prior special permit for at least the substances listed in Annex II (Grey List). | | Yes (Sec. 5a2, PCG MC 02-91). | |
| 9.4 Requirement of a prior general permit for the dumping of all other wastes or matter. | | Yes (Sec. 5a2, PCG MC 02-91). | |
| 9.5 Issuance of permits only after careful consideration of all factors listed in Annex III (Provisions to be considered in Establishing Criteria Governing the Issue of Permits). | | Yes (Sec. 5a2, PCG MC 02-91). | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| 9.0 **Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention)** | Not ratified. | Not ratified. | Not ratified. |
| 9.1 Designation of an appropriate authority to: | | | |
| .1 -issue special and general permits; | | Harbour Master | |
| .2 -keep records of the nature and quantities of all matter permitted to be dumped, and the location, time and method of dumping; and | | | |
| .3 -monitor individually, or in collaboration with other Parties and competent international organizations, the condition of the seas. | | | |
| 9.2 Prohibition of the dumping of at least the substances listed in Annex I (Black List). | | Dumping is prohibited in general under Sec. 119, Navigation in Thai Waters Act. | Discharge of grease or oil, wastes and other substances is prohibited in general by Art. 29, Law on Environmental Protection. |
| 9.3 Requirement of a prior special permit for at least the substances listed in Annex II (Grey List). | | | |
| 9.4 Requirement of a prior general permit for the dumping of all other wastes or matter. | | | |
| 9.5 Issuance of permits only after careful consideration of all factors listed in Annex III (Provisions to be considered in Establishing Criteria Governing the Issue of Permits). | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| 9.6 Permits to cover matter intended for dumping: | | Yes. | |
| .1 -loaded in its territory (port state jurisdiction) | | | |
| .2 -loaded by a vessel or aircraft registered in its territory or flying its flag, when loading occurs in the territory of a non-party state (flag state jurisdiction). | | | |
| 9.7 Prohibition of the incineration at sea of industrial wastes and sewage sludge. | | | |
| 9.8 Requirement of a prior special permit for incineration at sea of other wastes. | | | |
| 9.9 Legislation and regulations to: | | | |
| .1 -implement the provisions of the Convention | | MEPL, RDWS | |
| .2 -provide sanctions. | | | |
| 9.10 Application of all implementing measures to: | | | |
| .1 -vessels and aircraft registered in its territory (flag state jurisdiction), | | | |
| .2 -vessels and aircraft loading in its territory matter intended for dumping (port state jurisdiction), | | | |
| .3 -vessels and aircraft and fixed and floating platforms under its jurisdiction (coastal state jurisdiction). | | Foreign vessels and platforms within the seas under the jurisdiction of China that intend to dump wastes or other matters arising from, or related to the exploration, exploitation and associated offshore processing of seabed mineral resources should report to the Authority for approval. (Art. 7, RDWS) | |
| 9.11 Monitoring of the marine environment for compliance. | | Art. 16, RDWS | |
| 9.12 Notification to IMO of: | | | |
| .1 -any additional substances prohibited; | | | |
| .2 -the substances permitted to be dumped under exceptional circumstances; | | | |
| .3 -all matter permitted to be dumped; | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| 9.6 Permits to cover matter intended for dumping: | law applicable to Malaysia's Exclusive Economic Zone only | | |
| .1 -loaded in its territory (port state jurisdiction) | | | |
| .2 -loaded by a vessel or aircraft registered in its territory or flying its flag, when loading occurs in the territory of a non-party state (flag state jurisdiction). | | | |
| 9.7 Prohibition of the incineration at sea of industrial wastes and sewage sludge. | | | |
| 9.8 Requirement of a prior special permit for incineration at sea of other wastes. | | Incineration of burnable trash or solid matter is allowed by the EMB in a "designated area" (PCG MC 02-91; Sec. 5.b, PCG MC 03-94). | |
| 9.9 Legislation and regulations to: | Yang di Pertuan Agong authorized to issue regulations to implement Act 311 (not London Convention) | | |
| .1 -implement the provisions of the Convention | | | Prevention of Marine Pollution Act |
| .2 -provide sanctions. | | | |
| 9.10 Application of all implementing measures to: | definition of "vessel": every ship/floating or submarine structure (within EEZ or continental shelf) | | |
| .1 -vessels and aircraft registered in its territory (flag state jurisdiction), | | | |
| .2 -vessels and aircraft loading in its territory matter intended for dumping (port state jurisdiction), | | | |
| .3 -vessels and aircraft and fixed and floating platforms under its jurisdiction (coastal state jurisdiction). | | | |
| 9.11 Monitoring of the marine environment for compliance. | | | |
| 9.12 Notification to IMO of: | | | |
| .1 -any additional substances prohibited; | | | |
| .2 -the substances permitted to be dumped under exceptional circumstances; | | | |
| .3 -all matter permitted to be dumped; | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| 9.6 Permits to cover matter intended for dumping: | | | |
| .1 -loaded in its territory (port state jurisdiction) | | | |
| .2 -loaded by a vessel or aircraft registered in its territory or flying its flag, when loading occurs in the territory of a non-party state (flag state jurisdiction). | | | |
| 9.7 Prohibition of the incineration at sea of industrial wastes and sewage sludge. | | | |
| 9.8 Requirement of a prior special permit for incineration at sea of other wastes. | | | |
| 9.9 Legislation and regulations to: | | | |
| .1 -implement the provisions of the Convention | | | |
| .2 -provide sanctions. | | | |
| 9.10 Application of all implementing measures to: | | | |
| .1 -vessels and aircraft registered in its territory (flag state jurisdiction), | | | |
| .2 -vessels and aircraft loading in its territory matter intended for dumping (port state jurisdiction), | | | |
| .3 -vessels and aircraft and fixed and floating platforms under its jurisdiction (coastal state jurisdiction). | | | |
| 9.11 Monitoring of the marine environment for compliance. | | | |
| 9.12 Notification to IMO of: | | | |
| .1 -any additional substances prohibited; | | | |
| .2 -the substances permitted to be dumped under exceptional circumstances; | | | |
| .3 -all matter permitted to be dumped; | | | |



continued

**Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| .4 -the results of monitoring. | | | |



continued

**Matrix on Requirements of International Conventions on Marine Pollution and National Legislation**

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| .4 -the results of monitoring. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| .4 -the results of monitoring. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China | Indonesia |
|---|---|---|---|
| 10.0 **1996 Protocol to the London Convention** | Not ratified. | Not ratified. | Not ratified. |
| 10.1 Designation of an appropriate authority to: | | | |
| .1 -issue special and general permits; | | | |
| .2 -keep records of the nature and quantities of all matter permitted to be dumped, and the location, time and method of dumping; and | | | |
| .3 -monitor individually, or in collaboration with other Parties and competent international organizations, the condition of the seas. | | | |
| 10.2 Application of the precautionary approach to environmental protection. | | | |
| 10.3 Application of the polluter pays principle (whereby those it has authorized to engage in dumping or incineration at sea bear the cost of meeting the pollution prevention and control requirements for the authorized activities) | | | |
| 10.4 Prohibition of the dumping of any wastes or other matter, with the exception, at most, of those listed in Annex I. | | | |
| 10.5 Requirement of a permit for the dumping of wastes listed in Annex I, complying with Annex II (the "Waste Assessment Framework"), exercising port state and flag state jurisdiction. | | | |
| 10.6 Full prohibition of incineration at sea. | | | |
| 10.7 Application at its discretion of the Protocol or adoption of other effective national regulations to control dumping in its marine internal waters. | | | |
| 10.8 Prohibition of the export of wastes or other matter to other countries for dumping or incineration at sea. | | | |
| 10.9 Notification to IMO of: | | | |
| .1 -the permitted and actually dumped wastes and their quantities; | | | |
| .2 -effectiveness of policies; | | | |
| .3 -administrative and legislative measures taken. | | | |
| 10.9 Legislation and regulations to: | | | |
| .1 -implement the provisions of the Convention | | | |
| .2 -provide sanctions. | | | |
| 10.10 Application of all implementing measures to: | | | |
| .1 -vessels and aircraft registered in its territory (flag state | | | |
| .2 -vessels and aircraft loading in its territory matter intended for dumping (port state jurisdiction), | | | |
| .3 -vessels and aircraft and fixed and floating platforms under its jurisdiction (coastal state jurisdiction). | | | |
| .4 Monitoring of the marine environment for compliance. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Malaysia | Philippines | Republic of Korea |
|---|---|---|---|
| 10.0 **1996 Protocol to the London Convention** | Not ratified. | Not ratified. | Not ratified. |
| 10.1 Designation of an appropriate authority to: | | | |
| .1 -issue special and general permits; | | | |
| .2 -keep records of the nature and quantities of all matter permitted to be dumped, and the location, time and method of dumping; and | | | |
| .3 -monitor individually, or in collaboration with other Parties and competent international organizations, the condition of the seas. | | | |
| 10.2 Application of the precautionary approach to environmental protection. | | | |
| 10.3 Application of the polluter pays principle (whereby those it has authorized to engage in dumping or incineration at sea bear the cost of meeting the pollution prevention and control requirements for the authorized activities) | | | |
| 10.4 Prohibition of the dumping of any wastes or other matter, with the exception, at most, of those listed in Annex I. | | | |
| 10.5 Requirement of a permit for the dumping of wastes listed in Annex I, complying with Annex II (the "Waste Assessment Framework"), exercising port state and flag state jurisdiction. | | | |
| 10.6 Full prohibition of incineration at sea. | | | |
| 10.7 Application at its discretion of the Protocol or adoption of other effective national regulations to control dumping in its marine internal waters. | | | |
| 10.8 Prohibition of the export of wastes or other matter to other countries for dumping or incineration at sea. | | | |
| 10.9 Notification to IMO of: | | | |
| .1 -the permitted and actually dumped wastes and their quantities; | | | |
| .2 -effectiveness of policies; | | | |
| .3 -administrative and legislative measures taken. | | | |
| 10.9 Legislation and regulations to: | | | |
| .1 -implement the provisions of the Convention | | | |
| .2 -provide sanctions. | | | |
| 10.10 Application of all implementing measures to: | | | |
| .1 -vessels and aircraft registered in its territory (flag state | | | |
| .2 -vessels and aircraft loading in its territory matter intended for dumping (port state jurisdiction), | | | |
| .3 -vessels and aircraft and fixed and floating platforms under its jurisdiction (coastal state jurisdiction). | | | |
| .4 Monitoring of the marine environment for compliance. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand | Vietnam |
|---|---|---|---|
| 10.0 **1996 Protocol to the London Convention** | Not ratified. | Not ratified. | Not ratified. |
| 10.1 Designation of an appropriate authority to: | | | |
| .1 -issue special and general permits; | | | |
| .2 -keep records of the nature and quantities of all matter permitted to be dumped, and the location, time and method of dumping; and | | | |
| .3 -monitor individually, or in collaboration with other Parties and competent international organizations, the condition of the seas. | | | |
| 10.2 Application of the precautionary approach to environmental protection. | | | |
| 10.3 Application of the polluter pays principle (whereby those it has authorized to engage in dumping or incineration at sea bear the cost of meeting the pollution prevention and control requirements for the authorized activities) | | | |
| 10.4 Prohibition of the dumping of any wastes or other matter, with the exception, at most, of those listed in Annex I. | | | |
| 10.5 Requirement of a permit for the dumping of wastes listed in Annex I, complying with Annex II (the "Waste Assessment Framework"), exercising port state and flag state jurisdiction. | | | |
| 10.6 Full prohibition of incineration at sea. | | | |
| 10.7 Application at its discretion of the Protocol or adoption of other effective national regulations to control dumping in its marine internal waters. | | | |
| 10.8 Prohibition of the export of wastes or other matter to other countries for dumping or incineration at sea. | | | |
| 10.9 Notification to IMO of: | | | |
| .1 -the permitted and actually dumped wastes and their quantities; | | | |
| .2 -effectiveness of policies; | | | |
| .3 -administrative and legislative measures taken. | | | |
| 10.9 Legislation and regulations to: | | | |
| .1 -implement the provisions of the Convention | | | |
| .2 -provide sanctions. | | | |
| 10.10 Application of all implementing measures to: | | | |
| .1 -vessels and aircraft registered in its territory (flag state | | | |
| .2 -vessels and aircraft loading in its territory matter intended for dumping (port state jurisdiction), | | | |
| .3 -vessels and aircraft and fixed and floating platforms under its jurisdiction (coastal state jurisdiction). | | | |
| .4 Monitoring of the marine environment for compliance. | | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Cambodia | China |
|---|---|---|---|
| 11.0 | **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) 1989** | Not ratified. | Ratified in 1992. |
| 11.1 | Prohibition of the export of hazardous waste: (a) to parties prohibiting their import; (b) to parties who have not given their consent in writing; (c) where there is reason to believe that the wastes will not be managed in an environmentally sound manner; (d) to a non-party; and (e) for disposal within the area south of 60 degrees South latitude, whether or not such wastes are subject to transboundary movement. | Arts. 12-14 of the Environmental Law has general provisions on waste management including toxic and hazardous wastes | |
| 11.2 | Prohibition of the importation of hazardous and other wastes: (a) if it has reason to believe that the wastes will not be managed in an environmentally sound manner; and (b) from a non-party. | | Rules Governing Inspection of Imported Wastes Before Loading (Interim); Rules for Waste Importation Environmental Protection (Interim); Circular on the Resolute Control of Transferring Harmful Wastes from Abroad to China; State Council's Urgent Circular on Prohibiting Importation of Radioactive Pollutant Oil and Scrap Metal Matter; Rules of Preventing Environmental Pollution by Electrical-Power Installation Containing Polychlorinated Biphenyl |
| 11.3 | Appropriate measures to ensure that the transboundary movement of hazardous and other wastes only be allowed if: | | |
| .1 | -the state of export does not have the technical capacity and the necessary facilities, capacity or suitable disposal sites in order to dispose of the wastes in an environmentally sound and efficient manner; or | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Indonesia | Malaysia |
|---|---|---|---|
| 11.0 | **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) 1989** | Ratified in 1993. | Ratified in 1993. |
| 11.1 | Prohibition of the export of hazardous waste: (a) to parties prohibiting their import; (b) to parties who have not given their consent in writing; (c) where there is reason to believe that the wastes will not be managed in an environmentally sound manner; (d) to a non-party; and (e) for disposal within the area south of 60 degrees South latitude, whether or not such wastes are subject to transboundary movement. | Art.27(3), Gov.Reg.19/1994 on Hazardous and Toxic Waste Management prohibits the export of hazardous and toxic wastes without written approval from the Governments of Indonesia and the importing country. Provisions on procedures may be issued by the Minister of Trade after consultation with *Bandang Pengendalian Dampak Lingkungan*, or the Agency for Environmental Impact Management (BAPEDAL). | Customs (Prohibition of Export) and (Prohibition of Import) Orders (Amendment) (No. 2), 1993: export and import prohibited unless prior written approval is obtained from the Director General (DG) of Environmental Quality |
| 11.2 | Prohibition of the importation of hazardous and other wastes: (a) if it has reason to believe that the wastes will not be managed in an environmentally sound manner; and (b) from a non-party. | Article 49 of EMA-1997 enjoins the issuance of a license for a business and/or activity which uses imported hazardous and toxic wastes; Art.27 of Government Regulation 19/1994 prohibits importation of hazardous and toxic wastes. | Yes, unless with license from the DG. |
| 11.3 | Appropriate measures to ensure that the transboundary movement of hazardous and other wastes only be allowed if: | | |
| .1 | -the state of export does not have the technical capacity and the necessary facilities, capacity or suitable disposal sites in order to dispose of the wastes in an environmentally sound and efficient manner; or | | DG, in exercising his duties, will ensure that import and export of toxic and hazardous substances are managed by approved facilities and in an environmentally sound manner |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Philippines | Republic of Korea |
|---|---|---|---|
| 11.0 | **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) 1989** | Ratified in 1993. | Ratified in 1994. |
| 11.1 | Prohibition of the export of hazardous waste: (a) to parties prohibiting their import; (b) to parties who have not given their consent in writing; (c) where there is reason to believe that the wastes will not be managed in an environmentally sound manner; (d) to a non-party; and (e) for disposal within the area south of 60 degrees South latitude, whether or not such wastes are subject to transboundary movement. | In general, exporter of hazardous substances must obtain prior written approval from the Department of Environment and Natural Resources. (Sec. 31, Department Administrative Order [DAO] No. 29, series of 1992) | |
| 11.2 | Prohibition of the importation of hazardous and other wastes: (a) if it has reason to believe that the wastes will not be managed in an environmentally sound manner; and (b) from a non-party. | In general, importation or bringing into Phil. territory, including its maritime economic zones, of any amount of hazardous and nuclear wastes in any part of the Philippines w/o DENR clearance is prohibited (Sec.13, the Toxic Substances, Hazardous and Nuclear Wastes Control Act [RA 6969]). | |
| 11.3 | Appropriate measures to ensure that the transboundary movement of hazardous and other wastes only be allowed if: | | |
| .1 | -the state of export does not have the technical capacity and the necessary facilities, capacity or suitable disposal sites in order to dispose of the wastes in an environmentally sound and efficient manner; or | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Singapore | Thailand |
|---|---|---|---|
| 11.0 | **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) 1989** | Ratified in 1996. | Not ratified. |
| 11.1 | Prohibition of the export of hazardous waste: (a) to parties prohibiting their import; (b) to parties who have not given their consent in writing; (c) where there is reason to believe that the wastes will not be managed in an environmentally sound manner; (d) to a non-party; and (e) for disposal within the area south of 60 degrees South latitude, whether or not such wastes are subject to transboundary movement. | Yes, under Sec. 9 of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. Section 23, Hazardous Waste (Control of Export, Import and Transit) Act 1997 prohibits the grant of a Basel permit or a special permit if the Director of Hazardous Waste is satisfied that the grant could result in hazardous or other waste being brought into Antarctica. | Hazardous Substances Act of 1992 provides for control of the import, export, manufacture, storage, transport, use and disposal of hazardous substances. Under the Factory Act of 1992, the Ministry of Industry may prescribe procedures for the control, storage, use, treatment and disposal of hazardous substances. |
| 11.2 | Prohibition of the importation of hazardous and other wastes: (a) if it has reason to believe that the wastes will not be managed in an environmentally sound manner; and (b) from a non-party. | Yes, under Sec. 9 of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |
| 11.3 | Appropriate measures to ensure that the transboundary movement of hazardous and other wastes only be allowed if: | | |
| .1 | -the state of export does not have the technical capacity and the necessary facilities, capacity or suitable disposal sites in order to dispose of the wastes in an environmentally sound and efficient manner; or | Yes, under Sec. 9 of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Vietnam |
|---|---|---|
| 11.0 | **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) 1989** | Not ratified. |
| 11.1 | Prohibition of the export of hazardous waste: (a) to parties prohibiting their import; (b) to parties who have not given their consent in writing; (c) where there is reason to believe that the wastes will not be managed in an environmentally sound manner; (d) to a non-party; and (e) for disposal within the area south of 60 degrees South latitude, whether or not such wastes are subject to transboundary movement. | In general, the Law on Environmental Protection (Art. 19) subjects import and export of toxic substances to approval by the "sectoral management agency" and the Ministry of Environment. A list of toxic substances is to be compiled by the government. |
| 11.2 | Prohibition of the importation of hazardous and other wastes: (a) if it has reason to believe that the wastes will not be managed in an environmentally sound manner; and (b) from a non-party. | Importation of toxic wastes is prohibited under Art. 29(6), Law on Environmental Protection. |
| 11.3 | Appropriate measures to ensure that the transboundary movement of hazardous and other wastes only be allowed if: | |
| .1 | -the state of export does not have the technical capacity and the necessary facilities, capacity or suitable disposal sites in order to dispose of the wastes in an environmentally sound and efficient manner; or | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China |
|---|---|---|
| .2 -the wastes in question are required as raw material for recycling or recovery industries in the state of import; or | | If wastes listed in Annex I of the Urgent Circular on Prohibiting Importation of Radioactive Polluted Old and Scrap Metal Matters are needed as raw material and energy for recycling, the importation shall be examined and approved by the Authority in advance (Item III). |
| .3 -the transboundary movement is in accordance with other criteria consistent with the objectives of the Convention; | | |
| 11.4 Measures to ensure that the regulatory requirements for notification and consent for transboundary movement of hazardous and other wastes are complied with. | | |
| 11.5 Measures to ensure that the requirements for environmentally sound management of the hazardous and other wastes are complied with. | | Yes. |
| 11.6 Requirement for hazardous and other wastes to be managed in an environmentally sound manner in the state of import or elsewhere. | | |
| 11.7 Prohibition of the transport or disposal of hazardous wastes by all persons under its national jurisdiction unless authorized or allowed. | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Indonesia | Malaysia |
|---|---|---|
| .2 -the wastes in question are required as raw material for recycling or recovery industries in the state of import; or | | |
| .3 -the transboundary movement is in accordance with other criteria consistent with the objectives of the Convention; | | |
| 11.4 Measures to ensure that the regulatory requirements for notification and consent for transboundary movement of hazardous and other wastes are complied with. | | |
| 11.5 Measures to ensure that the requirements for environmentally sound management of the hazardous and other wastes are complied with. | Decision of the Head of the Agency for Environmental Impact Control No. 68 of 1994 regarding Procedures on How to Apply for a Permit for the Storing, Collecting, Operation of Processing Equipment, Management and the Final Discharge of Hazardous and Toxic Substances and the Decision of the Head of the Agency for Environmental Impact Control No. KEP-01/BAPEDAL/09/1995 regarding Procedures and Technical Requirements in Storing and Collecting Hazardous and Toxic Substances and Wastes | EQ (Scheduled Wastes) Regulations, 1989; EQ (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order, 1989; Guidelines for the Storage of Scheduled Wastes, 1993 |
| 11.6 Requirement for hazardous and other wastes to be managed in an environmentally sound manner in the state of import or elsewhere. | Yes. Gov. Reg. 19/1994 on Hazardous and Toxic Waste Management | |
| 11.7 Prohibition of the transport or disposal of hazardous wastes by all persons under its national jurisdiction unless authorized or allowed. | | Yes, Sec. 34(b), EQA 74 (amended in 1996) requires prior DG permission for transit, disposal, sending, receiving and proper storage and labeling of wastes; EQ (Scheduled Wastes) Regulation, 1989 |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Philippines | Republic of Korea |
|---|---|---|
| .2 -the wastes in question are required as raw material for recycling or recovery industries in the state of import; or | | |
| .3 -the transboundary movement is in accordance with other criteria consistent with the objectives of the Convention; | | |
| 11.4 Measures to ensure that the regulatory requirements for notification and consent for transboundary movement of hazardous and other wastes are complied with. | | |
| 11.5 Measures to ensure that the requirements for environmentally sound management of the hazardous and other wastes are complied with. | Yes. Sec 24, DAO 29 s.1992 for hazardous wastes generated within the country | |
| 11.6 Requirement for hazardous and other wastes to be managed in an environmentally sound manner in the state of import or elsewhere. | | |
| 11.7 Prohibition of the transport or disposal of hazardous wastes by all persons under its national jurisdiction unless authorized or allowed. | Yes. RA 6969 and DAO No. 29, s.1992. | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand |
|---|---|---|
| .2 -the wastes in question are required as raw material for recycling or recovery industries in the state of import; or | Yes, under Sec. 9 of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |
| .3 -the transboundary movement is in accordance with other criteria consistent with the objectives of the Convention; | Yes, under Sec. 9, of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |
| 11.4 Measures to ensure that the regulatory requirements for notification and consent for transboundary movement of hazardous and other wastes are complied with. | Yes, under Sec. 9, of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |
| 11.5 Measures to ensure that the requirements for environmentally sound management of the hazardous and other wastes are complied with. | Yes, under Sec. 9 of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |
| 11.6 Requirement for hazardous and other wastes to be managed in an environmentally sound manner in the state of import or elsewhere. | Yes, under Sec. 14, of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |
| 11.7 Prohibition of the transport or disposal of hazardous wastes by all persons under its national jurisdiction unless authorized or allowed. | Sec. 25 (prohibition of import) and Sec. 26 (prohibition of export), The Hazardous Waste (Control of Export, Import and Transit) Act of 1997 | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Vietnam |
|---|---|
| .2 -the wastes in question are required as raw material for recycling or recovery industries in the state of import; or | |
| .3 -the transboundary movement is in accordance with other criteria consistent with the objectives of the Convention; | |
| 11.4 Measures to ensure that the regulatory requirements for notification and consent for transboundary movement of hazardous and other wastes are complied with. | |
| 11.5 Measures to ensure that the requirements for environmentally sound management of the hazardous and other wastes are complied with. | Art. 23 requires organizations and individuals producing, transporting, trading, using, storing or disposing of toxic substances to comply with regulations on human safety and avoid causing environmental degradation or pollution. |
| 11.6 Requirement for hazardous and other wastes to be managed in an environmentally sound manner in the state of import or elsewhere. | |
| 11.7 Prohibition of the transport or disposal of hazardous wastes by all persons under its national jurisdiction unless authorized or allowed. | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | | Cambodia | China |
|---|---|---|---|
| 11.8 | Requirement for hazardous wastes subject of a transboundary movement to be packaged, labeled, and transported in conformity with generally accepted and recognized international rules and standards. | | Rules Governing the Inspection of Packing of Exported Dangerous Goods by Sea-Going Transportation (Interim) |
| 11.9 | Requirement that hazardous and other wastes be accompanied by a movement document, which shall be duly signed by all concerned, from commencement to end of the transboundary movement. | | |
| 11.10 | Measures to ensure that the generation of hazardous and other wastes is reduced to a minimum, taking into account social, technological and economic aspects. | | |
| 11.11 | Ensuring the availability of adequate disposal facilities. | | |
| 11.12 | Measures to ensure that the transboundary movement of hazardous and other wastes is reduced to the minimum and is conducted in a manner which will protect human health and the environment against adverse effects. | | |
| 11.13 | Legislation to: | | |
| .1 | -give effect to the provisions of the Convention, | | |
| .2 | -criminal sanctions for illegal traffic in hazardous and other wastes. | | |
| 11.14 | Designation of a competent authority/ies and a focal point to carry out the functions necessary for giving effect to the provision of the Convention, including the receipt of and response to notifications as a state of transit. | | Environmental Protection Administration; Customs of China |
| 11.15 | Notification to the Conference of Parties through the Secretariat of competent authorities and focal points designated and other information | | |
| 11.16 | Notification to the Secretariat of wastes other than those in Annexes I and II considered hazardous under its national legislation ("national definition of hazardous wastes"), and other | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Indonesia | Malaysia |
|---|---|---|---|
| 11.8 | Requirement for hazardous wastes subject of a transboundary movement to be packaged, labeled, and transported in conformity with generally accepted and recognized international rules and standards. | Art. 29, Gov. Reg.19/1994 | |
| 11.9 | Requirement that hazardous and other wastes be accompanied by a movement document, which shall be duly signed by all concerned, from commencement to end of the transboundary movement. | | Consignment notes of delivery of wastes to treatment and disposal facilities required. |
| 11.10 | Measures to ensure that the generation of hazardous and other wastes is reduced to a minimum, taking into account social, technological and economic aspects. | | |
| 11.11 | Ensuring the availability of adequate disposal facilities. | | treatment and disposal of waste to be undertaken only in prescribed premises; EQ (Prescribed Premises) Scheduled Waste Treatment and Disposal Facilities Order and Regulations, 1989 on content of toxic and hazardous wastes |
| 11.12 | Measures to ensure that the transboundary movement of hazardous and other wastes is reduced to the minimum and is conducted in a manner which will protect human health and the environment against adverse effects. | | |
| 11.13 | Legislation to: | | |
| .1 | -give effect to the provisions of the Convention, | | EQ 93 on import and export of wastes |
| .2 | -criminal sanctions for illegal traffic in hazardous and other wastes. | Article 43, EMA-1997 | Sec. 27, EQA 1974 |
| 11.14 | Designation of a competent authority/ies and a focal point to carry out the functions necessary for giving effect to the provision of the Convention, including the receipt of and response to notifications as a state of transit. | | DG of EQ or designated competent Authority and Focal Point |
| 11.15 | Notification to the Conference of Parties through the Secretariat of competent authorities and focal points designated and other information | | |
| 11.16 | Notification to the Secretariat of wastes other than those in Annexes I and II considered hazardous under its national legislation ("national definition of hazardous wastes"), and other | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Philippines | Republic of Korea |
|---|---|---|---|
| 11.8 | Requirement for hazardous wastes subject of a transboundary movement to be packaged, labeled, and transported in conformity with generally accepted and recognized international rules and standards. | Yes. Sec.29, DAO 29 s.1992, as regards labeling, which must be conspicuously marked in paint, decals or other permanent form of markings. | |
| 11.9 | Requirement that hazardous and other wastes be accompanied by a movement document, which shall be duly signed by all concerned, from commencement to end of the transboundary movement. | DAO 29, s. 1992 requires a "waste transport record" containing particulars in respect of waste treatment and disposal. | |
| 11.10 | Measures to ensure that the generation of hazardous and other wastes is reduced to a minimum, taking into account social, technological and economic aspects. | | |
| 11.11 | Ensuring the availability of adequate disposal facilities. | | |
| 11.12 | Measures to ensure that the transboundary movement of hazardous and other wastes is reduced to the minimum and is conducted in a manner which will protect human health and the environment against adverse effects. | | |
| 11.13 | Legislation to: | | |
| .1 | -give effect to the provisions of the Convention, | in part, RA 6969 | |
| .2 | -criminal sanctions for illegal traffic in hazardous and other wastes. | Secs. 13 and 14, RA 6969 | |
| 11.14 | Designation of a competent authority/ies and a focal point to carry out the functions necessary for giving effect to the provision of the Convention, including the receipt of and response to notifications as a state of transit. | Sec. 6(h), RA 6969 designates Department of Environment and Natural Resources as to toxic and hazardous substances. | |
| 11.15 | Notification to the Conference of Parties through the Secretariat of competent authorities and focal points designated and other information | | |
| 11.16 | Notification to the Secretariat of wastes other than those in Annexes I and II considered hazardous under its national legislation ("national definition of hazardous wastes"), and other | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Singapore | Thailand |
|---|---|---|---|
| 11.8 | Requirement for hazardous wastes subject of a transboundary movement to be packaged, labeled, and transported in conformity with generally accepted and recognized international rules and standards. | import and export permits, shall specify the method of transport by which the hazardous or other wastes are to be imported exported (Secs. 13 and 14, the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998) | |
| 11.9 | Requirement that hazardous and other wastes be accompanied by a movement document, which shall be duly signed by all concerned, from commencement to end of the transboundary movement. | Yes, under Sec. 17, of the Hazardous Waste (Control of Export, Import and Transit) Regulations 1998. | |
| 11.10 | Measures to ensure that the generation of hazardous and other wastes is reduced to a minimum, taking into account social, technological and economic aspects. | | |
| 11.11 | Ensuring the availability of adequate disposal facilities. | | |
| 11.12 | Measures to ensure that the transboundary movement of hazardous and other wastes is reduced to the minimum and is conducted in a manner which will protect human health and the environment against adverse effects. | | |
| 11.13 | Legislation to: | | |
| .1 | -give effect to the provisions of the Convention, | The Hazardous Waste (Control of Export, Import and Transit) Act 1997 | |
| .2 | -criminal sanctions for illegal traffic in hazardous and other wastes. | Secs. 25 and 26, The Hazardous Waste (Control of Export, Import and Transit) Act 1997 | |
| 11.14 | Designation of a competent authority/ies and a focal point to carry out the functions necessary for giving effect to the provision of the Convention, including the receipt of and response to notifications as a state of transit. | Director of Hazardous Wastes | |
| 11.15 | Notification to the Conference of Parties through the Secretariat of competent authorities and focal points designated and other information | | |
| 11.16 | Notification to the Secretariat of wastes other than those in Annexes I and II considered hazardous under its national legislation ("national definition of hazardous wastes"), and other | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | | Vietnam |
|---|---|---|
| 11.8 | Requirement for hazardous wastes subject of a transboundary movement to be packaged, labeled, and transported in conformity with generally accepted and recognized international rules and standards. | |
| 11.9 | Requirement that hazardous and other wastes be accompanied by a movement document, which shall be duly signed by all concerned, from commencement to end of the transboundary movement. | |
| 11.10 | Measures to ensure that the generation of hazardous and other wastes is reduced to a minimum, taking into account social, technological and economic aspects. | |
| 11.11 | Ensuring the availability of adequate disposal facilities. | |
| 11.12 | Measures to ensure that the transboundary movement of hazardous and other wastes is reduced to the minimum and is conducted in a manner which will protect human health and the environment against adverse effects. | |
| 11.13 | Legislation to: | |
| .1 | -give effect to the provisions of the Convention, | |
| .2 | -criminal sanctions for illegal traffic in hazardous and other wastes. | |
| 11.14 | Designation of a competent authority/ies and a focal point to carry out the functions necessary for giving effect to the provision of the Convention, including the receipt of and response to notifications as a state of transit. | |
| 11.15 | Notification to the Conference of Parties through the Secretariat of competent authorities and focal points designated and other information | |
| 11.16 | Notification to the Secretariat of wastes other than those in Annexes I and II considered hazardous under its national legislation ("national definition of hazardous wastes"), and other | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Cambodia | China |
|---|---|---|---|
| **12.0** | **Global Programme of Action on the Protection of the Marine Environment from Land-Based Activities 1995** | Participated. | Participated. |
| 12.1 | Identification and assessment of problems. | | Yes. Chapters II and IV of the Marine Environmental Protection Law (1983; hereinafter, MEPL) deal with land-based sources of pollution; Regulations Concerning Prevention of Pollution Damage to the Marine Environment by Land-Based Pollution, 1990 (RLP) |
| 12.2 | Establishment of priorities. | | |
| 12.3 | Setting management objectives for priority problems. | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Indonesia | Malaysia |
|---|---|---|---|
| **12.0** | **Global Programme of Action on the Protection of the Marine Environment from Land-Based Activities 1995** | Participated. | Participated. |
| 12.1 | Identification and assessment of problems. | | Under Secs. 24 and 25, EQA 74, pollution of the soil or surface of any land, or of any inland water except as may be considered acceptable conditions by the Minister in consultation with the Environmental Quality Council, is prohibited. |
| 12.2 | Establishment of priorities. | | |
| 12.3 | Setting management objectives for priority problems. | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | | Philippines | Republic of Korea |
|---|---|---|---|
| **12.0** | **Global Programme of Action on the Protection of the Marine Environment from Land-Based Activities 1995** | Participated. | Participated. |
| 12.1 | Identification and assessment of problems. | Sec. 19, Environment Code: The production, utilization, storage, distribution and disposal of hazardous, toxic and other substances including wastes from normal operations and accidental spills shall be regulated by the appropriate government agencies. | Water Quality Conservation Act, the major regulatory statute for controlling land-based sources of pollution |
| 12.2 | Establishment of priorities. | | |
| 12.3 | Setting management objectives for priority problems. | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Singapore | Thailand |
|---|---|---|---|
| **12.0** | **Global Programme of Action on the Protection of the Marine Environment from Land-Based Activities 1995** | Did not participate. | Participated. |
| 12.1 | Identification and assessment of problems. | Prevention of Pollution of the Sea Act of 1990 (PPSA) | Under Art. 53 of the Enhancement and Conservation of National Environmental Quality Act, the Pollution Control Committee has the power to recommend legislative amendments or improvements, incentive measures and an action plan on pollution. |
| 12.2 | Establishment of priorities. | | |
| 12.3 | Setting management objectives for priority problems. | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Vietnam |
|---|---|---|
| **12.0** | **Global Programme of Action on the Protection of the Marine Environment from Land-Based Activities 1995** | Did not participate. |
| 12.1 | Identification and assessment of problems. | |
| 12.2 | Establishment of priorities. | "The Government of Vietnam adopts priority policies towards countries, international organisations, foreign organisations and individuals with respect to x x x development and implementation of projects for environmental improvement, control of environmental incidents, environmental pollution, environmental degradation and projects for wastes treatment in Vietnam." Art. 46, Law on Environmental Protection |
| 12.3 | Setting management objectives for priority problems. | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | | Cambodia | China |
|---|---|---|---|
| 12.4 | Identification, evaluation and selection of strategies and measures. | | MEPL classifies land-based sources; system of permits (Art. 18, MEPL and Arts. 5-8, RLP), Interim Measures for Governing Water Pollutants Discharge Permit and Measures Governing Municipal Sewage Discharge Permit; system of reporting; control of total amount of discharge; levy of discharge fees for discharges in excess of what is allowable; Interim Measures on Levying Waste Discharge Fee |
| 12.5 | Development of specific criteria to evaluate the effectiveness of such strategies and programmes. | | |
| 12.6 | Administrative and management structures necessary to support the national programmes of action. | | Environmental Protection Department under the State Council, in charge of prevention of marine pollution from land-based sources |
| 12.7 | National action on contaminants by the following source category: | Arts. 12-14 of the Law on Environmental Protection contain general provisions on waste management. | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | | Indonesia | Malaysia |
|---|---|---|---|
| 12.4 | Identification, evaluation and selection of strategies and measures. | | |
| 12.5 | Development of specific criteria to evaluate the effectiveness of such strategies and programmes. | | |
| 12.6 | Administrative and management structures necessary to support the national programmes of action. | | |
| 12.7 | National action on contaminants by the following source category: | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| | REQUIREMENTS | Philippines | Republic of Korea |
|---|---|---|---|
| 12.4 | Identification, evaluation and selection of strategies and measures. | the Philippine Environment Code, PD 1152, Title V (Waste Management) requires all provinces, cities and municipalities to prepare and implement waste management programs and directs that solid waste disposal can only be by sanitary landfill, incineration or composting; any other method must first be approved by the competent government authority; Section 17b2(vi) of the Local Government Code of 1991, RA 7160 requires municipalities to provide a solid waste disposal system or establish an environmental management system and services or facilities related to general hygiene and sanitation for their constituents; the Sanitation Code (1975), PD 856 | |
| 12.5 | Development of specific criteria to evaluate the effectiveness of such strategies and programmes. | | |
| 12.6 | Administrative and management structures necessary to support the national programmes of action. | | MOMAF Ordinances |
| 12.7 | National action on contaminants by the following source category: | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | | Singapore | Thailand |
|---|---|---|---|
| 12.4 | Identification, evaluation and selection of strategies and measures. | | |
| 12.5 | Development of specific criteria to evaluate the effectiveness of such strategies and programmes. | | |
| 12.6 | Administrative and management structures necessary to support the national programmes of action. | | |
| 12.7 | National action on contaminants by the following source category: | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | | Vietnam |
|---|---|---|
| 12.4 | Identification, evaluation and selection of strategies and measures. | |
| 12.5 | Development of specific criteria to evaluate the effectiveness of such strategies and programmes. | |
| 12.6 | Administrative and management structures necessary to support the national programmes of action. | |
| 12.7 | National action on contaminants by the following source category: | Law on Environmental Protection, Arts. 14, 23, 26, 29 and 46 deal with land-based sources of marine pollution, namely, toxic and hazardous substances, grease or oil, radioactive substances, chemicals, fertilizers and pesticides, refuse, wastewater, and wastes. |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China |
|---|---|---|
| .1 -Sewage | | MEPL sets forth the different measures for dealing with land-based sewage in general while the RLP specifies the measures and provides the punishment case of violation; Act on the Disposal of Sewage, Excreta and Livestock Wastewater (1991); Measures Governing Sewage Treatment Facilities and Environmental Protection; Interim Measures for Governing Permitting License of Sewage Discharge; Measures Governing Permitting License of Municipal Sewage Discharge |
| .2 -Persistent organic pollutants (POPs) | | |
| .3 -Radioactive substances | | It is prohibited to discharge wastewater containing high-level and medium-level radioactive matter into the sea. Any discharge of wastewater containing low-level radioactive matter into the sea must be carried out in strict compliance with the state regulations and standards concerning radioactive protection (Article 19, MEPL; Article 14, RLP). |
| .4 -Heavy metals | | Article 15, RLP |
| .5 -Oils (hydrocarbons) | | |
| .6 -Nutrients | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Indonesia | Malaysia |
|---|---|---|
| .1 -Sewage | | EQ (Sewage and Industrial Effluent) Regulations of 1979 on control of municipal and industrial waste water pollution; EQA 74 on pollution of any soil/surface of any land and emission, discharge, deposit of any environmentally hazardous substance, pollutants or wastes into any inland water and into the atmosphere. |
| .2 -Persistent organic pollutants (POPs) | | |
| .3 -Radioactive substances | | |
| .4 -Heavy metals | regulation issued by the Minister of Mines and Energy No. 04/P/M/Pertamben/1997 on the Prevention and Abatement of Disturbances and Pollution as a Consequence of General Mining Undertakings (mining operations other than in oil and gas) | |
| .5 -Oils (hydrocarbons) | | |
| .6 -Nutrients | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Philippines | Republic of Korea |
|---|---|---|
| .1 -Sewage | | |
| .2 -Persistent organic pollutants (POPs) | | |
| .3 -Radioactive substances | MC 03-94, dumping of radioactive materials into the sea shall be regulated by pertinent rules and regulations to be prescribed by appropriate government agencies such as the Philippine Nuclear Research Institute, Department of Health, EMB and the PCG in consultation with each other | |
| .4 -Heavy metals | the Revised Forestry Code of the Philippines, PD 705 | |
| .5 -Oils (hydrocarbons) | | |
| .6 -Nutrients | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand |
|---|---|---|
| .1 -Sewage | Water Pollution Control and Drainage Act; Trade Effluent Regulations | |
| .2 -Persistent organic pollutants (POPs) | | |
| .3 -Radioactive substances | | |
| .4 -Heavy metals | | |
| .5 -Oils (hydrocarbons) | Sec. 3, PPSA prohibits the discharge or oil or oily mixture into Singapore waters from any place on land, or from any apparatus used for transferring oil from or to any ship (whether to or from a place on land or to or from another ship) | |
| .6 -Nutrients | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Vietnam |
|---|---|
| .1 -Sewage | |
| .2 -Persistent organic pollutants (POPs) | |
| .3 -Radioactive substances | |
| .4 -Heavy metals | The Ordinance on Mineral Resources contains some provisions that have some bearing on the dumping of mine tailings and other wastes into rivers and other bodies of water. |
| .5 -Oils (hydrocarbons) | |
| .6 -Nutrients | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Cambodia | China |
|---|---|---|
| .7 -Sediment mobilization | | |
| .8 -Litter | | Measures Governing Municipal Domestic Garbage |
| .9 -Physical alterations and destruction of habitats | | Regulations Governing Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects, 1990; Regulations on the Protection of Underwater Cultural Relics |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Indonesia | Malaysia |
|---|---|---|
| .7 -Sediment mobilization | | |
| .8 -Litter | | |
| .9 -Physical alterations and destruction of habitats | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Philippines | Republic of Korea |
|---|---|---|
| .7 -Sediment mobilization | | |
| .8 -Litter | | |
| .9 -Physical alterations and destruction of habitats | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Singapore | Thailand |
|---|---|---|
| .7 -Sediment mobilization | | |
| .8 -Litter | Environment and Public Health Act | |
| .9 -Physical alterations and destruction of habitats | | |



continued

## Matrix on Requirements of International Conventions on Marine Pollution and National Legislation

| REQUIREMENTS | Vietnam |
|---|---|
| .7 -Sediment mobilization | |
| .8 -Litter | |
| .9 -Physical alterations and destruction of habitats | |