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WORLD MARITIME UNIVERSITY

Malmö, Sweden

**THE MARINE ENVIRONMENT PROTECTION
LEGISLATION IN CHINA**

By

WANG Liyu

The People's Republic of China

A dissertation submitted to the World Maritime University in partial
fulfilment of the requirement for the award of the degree of

MASTER OF SCIENCE

in

GENERAL MARITIME ADMINISTRATION

&

ENVIRONMENT PROTECTION

1995

DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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WANG Liyu
Malmo, Sweden
16th October, 1995

Title of Dissertation: **The Marine Environment Protection Legislation in China**

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As a result of her remarkable economic reform and development and the rising of environment consciousness, China's marine environment protection legislation made significant progress during the last one and half decades. The legislation is based upon China's sustainable development strategies.

In 1982, the Marine Environmental Protection Law of China was enacted. The Law provides principles and major legal measures to prevent and control marine environment pollution, which includes, *inter alia*, the rules regarding special protection of important sea areas, submission of Environment Impact Assessment, requirements of pollution prevention facilities and documents, prohibition of or restriction on the discharge of certain pollutants, mandates of different law enforcement agencies, accident management, responsibilities imposed upon polluters, and procedures for dispute settlement. The 1982 Law is widely viewed as the basic law and the cornerstone of China's marine environment protection legislation.

To implement the 1982 Law, six Regulations were subsequently promulgated, which adopt concrete measures, specific standards, and different procedures to combat the major sources of marine pollution, namely, land-based pollutants and pollutants from vessels, dumping, offshore oil exploration and exploitation, coastal constructions, and ship-breaking. The six Regulations are the main components of the legal regime for marine environment protection.

In response to the magnitude and complexity of current marine environmental pollution, China's marine environment protection legislation has a multi-fold structure, composed of national laws and regulations as well as relevant international treaties ratified and accepted by China.

In order to maximise its effect, the legislation adopts both precaution principle and polluter-pays-principle, keeps balance between uniformity and flexibility, combines regulatory and remedial approaches, and imposes positive obligations as well as negative ones.

At present stage, China's marine environment protection legislation is mainly of administrative nature, with administrative agencies playing major role in the formulation and implementation of the legislation.

Despite its achievements, there is still room left for the improvement of China's marine environment protection legislation and its implementation. In this respect, it is essential to raise environmental awareness, strengthen institutional, technical and economic capacity of implementation, and enhance co-operation and co-ordination at both national and international levels.

List of the Abbreviations

NPCC	National People's Congress of China
PRC	People's Republic of China
MARPOL	International Convention for the Prevention of Pollution from Ships
CLC	International Convention on Civil Liability for Oil Pollution
NEPA	National Environmental Protection Agency
EPB	Environmental Protection Bureau
HSA	Harbour Superintendency Administration
UNCLOS	United Nations Convention on the Law of the Sea of 1982
IMO	International Maritime Organisation
EIA	Environmental Impact Assessment
OPRC	Convention International Convention on Oil Pollution Preparedness, Response and Co-operation

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1 Introduction

The past three decades saw a significant progress in legislation governing marine pollution at both national and international levels.

Given the fact that out of all pollutants which reach marine environment, seventy percent originates from the areas subject to national jurisdiction (Oidke, C.O.(1987), page 61), national legislation plays a far more important role in this regard.

China is one of the major maritime countries, with a coastline of 18,000 (exclusive of coastlines of islands) kilometres and nearly 4,000,000 square kilometres sea areas under her jurisdiction. Partly as a result of rapid development of economy, China also faces an increasingly serious problem of marine pollution. Against such background and with the awareness of environment protection, China has established her legal regime in the area of marine environment protection, through enacting legislation as well as ratifying relevant international treaties.

Given her magnitude in terms of both economy and politics, China's legislative efforts play an increasingly important role in this area. Such efforts, however, are not well known to the outside world due to various reasons. This is not favourable either for the outside world or for China herself.

In the first place, this dissertation is aimed at bringing a happy conclusion to the author's two-year studies at the World Maritime University. In addition, the dissertation is expected to serve the following three purposes:

1. To make a comprehensive study of China's legislation governing marine environment. On one hand, during past one and half decades, China's legislation for marine environment has made impressive progress, with relevant laws and

- regulations being adopted and law enforcement agencies established; on the other hand, updated, in-depth study of this legislation has not been high on the agenda of Chinese academic society. This dissertation is partly aimed at bridging this gap.
2. To make the legislation better known to the outside world. Marine environment is, by nature, a world-wide issue, which results in the fact that the legislation of one country may probably have consequences and implications on other countries, even on international community as a whole. As one of the major maritime country with a rapidly growing economy, China's legislation for marine environment, as a case study, may be of interest to lawyers outside the country.
 3. To contribute to China's economic development. Marine environment related businesses, such as shipping, offshore oil exploration and exploitation and port construction, are among the fastest growing sectors of China's economy, which, in turn, attract significant amount of foreign direct investment. In this sense, marine environment legislation consists of an essential part of China's overall "investment climate". An introduction to this legislation would enhance foreign investors' understanding of China's legal regime and thus contribute to China's economic co-operation with the international business community.

The dissertation is, in addition to this Introduction, composed of four major parts in chapter 2, 3, 4, and 5 respectively.

Chapter 2 first describes briefly the history of China' marine environment legislation in the context of the development of China's overall environmental legislation and policy. The chapter then goes on to explain how China's marine environment policy becomes laws and regulations by giving a sketch of China legislative structure, i.e. legislative powers of different State agencies and the legislative procedure of the main legislative agency, the National People's Congress of China (NPC). The last part of this chapter depicts the structure of China's marine legislation, through introducing all legal components in this area, the Constitution, the relevant laws and regulations, and their respective status in the hierarchy of the overall legal system and their relations.

Chapter 3 concentrates on the basic law in the area of marine environment, the 1982 Marine Environmental Protection Law. The author discusses in-depth the background, the legislative purpose, the applicable scope, the regulated subjects, and the management regime of the 1982 Law, as well as the authorities which involve in the enforcement of the Law and the legal liabilities caused by any violation of the Law. This chapter ends up with an introduction to the five main systems governing the prevention and control of pollution caused, respectively, by coastal construction projects, offshore oil exploration and exploitation, land-based pollutants, ships, and dumping of wastes.

Chapter 4 discusses the six major Regulations governing marine environment protection, namely, the 1983 Regulation on Environmental Protection in Offshore Oil Exploration and Exploitation, the 1983 Regulation on the Prevention of Pollution of Sea by Vessels, the 1985 Regulation on the dumping of wastes in the Sea, the 1988 Regulation on the Prevention of Environmental Pollution by Ship-breaking, the 1990 Regulation on the Prevention of Pollution Damage to Marine Environment by Land-based Pollutants, and the 1990 Regulation on the Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects. In addition to introduction to the major provisions in these Regulations, the author also tries to depict the background, including relevant provisions stipulated in international conventions, against which these Regulations were formulated.

Chapter 5 evaluates China's legislation for marine environment. It starts with an analysis of the structure and principles of the legislation, and goes on with discussion on its four main features, namely, the balance between uniformity and flexibility, the combination of regulatory and remedial approaches, the adoption of positive and negative obligations, and the administrative nature of the legislation. Based upon the evaluation, the author concludes the dissertation by recommending the following measures to improve the current legislation: raising environmental awareness, strengthening institutional, technical, and economic capacity to implement the legislation, strengthening co-operation and co-ordination within the country as

well as with international community, and developing legislation for control of some specific forms of marine pollution.

This dissertation is mainly devoted to China's legislation regarding the prevention and control of marine pollution, however, it also discusses, to the extent necessary, the following two aspects:

1. **China's environment policy.** Marine environment legislation reflects the environment policy of a country, or, rather, the former is a means to carry out the latter. In most cases, environment policies explain the "why" behind the principles and norms adopted in environment legislation. In this sense, the discussion of China's environment policies provides an effective means to better understanding of her marine environment legislation.
2. **Relevant international law and practice.** International law and practice in the area of marine environment have exerted significant influence on China's marine environment legislation. China's marine environment legislation is largely developed on the basis of internationally accepted standards, norms and requirements. In this sense, it is both useful and interesting to make a comparison between China's legislation and international practice.

2 The marine environment protection legislation in general

2.1 The history of China's legislation for marine environment

Marine environment is an essential part of the overall environment, which results in the fact that legislation for marine environment is an integrated component of environment legislation as a whole. Furthermore, environment legislation reflects, by and large, the environment policy of the country concerned. The history of China's legislation for marine environment will, therefore, be discussed in the context of the evolution of China's environment policy and environment legislation.

The evolution of China's environment legislation has experienced three stages, which took place respectively in 1970', 1980' and 1990'.

2.1.1 1970s: the embryonic stage

Although, environment problem, as a direct result of intensive human activities, has a long history in China, as in the other parts of the world, the environment legislation did not come into being in China until 1970'. This is partly due to the lack of awareness of environment and partly due to the lack of proper legislative mechanism.

In preparation for the 1972 United Nations Human Environmental Conference, which was to be held in Stockholm, environmental consciousness was greatly enhanced in China. Shortly after the Stockholm Conference, the First National Conference on Environment Protection was held in 1973 in Beijing. The Conference developed a "Thirty-two-character policy" and adopted Some Stipulations on Protecting and Improving Environment (trial draft), which served as the guidelines for environmental protection work of the whole country (Zhang, K(1994), page 198).

The Thirty-two-character policy is as follows:

Making overall planning, reasonable layout, comprehensive utilisation, turning harm into good, relying on the masses, everybody sets to work, protection environment and bringing benefit to the people (Zhang, K(1994), page 199).

This policy laid emphasis on better planning, better utilisation of resources and greater reliance on the public. Although, strictly speaking, the Thirty-two-character policy is not a part of legislation, with no legal binding effect, actually it had significant effect both on the Government and on the people.

Since the adoption of the Thirty-two-character policy, environmental protection work started in China in earnest. The government began to pay close attention to the negative effect of the so-called "three wastes"(waste water, waste gas

and industrial residue). It was stressed to improve the efficiency of utilisation of natural resources and the recycling of the above-mentioned "three wastes".

In order to implement the newly formulated environment policy, Chinese Government adopted three major systems, out of its own experience as well as that of other countries, as followed:

1. The first system was conveniently called "three simultaneousness", i.e. the facilities for preventing and controlling pollution must be designed, constructed and commissioned simultaneously with the main project.
2. The second was a system of levies on pollutant discharges, i.e. units and individuals who discharge sewage must pay for the excess pollution discharge or expenses for the discharge of sewage and SO₂. Most of the fees were used to subsidise enterprises for the prevention and control of pollution in the form of appropriation and loans. Some 20 percent of the funds were used for the construction of the environmental protection system
3. The third is the system of environmental impact assessment.

Although, the Thirty-two-character policy and the above mentioned three systems are still valid, they are now referred to as "the old three systems", which reflects the rapid development of China's environment policy and legislation.

The Thirty-two-character policy and "the old three systems" were not specifically designed for marine environment protection. However, given the fact that the sea is the final destination of most of the pollutants or wastes, the policy and systems were bound to have positive effect on marine environment protection.

Shortly after the end of the Cultural Revolution, the fifth NPCC adopted the Constitution in 1978, which, for the first time, makes explicit stipulations on environmental protection. The Constitution of 1978 states that the State protects environment and natural resources. Although its legal language is simple, it provides a constitutional basis for all environment legislation to be formulated and thus lays the foundation of the whole legal regime in this area. Therefore, this constitutional stipulation is of great importance.

Only one year after the adoption of the 1978 Constitution, the Environmental Protection Law (for trial implementation) was adopted by the Standing Committee of the NPC in 1979, which affirmed above-mentioned Thirty -two-character policy and the policy of “whoever causes pollution shall be responsible for its elimination” in the legal terms, and explicitly stated that organisations would be established and management over environmental protection would be strengthened. Since then, China’s environmental legislation has initially formed and the environment protection work has been brought into the orbit of the legal regime.

2.1.2 1980s: the establishment and maturity

In 1982, the Sixth NPC adopted a new constitution, which replaces the Constitution of 1978. The new Constitution, following its predecessor, includes one clause stipulating the basic legal principle of environment protection, which states that the State protects and improves the living environment and ecological environment, prevents and controls pollution and other public pollution.

Compared with the 1978 Constitution, the 1982 Constitution deals with environmental issues in more detail and more specifically, which reflects the fact that the people and the Government of China are increasingly aware of the importance of environment and the protection thereof.

The Second National Conference on Environmental Protection of China was held at the end of 1983. In line with the above mentioned constitutional stipulation, the conference explicitly stated that environmental protection would be regarded as a basic policy of the State. It put forward the strategic policy on simultaneously economic, urban and rural and environmental construction, simultaneous planning implementation and development, and unification in economic returns, social and environmental benefits. It defined that the strengthening of the management over the environment was regarded as the central link of environmental protection work.

After the adoption of 1982 Constitution and the convening of the second environment conference, three major policies for environmental protection gradually took shape.

1. The first policy is putting prevention first and combining prevention with control. Various preventive measures should be taken so that no or little damage would be made to environment. At the same time, pollution and damage should be energetically handled with. The main measure is to bring environmental protection into the programme and plan for the national economic and social development. The "three simultaneous systems" and the EIA system are to be implemented in order to avoid new causes of pollution.
2. The second policy is whoever causes pollution must be responsible for its elimination. It stipulates in the legal form that those who pollute the environment must be held responsible for controlling pollution and paying expenses. Major measures include the system of levies on pollution discharges, the timetable for units that have seriously polluted the environment to bring themselves under control, and prevention and controlling of industrial pollution on the bases of technical renovation.
3. The third policy is aimed at reinforcing environmental management. It specifically copes with the circumstances where there is not sufficient economic input. In such situation, the method of reinforcing management may solve some environmental problems that are caused by improper management, and may promote the increase in investment for environment. In this respect, major measures include intensifying supervision and management, implementing the environment target system, the system of quantitative examination of the comprehensive rehabilitation and control of urban environment, the system of centralised pollution control, and the system of pollution discharge permits.

The Third National Conference on Environmental Protection of China was convened in 1989, during which five new systems regarding environment protection were developed. The five new systems are as follows:

1. The first is the system to reach environmental protection targets. This system was later expressed in legal terms in Article 16 of the Environmental Protection Law, i.e. "the local people's government at all levels shall be responsible for the environmental quality of areas under their jurisdiction and take measures to improve the environmental quality." To implement this system, local government officers, such as provincial governors and mayors are to sign legal documents which provide the targets and tasks in the areas of environmental protection in their terms of office, which serve as one of the bases to evaluate the performances and achievements of their local officers.
2. The second is the system of quantitative assessment of the comprehensive rehabilitation and control of urban environment, which is composed of twenty targets in five areas, such as the assessment of the quality of air, water and urban forest. Usually, the central government evaluates the work of the thirty seven major cities while provincial governments evaluate the work of the cities directly under their administration. The result of the evaluation shall be published.
3. The third is the system of pollution discharge permits, which is composed of the registration and issuance of licences for discharge to units when necessary and of a total control of pollutant discharge.
4. The fourth is the system of centralised pollution control. While emphasising the importance of the centralisation of pollution control, this system also adopts the method of combination of the centralised pollution control and the decentralised pollution control in order to maximise the effect of this system through mobilising local authorities.
5. The fifth system sets the deadline for governments at all levels to control serious and harmful causes of pollution.

These five systems coupled with the old three systems developed during the 1970s are called eight systems of environmental management. The formulation and implementation of the three environmental policies and the eight environmental

management systems symbolises the maturity of China's environment protection policy.

In order to incorporate the above mentioned government policies into legislation, in the 1980s, the NPCC and its Standing Committee promulgated several important environmental laws, including the 1982 Marine Environmental Protection Law, the 1984 Law on Water Pollution Prevention and Control, the 1987 Law on Prevention and Control of Air Pollution and the 1989 Environmental Protection Law, which supersedes the Environmental Protection Law (for trial implementation) of 1979. Out of these four laws, the Marine Environmental Protection Law deals exclusively with the marine environment, while the Environmental Protection Law also provides the principles of legal regime governing environment protection, which applies to all areas under China's jurisdiction, including, of course, her marine environment.

In addition to the laws enacted by the NPCC and its standing committee, the central government, i.e. the State Council of the PRC, also promulgated several regulations in the area of marine environment protection in order to implement the relevant laws, including the 1983 Regulation on Environmental Protection in Offshore Oil Exploration and exploitation, the 1983 Regulation on the Prevention of Pollution of Sea Areas by Vessels, the 1985 Regulation on the Dumping of Wastes at Sea, and the 1988 Regulation on the Prevention of Environmental pollution by Ship-breaking.

The enactment of the laws and the promulgation of the regulations in the area of marine environmental in the 1980s, especially the enactment of the 1982 Marine Environmental Protection Law, indicates the establishment of China's marine environment legal regime.

During this period, China ratified the major international conventions relating to marine environment, i.e. International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), Convention on the Prevention of Marine Pollution By Dumping of Wastes and Other Matters (London Convention of 1972), International Convention relating to Intervention on the High Seas in Cases of Oil Pollution

Casualties of 1969 (Intervention Convention), and International Convention on Civil Liability for Oil Pollution Damage of 1969 (CLC Convention). China also signed 1982 United Nations Convention on the Law of the Sea, a major part of which is also devoted to marine environmental issues.

2.1.3 1990s: further developments

In addition to the implementation of the relevant laws and regulations governing environmental protection, the first half of the 1990s also saw some further developments in policy-making as well as legislation in this area. The rapid expansion of China's economy, as a result of successful reform, and the continuous growth of her population, although largely under control, necessitate more effective and efficient environmental protection regime.

After a cool-headed review of the process of the world economic development and an in-depth analysis of the present global environment problems, and guided by the experience and lessons from China's rapid economic development in the past decades, shortly after 1992 United Nations Conference on Environment and Development, the Chinese government adopted the following ten measures regarding environment and development:

1. to pursue the strategy of sustainable development;
2. to adopt effective measures to prevent and control industrial pollution;
3. to carry out comprehensive rehabilitation and control of urban environmental in an in-depth way and earnestly deal with the so-called "four evils" (polluted air, polluted water, solid wastes and noise) in cities;
4. to raise the efficiency of energy utilisation and adjust the energy structure;
5. to promote eco-farming, forestation and strengthen the protection of bio-diversity;
6. to enhance vigorously scientific and technological progress, strengthen study of environmental science and actively develop environmental friendly industries;
7. to protect environment through economic means;

8. to strengthen environmental education and constantly heighten the awareness of the environment of the whole nation;
9. to perfect the legal regime regarding environment and improve environmental management;
10. to work out China's plan of action in line with the guideline of the UN Conference on Environment.

During this period, Chinese central government, the State Council, promulgated some new regulations relating to marine environment, including the 1990 Regulation on the Prevention of Pollution Damage to Marine Environment by Coastal Construction Projects and the 1990 Regulation on the Prevention of Pollution Damage to the Marine Environment by Land-based Pollutants.

The short history of China's marine environment legislation coincided with the process of her impressive economic reform and open-up to the outside world, which clearly explains the dynamism behind the establishment and development of China's environmental legal regime in general and her marine environmental legal regime in particular. The economic reform brought Chinese economy into a stage of rapid growth, which in turn creates an increasingly great pressure on environment. Coupled with the international interchange of ideas and information in the area of environment protection, which materialised as a direct result of the open-up policy, such pressure on environment enhanced the environment awareness in Chinese people and the Government as well, which finally resulted in the establishment and development of China's legislation regarding environment, Including marine environment.

To conclude the discussion on the evolution of China's environment legislation, the following time-line may be helpful to an easy and clear understanding:

1978--The Constitution;

1979--The Environmental Protection Law (for trial implementation);

1982--The Constitution (superseding the Constitution of 1978);

- 1982--The Marine Environmental Protection Law;
- 1983--The 1983 Regulation on Environmental Protection in Offshore Oil Exploration and exploitation;
- 1983--The Regulation on the Prevention of Pollution of Sea Areas by Vessels;
- 1984--The Law on Water Pollution Prevention and Control;
- 1985--The 1985 Regulation on the Dumping of Wastes at Sea;
- 1987--The Law on the Prevention and Control of Air Pollution;
- 1988--The Regulation on the Prevention of Environmental pollution by Ship-breaking;
- 1989--The Environmental Protection Law (superseding the Environmental Protection Law (for trial implementation) of 1979);
- 1990--The Regulations on Prevention of Pollution Damage to Marine Environment by Coastal Construction Projects;
- 1990--The Regulation on the Prevention of Pollution Damage to the Marine Environment by Land-based Pollutants.

2.2 Legislative powers and legislative procedures

In the first part of this Chapter, some legislative agencies, such as the NPCC, the Standing Committee of the NPCC, the State Council, and etc., and their powers of the enactment or promulgation of laws, regulations or other legal documents have been mentioned. To better understand Chinese legislation regarding marine environment, especially the legal status and legal effects of relevant laws and regulations, some more discussions on the legislative powers and legislative procedures may be useful and interesting.

2.2.1 Legislative powers

According to Article 57 of the Constitution of the PRICE of 1982, the NPCC is the highest agency of the State power and its Standing Committee is its permanent body. As far as the legislative power is concerned, one of the functions and powers of the NPCC is to enact and amend basic laws (Article 62 of the Constitution of 1982), such as the Constitution, the penal law and etc.. One of the functions of the Standing Committee of the NPCC is to enact and amend laws, with the exception of those which should be enacted by the NPCC (Article 67 of the Constitution). As mentioned above, the 1982 Marine Environmental Protection Law, the 1989 Environmental Protection Law and its predecessor, the 1979 Environmental Protection law (for trial implementation) were enacted by the Standing Committee of the NPCC.

The State Council is the executive body of the highest organ of State power and is the highest organ of State administration (Art. 85 of the Constitution of 1982). One of the functions and powers of the State Council is to adopt administrative measures, promulgate administrative rules and regulations and issue decisions and orders in accordance with the Constitution and the law (Art. 89 of the Constitution of 1982). This means that when the State Council enacts administrative measures, rules, orders, it must conform to the law enacted by the NPCC and the Standing Committee of the NPCC. The NPCC and its Standing Committee may also authorise the State Council to formulate regulations concerning certain issues. In exercising such power, the State Council promulgated in the last one and a half decades several regulations respectively regarding environmental protection in offshore oil exploration and exploitation, dumping of wastes at sea, prevention of pollution of the marine environment from land-based pollution and by vessels, coastal construction projects, ship-breaking.

The Ministries, Commissions and other departments under the State Council may issue orders, directives and regulations within the jurisdiction of their respective mandates and in accordance with the laws enacted by the NPCC or its Standing Committee and administrative rules, regulations, decisions and orders issued by the State Council.

As one of the administrative departments under the State Council, the National Environmental Protection Agency (NEPA) is the department responsible for the overall environment administration of the country. It was established in 1979. Its major mandates include: (a) determining national environmental policies for air, water, soil, wastes, noise, etc.; (b) formulating national environmental regulations and standards; and (c) providing guidance to the provinces on environmental matters. During the last 16 years, NEPA, alone or together with other government departments, published some 200 standards concerning environmental protection.

At the local levers (province, municipality, urban district, county), environmental protection falls within the responsibility of the government of that region, carried out by the environmental protection bureau or office (EPB) under that government. EPBs at the provincial level are responsible for enforcing state environmental laws, regulations and standards; participating in drafting and enforcing state environmental laws, regulations and standards; drafting and enforcing local regulations and standards which, for local reasons, are more specific than the national standards; and drafting annual, medium term and long term environmental plans.

Therefore, according to the different functions and powers, the legal status and legal effect of laws or regulations stipulated by different legislative powers are different. The legal status and legal effects of laws issued by the NPCC and its Standing Committee are higher than those issued by the State Council. And the legal status and legal effects of regulations issued by the State Council are higher than those issued by the Ministries Commissions and other government departments under the State Council. The regulations rules and standards issued by relevant departments of local governments have to be in accordance with the laws, regulations and rules enacted or promulgated by different organs of the central government.

Figure 1 & 2 show the structures of the central governments and the local governments as follows.

Figure 1: The Central Governments

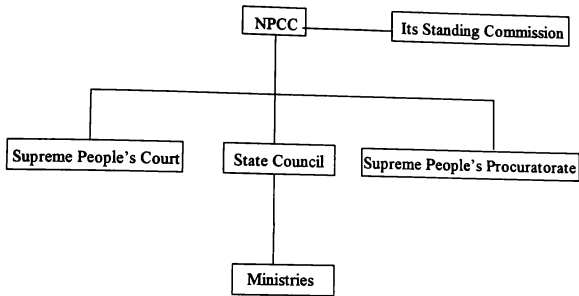
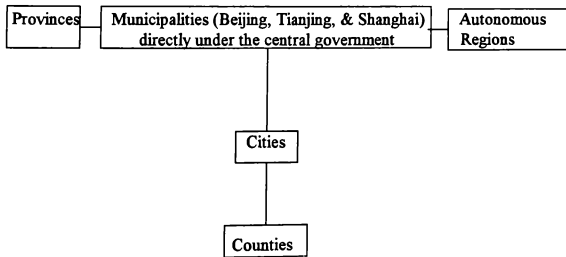


Figure 2: The Local Governments



2.2.2 Legislative procedures

As reflected in the history of China's legislation for marine environment, which is examined in the previous part of this chapter, relevant legislation usually starts as the government policy. The following explains how such government policies to be enacted as laws.

There are several basic steps in the enactment of national laws. Under the Organisation Law of the NPCC, the Presidium, the Standing Committee and the special committees of the NPCC, the State Council, the Central Military Commission, the Supreme People's Court and the Supreme People's Procuratorate may submit to the NPCC bills or proposals which fall within the scope of their functions and powers. A delegation or a group of thirty or more deputies of the NPCC may also submit to the NPCC bills or proposals which fall within the scope of its jurisdiction (Art. 9 & 10). The presidium shall decide whether to refer the bills or proposals to the various delegations and relevant special committees of the NPCC for deliberation and after receiving their opinions then decide whether or not to put the bills or proposals on the agenda of the Congress. The legislative items may be so established.

The Legislative Affairs Commission of the Standing Committee of the NPCC is in charge of the co-ordination and technical work of the legislation under the direction of the Standing Committee of the NPCC. The eligible unites enjoying the right of bills or proposals shall appoint special committees or assign one or several organs concerned to draw up draft laws concerned. The draft law drawn up is first submitted to the relevant organs for elementary examination and approval, then circulated among various interested governmental departments, civil organisations, and other academic institutions for their suggested revisions. This process of revision and examination may be repeated several time which often results in substantial changes to the original draft.

The final draft law will be submitted to the NPCC or its Standing Committee for examination. The NPCC establishes Law Committee as its permanent special

committee which makes a unified examination of all draft laws proposed to the NPCC or its Standing Committee before the NPCC or its Standing Committee takes up examination. The NPCC or its Standing Committee may adopt the draft without any amendment or with some revisions. They may also disapprove the draft law, and when they deem it necessary, return the draft to the biller, who submitted it, for reconsideration. All statutes shall be adopted by a majority vote of more than one half of all the deputies to the NPCC or members of the Standing Committee.

The final step is to promulgate the law. Under Article 80 of the Constitution, the President of the PRC promulgates statutes in pursuance of decisions of the NPCC and its Standing Committee. The promulgation of statutes takes the form of publishing the order of the President.

2.3 The legal framework for the marine environment protection

Although, the 1982 Marine Environmental Protection Law is widely viewed as the cornerstone of the legal framework for the marine environment protection, the full legal framework in this area is far broader, which is, in addition to 1982 Marine Environmental Protection Law, composed of relevant articles in the 1982 Constitution, the 1989 Environmental Protection Law, relevant regulations and rules promulgated by the State Council, as well as international conventions ratified or accepted by China.

2.3.1 The Constitution of 1982

In the 1982 Constitution, there is one article (Art. 26) specifically governing the environment protection, which states that the State protects and improves the living environment and ecological environment, prevents and controls pollution and other public pollution. This article provides the constitutional basis for the

environment protection and environment legislation, including marine environment protection and legislation.

2.3.2 The Environmental Protection Law of 1989

This is the basic law on the environment protection. There are several provisions which are stipulated in direct connection with the marine environment protection under Art. 2, 3, 7, and 21. The environment, referred to by the Law, includes the ocean (Art. 2). The Law applies to the territorial areas of China and other ocean areas under the jurisdiction of China (Art. 3). The Environment protection administrative agency under the State Council is responsible for the unified supervision and management of national environment protection work. The national oceanic administration, harbour superintendency administration, fishery administration, military environment protection agency, and other relevant administrations supervise and manage the protection and control of the environment under laws and regulations concerned (Art. 7). The State Council and the local governments at all levels along the coasts shall reinforce the marine environment protection. The discharge of pollutants to the ocean, dumping at sea, coastal constructions and marine oil exploration and exploitation shall be carried out in accordance with laws and regulations, in order to prevent and control pollution damage to the marine environment (Art. 21).

2.3.3 The Marine Environmental Protection Law of 1982

Since the 1980s, the environmental legislation has rapidly developed. Marine environment protection legislation has become one of the most active areas in the history of China's legislation. The basic law and a large number of specific regulations on marine environment protection were adopted during this period and onward. The Marine Environmental Protection Law was adopted in 1982 in accordance with the

spirit of the Environmental Protection Law of 1979 (for trial implementation). It is the basic law on the marine environment protection and provides a legal basis for various regulations on the marine environment protection. This Law will be discussed in detail in next Chapter.

2.3.4 Specific regulations

After the adoption of the Marine Environmental Protection Law of 1982, a series of specific regulations are promulgated as follows: the Regulation on Environment Protection in Offshore Oil Exploration and Exploitation of 1983, Regulations on the Protection of Pollution of Sea Areas by Vessels of 1983, the Regulation on the Dumping of Wastes at Sea of 1985, the Regulation on the Protection of Environment Pollution by Ship-breaking of 1988, the Regulation on the Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects of 1990, the Regulation on the Protection of Pollution Damage to the Marine Environment by Land-based Pollutant of 1990. These regulations embody the specific requirements by the implementation of the Marine Environmental Protection Law. They constitute the substantial body of the legal regime for the marine environment protection. They will be later elaborated in the latter chapter.

2.3.5 Relevant provisions in other laws and regulations concerned

Many other laws and regulations, which are not specifically stipulated for the marine environment protection, also include some provisions regarding the marine environment protection. These provisions should be deemed as important components of the legal framework for the marine environment protection.

2.3.5.1 The Regulation on Supervision and Control of Foreign Vessels of 1979

The purpose of this Regulation is to safeguard the sovereignty of China, to maintain traffic order in port areas and coastal waters, to ensure safety of navigation and to prevent pollution of waters (Art. 1). The Regulation are applicable to all foreign vessels in the areas under China's jurisdiction (Art. 2). The applicable scope is mainly port areas and coastal waters. Where any vessel wishes to dispose any refuse such as garbage in port, it shall exhibit signals prescribed by the Harbour Superintendency Administration (HSA) to request ash boats (or cars) (Art. 33). One chapter in the Regulation, Chapter 6, is specifically stipulated for the prevention of pollution. Under this Chapter, no vessel shall discharge oils, oily mixtures or other harmful pollutants or refuse within port areas and coastal waters. If any ballast water, tank washings or bilge water is to be discharged from any vessel, an application shall be made to the HSA for approval. Where a vessel has arrived from a plague-infested port, necessary sanitary treatment should be given by the Quarantine Authorities. Dirty water and hold washings from holds where dangerous cargoes or harmful pollutants have been stowed shall only be discharged at the designated place after their having been tested by and to the satisfaction of the sanitation departments concerned. Where a pollution has occurred within port areas or coastal waters, the vessel at fault shall have all relative particulars entered in the Oil Record Book and the Deck Log, and shall have the matter immediately reported to the HSA. Meanwhile, all effective measures shall be taken to prevent the oil from spreading. Where any chemicals should be applied, an application together with a description of their compositions and properties shall be sent to the HSA for approval. Matters not provided for in this Chapter shall be dealt with in accordance with the regulations relating to the prevention of pollution of marine environment issued by the Government of the PRC.

2.3.5.2 The Fisheries Law of 1986 and the Regulation on the Implementation of the Fisheries Law of 1987

The Fisheries Law is formulated for the purpose of fishery management, the protection of fishery resources and the promotion of fishing activities. It is applied in the internal waters, tidal flats, the territorial sea, and other sea areas under the jurisdiction of China. Under this Law, the 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 in accordance with the Marine Environmental Protection Law and the Water Pollution Prevention Law (Art. 26 of the Law of 1986). The departments of fishery administration at various levels shall monitor the pollution of fishery waters; the monitoring network of fishery environmental protection shall be incorporated with the national environmental monitoring network. The fishery administration and fishing port superintendence agencies shall, in collaboration with the departments of environmental protection, investigate and handle any fishery losses arising from pollution (Art. 27 of the Regulation of 1987).

2.3.5.3 The Mineral Resources Law of 1986

This Law is formulated to develop the mining industry, to promote the exploration, development, utilisation and protection of mineral resources. It shall be observed in exploring and exploiting mineral resources within the territory, territorial sea and other sea waters under the jurisdiction of China. The exploitation of mineral resources shall comply with relevant provisions of laws on environment protection and prevent to the environment (Art. 30).

2.3.5.4 The Regulation on the Protection of Underwater Cultural Relics of 1989

Under this Regulation, any institution or individual, when conducting archaeological exploration and excavating for underwater cultural relics, must also comply with other relevant laws and regulations of China, prevent pollution against

water column environment , protect underwater living resources and other natural resources from damage.

2.3.5.5 General Principles of the Civil Law of 1986

Civil liability shall be borne for the violation of the provisions on the protection of the environment and the prevention of pollution of the State and for the damage to the others by polluting the environment (Art. 124). This provision provides a legal basis for the civil liability for the pollution to the environment, including the marine environment.

2.3.6. International conventions ratified or accepted by China

Neither the Constitution of 1982 nor other laws governing the international treaties makes explicit provisions on how to apply international treaties ratified or accepted by China in domestic law. However, the existing legislative, administrative, and judicial practice has shown that international treaties may be directly applied in domestic law. And moreover, under Art. 46 of the Environmental Protection Law 1989, where international treaties signed or accepted by China regarding to the environment protection conflict with the laws of China, the international treaties shall prevail, but with the exception of those provisions that China has made reservation on. As far as marine environment protection is concerned, China has, so far, signed, ratified or accepted the major international conventions concerned, which should, of course, be considered as parts of China's legal regime for marine environment protection.

2.3.6.1 The United Nations Convention on the Law of the Sea of 1982 (UNCLOS)

The UNCLOS is a general codification of international law, and it also provides a framework for comprehensive, global international environmental law. Part XII is particularly addressed for the protection of the marine environment. The Convention lays down, first of all, the fundamental obligation of all States to protect and preserve the marine environment. It further urges all States to co-operate on a global and regional basis in formulating rules and standards and otherwise take measures for the same purpose. Coastal States are empowered to enforce their national standards and anti-pollution measures within their territorial sea. They are also granted jurisdiction for the protection and preservation of the marine environment of its exclusive economic zone. The Convention covers five major sources of marine pollution from land-based, shipping, dumping, sea-bed activities and from the atmosphere. The Convention also provides the legal framework for the enforcement of the protection and preservation of the marine environment by flag States and coastal States.

China participated actively in the drafting of the 1982 UNCLOS, and signed the convention in 1982, China is studying the possibility of ratifying it at this moment.

2.3.6.2 International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

This instrument is a combination of two treaties adopted in 1973 and 1978 respectively. It covers all the technical aspects of pollution from ships, except the disposal of waste into the sea by dumping, and applies to ships of all types, although it does not apply to pollution arising out of the exploration and exploitation of sea-bed mineral resources. Most of the technical measures are included in five annexes to the Convention which contain regulations for the prevention of various forms of pollution:

- (a) by oil;
- (b) by noxious liquid substances carried in bulk;

- (c) by harmful substances carried in packages, portable tanks, freight containers, or road or rail tank wagons, etc.;
- (d) by sewage from ships; and
- (e) by garbage from ships.

2.3.6.3 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters (London Convention of 1972)

This Convention was adopted in London in 1972 and came into force in 1975, generally known as the London Convention. The Convention has a global character, and represents a further step towards the international control and prevention of marine pollution. It prohibits the dumping of certain hazardous materials, requires a prior special permit for the dumping of a number of other identified materials and a prior general permit for other wastes or matter. Under the Convention, the Contracting Parties undertake to designate an authority to deal with permits, keep records, and monitor the condition of the sea. Annexes list wastes which cannot be dumped and others for which a special dumping permit is required. The criteria governing the issuing of these permits are laid down in the third Annex which deals with the nature of the waste material, the characteristics of the dumping site and method of disposal.

2.3.6.4 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties of 1969 (Intervention Convention)

The Torrey Canyon disaster of 1967 revealed certain doubts with regard to the powers of States, under public international law, in respect of incidents on the high seas. The Convention affirms the right of a coastal State to take such measures on the high seas as may be necessary to prevent, mitigate or eliminate danger to its coastline or related interests from pollution by oil or the threat thereof, following

upon a maritime casualty. The coastal State is empowered to take only such action as is necessary, and after due consultations with appropriate interests including, in particular, the flag State or States of the ship or ships involved, the owners of the ships or cargoes in question and, where circumstances permit, independent experts appointed for this purpose. A coastal State which takes measures beyond those permitted under the Convention is liable to pay compensation for any damage caused by such measures. Provision is made for the settlement of disputes arising in connection with the application of the Convention. The Convention applies to all seagoing vessels except warships or other vessels owned or operated by a State and used on Government non-commercial service.

2.3.6.5 International Convention on Civil Liability for Oil Pollution Damage of 1969 (CLC Convention)

The aim of the CLC Convention is to ensure that adequate compensation is available to persons who suffer oil pollution damage resulting from maritime casualties involving oil-carrying ships. The Convention places the liability for such damage on the owner of the ship from which the polluting oil escaped or was discharged. Subject to a number of specific exceptions, this liability is strict; it is the duty of the owner to prove in each case that any of the exceptions should in fact operate. However, except where the owner has been guilty of actual fault, he may limit his liability in respect of any one incident to slightly over \$US 14 millions for each incident. The Convention requires ships covered by it to maintain insurance or other financial security in sums equivalent to the owner's total liability for one incident. The Convention applies to all seagoing vessels actually carrying oil in bulk as cargo, but only ships carrying more than 2,000 tons of oil are required to maintain insurance in respect of oil pollution damage. This does not apply to warships or other vessels owned or operated by a State and used non-commercial service. The Convention, however, applies in respect of the liability and jurisdiction provisions, to

ships owned by a State and used for commercial purposes. The only exception as regards such ships is that they are not required to carry insurance. Instead they must carry a certificate issued by the appropriate authority of the State of their registry stating that the ship's liability under the Convention is covered.

3 The basic law: the Marine Environmental Protection Law

As itemised in the previous chapter, there are now in China more than ten laws and regulations governing marine environment, which either cover the marine environment in general or deal with one or several specific aspects in this area. Among those laws and regulations, the 1982 Marine Environmental Protection Law, which provides a comprehensive legal regime regarding marine environment, is the cornerstone. In other words, the 1982 Law is the basic law regarding marine environment. In the hierarchy of China's legal regime, the 1982 Constitution and 1989 Environmental Protection law are in higher positions. The Constitution and the 1989 Law, however, only provide the principles which deal with the environment as a whole. The regulations, which were promulgated by the State Council in order to implement the 1982 Marine Environmental Protection Law, only cover some specific aspects of marine environment.

3.1 Legislative backgrounds

Internationally, after 30 years of growing awareness - triggered by the Torrey Canyon, Minamata, Santa Barbara, Amocco Cadiz, IXTOC I, and other major ocean pollution incidents- marine pollution control is now a conspicuous part of our civilisation. Decision-makers are bound to take account of the need for such control in any intelligent approach to ocean resource development and management or to the development and management of coastal areas. The need for such regulation is now

widely accepted, especially in fastest developing and highly congested coastal communities.

China is one of the major maritime countries. She has a long coastline of more than 18,000 kilometres (not including coastlines of offshore islands), along which there are approximately 6,500 islands and numerous coastal resorts and tourist attractions. She also faces broad ocean areas with convenient waterways and has extensive continental shelves in which there are rich marine living resources, mineral resources, and ocean energy resources. Therefore, the development, utilisation and protection of the marine environment and the resources therein is an important task of the country.

However, with strong emphasis on economic development over the past two decades, many cities and enterprises in China did not pay enough attention to environmental protection and pollution control. Environmental conditions have therefore deteriorated in many areas throughout the country. The most serious problem which China faces is waste pollution. Most industrial waste water is discharged into rivers, lakes and seas without pre-treatment. Poor management of municipal solid waste and sewage is also becoming an increasingly serious problem.

China has one-fourth of the world population. They are most concentrated along the coastal zones. Diversification and intensification of economic activities to meet the growing demand for food, employment and shelter of the expanding population have placed tremendous pressures on the coastal and marine environments. Pollution is one of the manifestations of such pressures; the coastal waters of the region are contaminated predominantly by untreated sewage, garbage, sediments, oil, pesticides and hazardous wastes from land- and sea-based activities. Many valuable and productive ecosystems are being degraded by direct physical destruction or toxic effects of chemicals. While the open seas and oceans are still relatively clean, increasing maritime activities, such as offshore exploration/production activities, make the oceans vulnerable to pollution, especially to oil and chemical spills and discharges.

Under such circumstances, the marine environment in China has been polluted to different extents. Environmental pollution is rather serious in some sea areas of river estuaries, port bays, internal seas, and parts of coastal areas. Industrial and living liquid wastes of 8 billion tons go into the nearshore ocean per year. Among those, nearly 2.1 billion tons goes into Bohai Sea and Huanghai Sea. The pollution from toxic and hazardous substances such as petroleum, mercury, chromium, cadmium and cyanides exists in many places. Pollution in Yangz River and Hangzhou Bay is becoming more and more serious, and brings great danger in the country's largest fishing ground--the Zhoushan Fishing Grounds. Polluted sea water in some sea areas has made fishing grounds move outward. Fish died in groups. Toxic substances left in fish body increased. Many aquaculture fishing grounds in the tidal flats lay waste. Pollution problem has caused fishing workers and fishermen's anxiety. Some of them even lost their job, which becomes an unstable factor in the society.

In addition, with the development of the ocean utilisation, more and more foreign vessels and foreign companies are engaged in the activities of ocean transport and of exploration and exploitation of offshore petroleum and gas in the sea areas under the jurisdiction of China. The supervision and management of waste disposal and dumping from foreign vessels, platforms and aircraft should be reinforced to protect the interests and rights of the country.

In recent years the Central Government and local authorities have taken great initiatives to improve the environment, which include a strict requirement for an environmental impact assessment on new projects with environmental problems, and for a review of the adequacy of environmental protection measures at the project planning, design and construction stages.

Some efforts have been made in the area of marine environment protection. The State Council approved Provisional Regulations on the Prevention of Pollution in Coastal Areas in 1974, which was implemented in domestic scope. In 1977, under the approval of the State Council, a leading group of protection in the sea areas of Bohai Sea and Hannah Sea was established. The group brought the petroleum pollution

under control and achieved preliminary effects in the sea areas of Bohai Sea and Hannah Sea. The State Oceanic Administration, coastal provinces, autonomous zones and cities carried out investigations on the environmental status in Bohai Sea, Huanghai Sea, East China Sea and South China Sea, and made monitorings over these sea areas. In the last 20 years, nearly 100 cruises for marine environmental pollution surveys and monitorings have been conducted, covering an area of 450,000 square kilometres in the seas surrounding China. Five thousand stations have been established to collect samples of sea water, sediment, and organisms. Through unremitting efforts, a nation-wide marine pollution monitoring network has been established in recent years. An initial step to be taken within the network is to carry out an intercalibration exercise among the participation laboratories to ensure that data obtained are compatible. In general, however, marine environmental protection work in China is still weak. The Marine Environmental Protection Law is formulated under these circumstances.

Based upon the 1979 Environmental Protection Law (for trial implementation), the former Environment Protection Leading Group of the State Council began to draft relevant laws and regulations regarding environment protection, among which is the Marine Environmental Protection Law. In 1980, organised by the former Environment Protection Leading Group of the State Council and the State Oceanic Administration, participated by the Ministry of Communications, Ministry of Petroleum, former State Aquatic Products Administration and other governmental agencies, as well as Law Institute and Law Institute in Shanghai of Chinese Social Science Academy, the drafting group for the Marine Environmental Protection Law was formed. Based on information collection, investigation and research, consultation and co-ordination, the drafting group prepared discussion draft, repeatedly asked opinions from relevant ministries of the State Council and 10 coastal provinces, autonomous zones and cities. Relevant experts and managers were asked to participate in the draft revision. After the Standing Committee of the State Council approved the draft, it was submitted to the

Standing Committee of the NPCC for reviewing and was adopted after some revisions in 1982.

3.2 Legislative purposes

Art. 1 of the Marine Environmental Protection Law explicitly provides that this Law is enacted in order to protect marine environment and resources, prevent pollution damage, maintain ecological balance, safeguard human health and promote the development of marine programs. It is formulated in accordance with the national environment protection policy and the tasks of the marine environment protection in China. It has some implications in the following aspects.

3.2.1 The protection of the marine environment and its resources

This is the first important purpose of the Marine Environmental Protection Law. It is shaped by the characteristics of China. China is a socialist country. The land and its resources belong to the State. The State protects the land and its resources under the Constitution. The marine environment and its resources constitute an essential part of the whole environment and resources of the country. As the basic law on the protection of the marine environment, its first purpose embodies the specific requirements of the Constitution.

3.2.2 The prevention of pollution damage

The prevention of pollution damage to the marine environment is the necessary requirement for the protection of the marine environment and its resources. It is also the common legislative purpose of national legislation on marine environment protection in the world. Many international conventions and national legislation on the prevention of marine pollution make provisions on prevention and

control of marine pollution, especially for the prevention and control of major public pollution such as tanker accidents, radioactive material dumping, and etc.. The marine environment in China has been polluted to some extent. Legal provisions on prevention and control of pollution are needed. The prevention of pollution damage concerns the content and intensity of environmental protection. It means that environment policy is not only limited to the elimination or reduction of pollution already existing, but also ensures that pollution is combated in its incipiency and that natural resources are used on a sustainable basis.

According to Art. 45 of the law, pollution damage means any direct or indirect introduction of substances or energy into the marine environment, which results in such deleterious effects as harm to marine living resources, hazards to human health, hindrance to fishing and other legitimate activities at sea, impairment of quality for use of sea water and degradation of the environmental quality. This is almost the same definition on marine pollution as given by UNCLOS (Art. 1(4)), both in terms of the legal language and the implications.

3.2.3 The Enhancement of quality of the marine environment

In this respect, the Marine Environmental Protection Law is advanced than some other national legislation. The title and the contents of the Law embodies the thoughts of the prevention of marine pollution, maintain of ecological balance, enhancement of the quality of the marine environment and leaving benefits for future generations.

3.2.4 The promotion of the overall development of the marine programs

How to deal with the conflicts of economic development and environment protection is an important issue which must be solved in the environment legislation.

China is a developing country as well as a large country with environmental problems. At present, China faces dual challenges: (1) It shall accelerate the economic development and raise its comprehensive national power; (2) It shall, meanwhile, protect the environment in a practical way and achieve sustainable development. China has a population of 1.2 billion. In order to supply enough food and clothing to her people and gradually enable them to live a fairly comfortable life, the economy must be developed and its environment must also be protected. To protect environment, in fact, is to protect subsistence of the mankind itself and is the basis for continual and sustainable development. If the environment is devastatingly damaged, it will be very hard to be recovered. Overseas experience and lessons have proved that the economy which has not taken environment into consideration will bring about uneconomical consequences. China has inherited the native ecological tenets in history and the idea of the sustainable utilisation of resources and earnestly drawn experience, lessons and practice from other countries in the environmental issue. After more than 20 years of constant explorations, China has initially formulated a series of policies on environment with Chinese characteristics. The essence of these policies is based on the national conditions of the developing countries and the notion of sustainable growth. Therefore, the protection of environment is not merely to prevent pollution so as to maintain the natural status of the ocean, but to promote the overall development of marine programs at the same time.

3.3 The applicable scope and regulated subjects

3.3.1 The applicable scopes

The Law applies to the internal sea, the territorial sea of China and all other sea areas under the jurisdiction of China (Art. 2).

The internal water hereby refers to the water on the landward side of the baselines of the territorial seas of China (Art. 2 of the Territorial Sea Law of China of

1992), which include Bohai Bay and Qongzhou Strait. The territorial sea of China is the sea belt adjacent to the land territory and the internal waters (Art. 2 of the Territorial Sea Law of China of 1992), which is twelve nautical miles measured from the baselines of the territorial sea (Art. 3 of the Territorial Sea Law of China).

The term of "all other sea areas under the jurisdiction of China" mainly refers to the exclusive economic zone and the continental shelf, among the others, under international law. At present, China has not yet adopted laws on the exclusive economic zone and the continental shelf. Under the Law of the Sea Convention, the exclusive economic zone is an area beyond and adjacent to the territorial sea and shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured (Art. 55 & 57 of UNCLOS). The coastal State has jurisdiction with regard to the protection and preservation of the marine environment in the exclusive economic zone (Art. 56 of UNCLOS). The continental shelf comprises the sea-bed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin (Art. 76 of UNCLOS). The coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources. The rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation (Art. 77 of UNCLOS). The applicable scope provided by the Marine Environmental Protection Law is completely consistent with international law.

The Marine Environmental Protection Law also provides that the Law also applies to the discharge of harmful substances and the dumping of wastes done beyond the sea areas under the jurisdiction of China but causing pollution damage to such areas (Art. 2). This is formulated in accordance with the characteristics of the ocean. Ocean is an integrity body connected to each other. Pollutants may move from one ocean area to another at random, they do not respect the boundaries of national jurisdiction.

Under UNCLOS, States have the obligation to protect and preserve the marine environment (Art. 192). States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights (Art. 194). The 1969 Intervention Convention provides for unilateral intervention by a contracting state in the case of an emergency, such as a potentially catastrophic spillage, involving the vessel of another contracting state, if it takes place outside its territorial limits in the high seas, and it permits drastic precautionary measures to be taken by the intervening state if there is sufficient risk ("grave and imminent danger") of serious environmental damage to the latter coastal interests. These international law rules provide the legal basis for the provisions concerned in the Marine Environmental Protection Law. If any other country disposes or dumps hazard substances in the ocean area beyond the jurisdiction of China but causes pollution to the marine environment of China, China is entitled to apply this Law and affixes the liability of the party concerned..

3.3.2 The regulated subjects

All vessels, platforms, airborne vehicles, submersibles, as well as all enterprises, institutions and individuals engaged in navigation, exploration, exploitation, production, scientific research and other activities in the sea areas under the jurisdiction of China shall comply with this law (Art. 2).

The vessels hereby refer to all sorts of vessels such as tankers, freight vessels, fishing vessels, marine investigation vessels, exploring vessels and drilling vessels. Platforms include drilling platforms, oil extracting platforms and other working platforms at sea. Airborne vehicles include aeroplanes, balloon, airships, and etc.. Submersibles include submarines and other underwater vehicles.

Under this provision, the Marine Environmental Protection Law not only regulates all entities and individuals of China but also binds on foreign entities and vessels engaged in activities in the sea areas under the jurisdiction of China. With the development of the marine enterprise, more and more vessels call at ports of China or pass through the coastal waters under the jurisdiction of China. In addition, more and more foreign oil companies and their equipment for offshore exploration and exploitation come into the sea areas under the jurisdiction of China. The effective management and control over these activities is of great importance for the protection of the marine environment and the national interests.

3.4 The management regime and competent authorities

The management regime for the marine environment includes the management over the marine development activities, investigation, monitoring and surveillance of the marine environment, scientific research on the marine environment as well as the protection of the marine environment. Under Art. 5 of the Marine Environmental Protection Law, the responsibilities of marine environment management are scattered among different ocean-related government agencies dealing with environment, fisheries, mineral resources, science and technology, and the Navy, etc.. The management system in marine environment matters is characterised by a strong fragmentation of competence. Relevant responsibilities are provided as follows.

The environment protection department under the State Council, which refers to the National Environment Protection Agency, is in charge of marine environment protection in the whole country.

The state administrative department of marine affairs, which refers to the State Oceanic Administration, is responsible for organising investigations, monitoring and surveillance of the marine environment and for conducting scientific research therein, and it is in charge of environment protection against marine pollution damage caused by offshore oil exploration and exploitation and by the dumping of wastes at sea.

The Harbour Superintendency Administration (HSA) is responsible for overseeing, investigating and dealing with the discharge of pollutants from vessels and for dumping under the surveillance in the waters of the port areas. And it is in charge of environment protection against pollution damage caused by vessels.

The state 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 surveillance over the waters thereof.

The environment protection department of military forces is responsible for supervising the discharge of wastes by naval vessels and dumping under the surveillance in the waters of naval ports.

The environment 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 environment protection in their respective administrative areas, and are in charge of environment protection against pollution damage caused by coastal construction projects and land-based pollutants.

3.5 Legal liabilities

Since the Environmental Protection Law (for trial implementation) was adopted, departments and coastal provinces, autonomous regions dealt with some cases and disputes in pollution damage to the marine environment. The experience was accumulated and summarised. Based upon this practice and experience, taking into account of international practice, the Marine Environmental Protection Law defines the legal regime for liabilities to pollution damage to the marine environment. These liabilities include administrative liability, civil liability and criminal penalty.

3.5.1 Administrative liability

There is a strong administrative tradition in China. The implementation of the Law has first fallen to the State executive and administrative agencies.

Under Art. 41 of the Law, in case of a violation of this Law that has caused or is likely to cause a pollution damage to the marine environment, the relevant supervision departments prescribed in Art. 5 of this Law, which has been discussed in the previous part, may order the violator involved to remedy the pollution damage within a definite time, pay a sum of discharge fee, pay the cost for eliminating the pollution, and compensate for the loss sustained by the State. The competent authorities may give the said violator a warning or impose a fine on him. An involved party contesting the decision may file a suit with the people's court within 15 days of receipt. If a suit is not filed and the decision is not carried out upon the expiration of the period, the competent authority shall request the people's court to enforce the decision in accordance with the law. There are some implications of this provision.

Firstly, the competent authorities may give punishment to any pollution damage to the marine environment or to any possible pollution damage against the Marine Environmental Protection Law. For example, if any entity does not arrange pollution prevention facilities or equipment or does not fill in or record relevant documents as required by laws and regulations concerned, the competent authority may give it such an administrative punishment as a warning or a fine.

Secondly, any loss that the State suffers from the pollution damage to the marine environment should be compensated. The loss hereby includes the losses in quality of water, losses of living resources, and etc.. The compensation sum of the damage to the quality of water in the polluted area is usually calculated by the requirements for that quality of water to restore to the level required by the Standards for the Quality of Sea Water. That is to say, the compensation sum should be enough to let the density of the pollutant substances in the polluted waters restore to the highest density allowed by the Standards for the Quality of Sea Water.

Thirdly, all above-mentioned punishments shall only be made by the relevant competent authorities provided by Art. 5 of the Law. Any other department and organ

is not entitled to make such a punishment. For example, only the State oceanic Administration is responsible for affixing administrative liability for the pollution damage or any possible pollution damage to the marine environment caused during oil exploration and exploitation in the sea or by dumping at sea. And when pollution is caused from ships, the HSA is responsible for affixing the administrative liability under the Law. When pollution damage caused by coastal constructions or activities on land, the environment protection departments of the coastal provinces, autonomous regions, and municipalities directly under the Central Government are responsible for making any administrative action against the party concerned.

Fourthly, the subjects who may be punished include the direct responsible entities or individuals, the entities or individuals in charge and the subordinated entities or individuals.

3.5.2 Civil liability

Entities or individuals who have suffered damage caused by marine environment pollution shall be entitled to claim compensation from the party causing the said pollution damage (Art. 42). Disputes over the compensation liability and the compensation sum thereof may be settled by the relevant competent authority. In case a party contests the decision, the matter can be settled either by resorting to the procedures specified in the Law of Civil Procedure of China of 1991 or by filing a suit directly to the people's court.

Entities or individuals who request to get remedies must propose a report for compensation to the competent authority. The report should refer to the entities or individuals who have made pollution, the time and the place where the pollution caused, the amount and the sum of the losses, certificates issued by certification organs concerned, etc..

The competent authority should carry out investigation and survey after it has received the pollution damage report for compensation. It should induce consultations

between the parties concerned. It may make decisions when consultations cannot resolve the disputes. The parties may bring a suit to the people's court if they are not satisfied with the decision. They may also directly suit at the people's court without reporting to the competent authority.

In case of a pollution damage to the marine environment resulting entirely from the intentional or wrongful act by a third party, that party shall be liable for compensation (Art. 43).

3.5.3 Criminal penalty

In cases of violations of the Law resulting in pollution damage to the marine environment and causing heavy losses of public or private property or deaths, the individual concerned or responsible may be prosecuted for criminal penalties by judicial organs (Art. 44):

3.5.4 Exemption of liabilities

In cases entirely due to the following causes, compensation liabilities may be exempted if a pollution damage to the marine environment cannot be avoided in spite of the prompt and reasonable measures taken: (1) act of war; (2) irresistible natural calamities; (3) negligence or other wrongful act done by the government departments which are in charge of the maintenance of lighthouses or other navigational aids in exercising their functions.

In legal terms, the first two exemptions are usually called "force majeure", which are commonly viewed as valid justifications for exemption of legal responsibilities. Negligence or other wrongful act is not considered as exemption in most of the cases in other legal regime of China. However, in the case of 1982 Marine Environmental Protection Law, negligence or other wrongful act done by government

departments is viewed as a State act and thus exempted of compensation under the law.

It must be noted that the requisites for the exemption of liability should be: (1) the situation is entirely consistent with the causes of the provisions of the Law; (2) the pollution damage to the marine environment cannot be avoided in spite of the prompt and reasonable measures taken. Otherwise, the liability concerned cannot be exempted.

3.6 Specific regulations

The 1982 Marine Environmental Protection Law provides five different systems to prevent marine pollution caused respectively by coastal construction projects, offshore oil exploration and exploitation, land-based pollutants, vessels, and dumping of wastes. The followings are the summaries of these systems.

3.6.1 The prevention of pollution damage to the marine environment by coastal construction projects

Main stipulations of the 1982 Marine Environmental Protection Law aim at preventing pollution damage to the marine environment by coastal construction projects are as follows:

1. Entities in charge of coastal construction projects, before drawing up and submitting their construction plans, shall conduct scientific investigations of the marine environment, select suitable sites in light of the natural and social conditions, and formulate and submit Environmental Impact Statements in accordance with relevant state regulations (Art. 6).
2. Measures shall be taken to protect the aquatic resources when building harbours and oil terminals, as well as water conservancy facilities and tidal power stations in

estuaries. Dams to be built across fish and crab migration routes shall be provided with corresponding fish ladders (Art. 7).

3. Facilities to receive and treat oil residues and wastes, oil water and other wastes shall be installed at ports and oil terminals together with necessary anti-pollution equipment and monitoring and alarm devices (Art. 8).
4. The development and utilisation of tidelands shall be comprehensively planned and their regulations tightened. Strict control shall be maintained over land reclamation from salt marshes and other coastal filling projects and over sand-gravel dredging and excavating operations. As for projects that are definitely necessary, Environmental Impact Statements concerning them shall be produced on the basis of investigations and comparison of economic results, and submitted for approval to the environmental protection department of the relevant provinces, autonomous regions and municipalities directly under the Central Government. In case of large-scale coastal filling projects, such Statements shall also be submitted to the environmental protection department under the State Council for examination and approval (Art. 9).
5. It is forbidden to destroy seashore shelter belts, scenic woods, scenic rocks, mangroves and coral reefs (Art. 9).

3.6.2 The prevention of pollution damage to the marine environment by offshore oil exploration and exploitation

Major measures to prevent pollution damage to the marine environment by offshore oil exploration and exploitation include:

1. Enterprises engaged in offshore oil exploitation or their competent authorities shall, before drawing up and submitting their work plans, produce Environmental Impact Statements including effective measures to prevent pollution damage to the marine environment, and submit them to the environmental protection department under the State Council for examination and approval (Art. 10).

2. In case of offshore oil exploration and other offshore activities involving explosive operations, effective measures shall be taken to protect fishery resources (Art. 11).
3. Oil used in the course of exploration and exploitation shall be put under strict control so as to prevent its leakage. (Art. 12).
4. Under no circumstance, oil residues, oily water and mixtures produced in the course of offshore oil exploration and exploitation are allowed to be directly discharged into the sea (Art. 12, 13, 14 and 15).
5. Offshore oil pipelines and oil-storage installations shall always be kept in good conditions fulfilling the requirements against seepage, leakage and corrosion, so as to prevent oil from running off (Art. 16).
6. In exploring and exploiting offshore oil resources, appropriate anti-pollution facilities and equipment shall be available, and effective technical measures shall be taken to prevent blow-out or oil-spill accidents (Art. 17).

3.6.3 The prevention of pollution damage to the marine environment by land-based pollutants

The Marine Environmental Protection Law provides the following seven rules to prevent pollution to the marine environment:

1. No additional outlet for discharging sewage is allowed within marine sanctuaries, aquacultural grounds and seashore scenic and tourist areas (Art. 18).
2. It is prohibited to discharge waste water containing high-level radioactive matter into the sea (Art. 19).
3. No medical sewage or industrial waste water carrying pathogens may be discharged into the sea unless it is properly treated and strictly sterilised with the pathogens therein exterminated (Art. 20).

4. The discharge of industrial waste water 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).
5. In discharging heated waste water into the sea, measures shall be taken to ensure that the water temperature in the adjacent fishing areas meets the state standards for water quality (Art. 22).
6. The use of chemical pesticides in coastal farmlands shall conform to the state regulations and standards for the safe use of pesticides (Art. 23).
7. Without the approval of environmental protection departments of local governments at provincial level, no tailings, cinders, garbage and other wastes may be discarded or piled up along seashores and beaches.

3.6.4 The prevention of pollution damage to the marine environment by ships

As a principle, the Marine Environmental Protection Law stipulates that no vessel may discharge oil, oily mixtures, wastes and other harmful substances into the sea areas under the jurisdiction of China in violation of the provisions of the Law. The Law further stipulates:

1. Any oil tanker of 150 tons gross tonnage and above and any other vessel of 400 gross tons and above shall be fitted with appropriate anti-pollution equipment and facilities and shall carry on board an Oil Record Book (Art. 27 and 28).
2. The discharge of oily water from oil tankers or hold-washings and other residues from vessels carrying noxious or corrosive goods shall be conducted under relevant regulations and be properly recorded (Art. 29 and 30).
3. It is prohibited to discharge high-level radioactive matter from nuclear-powered vessels or vessels carrying such substances into the sea (Art. 19 and 31)
4. In case pollution is caused by an abnormal discharge of oil, oily mixtures or other harmful wastes or from the falling overboard of noxious or corrosive goods,

measures shall be immediately taken to control and eliminate such pollution (Art. 34).

3.6.5 The prevention of pollution damage to the marine environment by dumping of wastes

In order to prevent pollution to marine environment caused by dumping of wastes, the Marine Environment Law adopts the following provisions:

No wastes may be dumped into the sea areas under the jurisdiction of China without permission issued by the state administrative department in charge of marine affairs (Art. 38).

After such permission has been issued, the dumping shall be done at the designated place, within the time limit and in accordance with the conditions specified in the permission. Wastes to be dumped shall be verified by the approving department after their loading. A detailed record of such operation shall be submitted to the said department by the entities who have obtained permission for dumping. Wastes to be dumped by means of vessels shall be verified by the harbour authorities at the port of departure. A written report shall be submitted to the harbour authorities after the completion of the dumping by the captain of the vessel involved (Art. 39 and 40).

The Marine Environmental Protection Law covers all aspects of marine environmental protection, it, however, does not contain all necessary concrete provisions in this area. For instance, according to Art. 24 of the 1982 Law, without the approval of environmental protection departments of local governments at provincial level, no tailings, cinders, garbage and other wastes may be discarded or piled up along seashores and beaches. But the 1982 Law does not stipulate how to get the approval. In order to effectively implement the 1982 Marine Environmental Protection Law, the Law itself stipulates that the environmental protection department under the State Council may formulate detailed rules and regulations for

the implementation of this Law, and submit them to the State Council for approval and put them into effect after such approval (Art. 47). As a result of this provision, five regulations have been promulgated by the State Council, respectively covering five main areas of marine environmental protection, i.e. marine pollution caused by coastal construction projects, offshore oil exploration and exploitation, land-based pollutants, vessels or dumping of wastes. The following chapter will discuss these five regulations in detail.

4 Specific regulations

As mentioned in the previous chapter, five regulations were promulgated by the State Council of China to implement the 1982 Marine Environmental Protection Law. These five regulations are as follows: the Regulation on Pollution Damage to the Marine Environment by Land-based Pollutants, the Regulation on the Prevention of pollution of Sea Areas by Vessels, the Regulation on the Dumping of Wastes at Sea, the Regulation on Environmental Protection in Offshore Oil Exploration and Exploitation, and the Regulation on the Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects. In a sense, these five regulations are the embodiments of the 1982 Marine Environmental Protection Law.

In addition to these five Regulations, the need was also felt to regulate the issue of ship-breaking in context of marine environment protection, as ship-breaking becomes an important sector of China's shipping industry. In 1988, the Regulation on the Prevention of Environmental Pollution by Ship-breaking was also promulgated. This Regulation may be viewed as a complement to the 1982 Marine Environment Law which does not contain any provision governing ship-breaking.

The six regulations cover different sources of marine pollution, which fall within four categories: i) pollution from land-based sources; ii) pollution from ships; iii) pollution from dumping at sea, and iv) pollution from coastal activities. The last

form of pollution includes pollution from offshore oil exploration and exploitation, coastal construction and ship-breaking.

Based upon the four major categories of marine pollution, this chapter is divided into following four parts accordingly.

4.1 The Regulation on Pollution Damage to the Marine Environment by Land-based Pollutants

4.1.1 The magnitude and complexity of land-based marine pollution

Land-based marine pollution is commonly seen as pollution of maritime zones due to discharges by coastal establishments or coming from any other sources situated on land or artificial structures, including pollution transported by rivers into the sea. Some statistics says that approximately 60 percent of marine pollution comes directly from land-based sources (Kiss, A and Shelton D (1991), page 189). Some statistics estimates that land-based pollution accounts for 75% of the pollutants in the ocean (Johnston, D, editor (1981), page 196). Another estimate gives figures ranging from 50% to 90% on a world-wide basis (Brubaker, D (1993), page 33). Despite the variance of the statistics, the conclusion drawn from the statistics is that this source of pollution contributes at least over 50% (*ibid.*).

In addition to the magnitude of the problem, from an ecological point of view, it may also be the most directly related to human health concerns, through the intake of contaminated sea-food (Johnston, D, editor (1981), page 197). This form of marine pollution is particularly critical in coastal waters, where the every-day wastes of a country or a region usually end up at a high level of concentration, before dispersal within the ocean areas beyond. These concentrations in coastal areas are of critical concern, but the effects of disposal likely extend to even the most remote areas of the oceans. Despite the world-wide circulation of shore-generated wastes, global

conventions on land-based marine pollution are more likely to serve as inducements to control rather than as methods for regulation (Johnston, D, editor (1981), page 198).

In contrast with other forms of pollution, land-based marine pollution arises from an extremely wide variety of human activities. The problem varies considerably both with the pollutant discharged and the source from which it originates. Even innocuous substances can prove hazardous to the environment, if they are discharged in large quantities. Apart from any chemical effect, their deposits can sterilise the seabed, disrupt the food chain, increase turgidity, and in other ways impair the assimilative capacity of the marine environment.

The diversity of the origin of land-based pollution renders the solution to this problem technically difficult. Such pollution can occur directly, by dumping of discharges along the coast, or indirectly, by the intermediary transported by rivers, streams or subterranean waters. Applicable rules should in principle include all waters which flow into the sea, thus governing the entire aquatic environment in certain regions. In this way, the "traditional" techniques of forbidding discharges, or requiring prior authorisation of certain discharges, would be strengthened.

One of the major difficulties posed by land-based pollution arises from the fact that it is basically a collective phenomenon. Although some categories of land-based polluters, such as chemical plants, can be identified, in cases it is virtually impossible to identify the person, or even the category of persons, responsible for a harmful releases. Land-based pollution control is, therefore, more dependent on tax-incentive or tax-deterrent systems than on traditional legal enforcement oriented instruments. Such collective systems, although indiscriminate and therefore not wholly equitable, provide the only possible means of applying the "polluter pays principle" with respect to land-based pollution.

4.1.2 The effort to regulate land-based pollution

National regulations governing the discharge of wastes into coastal waters in the world may be traced back to an early period of industrial and agricultural development. Centuries before oil slicks called for attention, noxious wastes were subject to control in marine areas where human activity was particularly intense such as in harbours, or in areas where water quality was of special importance, such as for fishing grounds or oyster-beds. An illustration of this may be found in the French "Grande ordonnance sur la Marine" promulgated in 1681, under the reign of Louis XIV (Johnston, D, editor (1981), page 237). However, regulation on land-based pollution is rather new in China. The Regulation on Pollution Damage to the Marine Environment by Land-based Pollutants (hereafter called the Regulation on Land-based Pollutants) was adopted on 25 May 1990 by the State Council, and came into force on 1 August 1990.

The international approach to cope with land-based marine pollution is of recent origin. The Regulation on land-based sources of pollution first appeared in 1974. This is relatively late in international legislation, especially given that the high percentage of marine pollution, which will be discussed later in this chapter, comes directly from land-based sources (Kiss, A and Shelton D (1991), page 189). UNCLOS is the only global treaty addressing the problem of land-based marine pollution (Kiss, A and Shelton, D (1991), page 190). The existing conventional sources regulating land-based pollution are exclusively regional (*ibid.*). In this regard, all the treaties relating to regional seas proclaim the principle of combating land-based pollution. The most precise regulations are those for the North-East Atlantic, the Baltic, the Mediterranean, and the South-East Pacific (Kiss, A and Shelton, D (1991), page 190).

Under UNCLOS, land-based pollution is regulated by the same methods applied to other sources. Art. 194 provides that States should take the necessary measures tending to limit, as much as possible, the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping(Art. 194(3)(a)).

However, UNCLOS further provides that States shall adopt laws and regulations as well as all other measures which may be necessary to prevent, reduce and control this pollution (Art. 207). Art. 213 requires States to ensure their application. It shows that the prevention of land-based marine pollution is dependent more on national action than on international activities. Art. 207 (paragraph 1 read with paragraph 5) lays down a minimum international requirement: States shall adopt laws and regulations to minimise the release of toxic, harmful, or noxious substances. It is important to observe that such substances are not defined in the text of UNCLOS or in its Annexes and that this point requires attention by specific national laws and regulations when land-based marine pollution is addressed.

The most significant response would take the form of national legislation, especially in developing countries that have not had a long history of industrial abuse to warn them of the hazards associated with waste disposal in their coastal waters. The need to put land-based pollution under control among the priorities of sound eco-development should be now more evident than ever before, as affected by the emphasis placed on this problem in recent national legislation.

Control of land-based pollution, most amenable to national action, emanates solely in an area in which other states do not have any rights to regulate. This is unlike the situation regarding other forms of marine pollution. Consequently only one State can legislate and take enforcement actions. In this respect, the consequence is two-fold.

On one hand, with near shore domestic waters directly affecting fisheries, tourism and other coastal activities, strong incentive is provided for national action to protect against noxious releases. And national controls are likely to be carried out, and national regulations are likely to be enforced. On the other hand, international regulation and control will generally prove more difficult. States are inclined to resist any technical limitation which might result in an increased financial burden or a less competitive economy.

In consequence, the most important part of land-based pollution control regulation is usually to be found in national laws. International efforts aimed at promoting uniform definition of hazards, standardised assessment of noxious wastes, and above all international control, are not likely to be efficacious in most cases. To date international agreements have been limited to very general formulations.

4.1.3 Definition of land-based pollutants

The Regulation on Land-based Pollutants defines "land-based pollutants" as pollutants discharged from sites or installations on the land into the sea, and have caused or are likely to cause damage to the marine environment. Such pollutants include oil, fertiliser, heavy metals, organic pollutants, solid wastes, radioactive substances, heated pollutants, and pathogens (Art. 2).

UNCLOS does not define pollution from land-based sources. However, the Convention provides that pollution from land-based sources includes pollution from rivers, estuaries, pipelines and outfall structures to the marine environment (Art. 207).

Although, in principle, there is no major difference between the two definitions, the one given by China's Regulation on Land-based Pollutants is more comprehensive, which covers the sources, the destination and the effects of the pollutants.

Land-based marine pollution, according to these definitions, is derived from an extraordinary diversity of human activities, and therefore poses truly formidable problems of control. This type of pollution includes, in addition to oil sewage and industrial wastes, chemical fertiliser and pesticides, warm water from power stations, atmospheric discharges from vehicles, chimney fumes and sprayed agricultural chemicals (Brubaker, D (1993), page 33).

Some pollutants originate in sewers which discharge directly into the sea; some, in the form of industrial or domestic effluents, are carried by rivers to estuaries

and coastal waters; and much of the rest is associated with atmospheric pollution over the land-mass in general and over congested coastal zones in particular.

Faced with these uncertainties, lawyers most focus upon defining the criteria to determine which wastes are highly hazardous to the marine environment. They must select families and groups of substances on the basis of their toxicity, persistence, or bio-accumulation.

However, the definition of a highly hazardous substance needs to be clarified. Banning all discharges containing harmful substances, even if the toxic component of the waste is infinitely small, would unduly affect agricultural and industrial development of a coast area. For that reason, a second group of wastes is designated not for total elimination, but for strict regulation. This group comprises discharges which contain highly noxious substances in quantities below certain limits. In this group, there are also listed substances which, although not intrinsically toxic, may form a dangerous compound in the marine environment. It should be further noted that the list of toxic wastes varies according to the progress of scientific knowledge and to increased experience in the industrial and agricultural development of the coastal areas concerned.

This constant evolution of the definition of land-based pollutants calls for flexible legal instruments subject to frequent modifications. Updating the lists of pollutants by the State, in light of new knowledge and changing conditions, now seems essential to establish effective controls.

In this respect, the 1974 Paris Convention established an interesting difference between present and future sources of pollution: whereas "Parties should endeavour" to reduce existing pollution from land-based sources, they must forestall any new pollution from those sources, including that which is derived from new substances. The 1980 Athens Protocol has even established separate procedures for the treatment of discharges from existing sources and new installations.

4.1.4 Purpose

Under the Regulation on Land-based Pollutants, the purpose of the formulation of the Regulation is to strengthen the supervision and management of pollution from land-based sources, and to prevent damage to the marine environment from land-based pollution sources (Art 1). This purpose is consistent with the provisions of some regional conventions. Under the Paris Convention, the Barcelona Convention, and the Athens Protocol, the general purpose of the formulation in this respect lies in that States must take measures “to prevent, abate and combat pollution” (Art. 1(2) of the Paris Convention, Art. 8 of the Barcelona Convention, and Art. 1 of the Athens Protocol).

As a consequence of the variable harm of substance discharged into the marine environment, national legislation aimed at controlling land-based pollution utilises a wide range of techniques. Depending on whether the legislator aims at totally eliminating the release of a substance or only at reducing its discharge, the substance will be categorised in different lists.

4.1.5 Jurisdiction

The scope of applicability is not explicitly addressed under the Regulation on Land-based Pollutants. For its provisions to adequately regulate subject discharges, the scope of applicability most addresses the point where pollutants are released from the land territory in China and begin their path of transport to the sea (Art. 3).

The scope of jurisdiction is vague on the question of the scope of their applicability in most regional treaties. Invariably, land-based marine pollution originates in areas where national sovereignty is undisputed: land territory and territorial waters.

4.1.6 General measures to prevent land-based marine pollution

In order to control land-based marine pollution, the Regulation on Land-based Pollutants provide the following six general measures which apply to all kinds of pollutants:

1. **Reporting.** Any entities and individuals discharging land-based pollutants into the sea shall report to and register with the local environmental protection department to identify the discharge treatment installations provided for pollutants, as well as the types, quantities and concentrations of discharges anticipated under normal operations. They shall also provide the data of the environmental protection against marine pollution caused by land-based pollutants (Art. 6).
2. **Compliance with standards.** The discharge of land-based pollutants by any entities or individuals must be carried out in compliance with discharge standards or relevant regulations set down by the State and local governments(Art. 5).
3. **Discharge fee.** Any entities and individuals who have discharged land-based pollutants into the sea in excess of the State and local standards for discharge of pollutants must pay discharge fee and are responsible for improvement (Art. 7).
4. **Protection of special sea areas.** It is prohibited to build outlet for discharging sewage within special marine reserves, marine natural reserves, seashore scenic and tourist areas, salt-field protection areas, bathing beach, major fishing area and areas which need special protection (Art. 8).
5. **Improvement.** Any enterprises and institutions, which discharge land-based pollutants into the sea causing serious damage to the marine environment, shall improve the situation within a prescribed time limit (Art. 9).
6. **Penalty.** Those who violate this Regulation may be imposed a fine ranging from RMB 300 to 200,000 (8.5 RMB equivalent to 1 US dollar).

4.1.7 Specific rules governing different types of land-based pollutants

Theoretically, the ideal means to combat land-based marine pollution would be zero discharge standard uniformly applying to all kinds of pollutants, in other words,

no discharge would be permitted, regardless of the nature of the source or the environmental capacity. Practically, prohibition of discharging of industrial wastes and domestic sewage into sea is not feasible technically as well as economically. There is a need to keep a balance between development and environment. Chinese Government is under great pressure to develop its economy as fast as possible in order to meet the increasing demand of its huge population while protecting its marine environment effectively and efficiently. In order to keep balance between environment protection and economic development, the Regulation on Land-based Pollutants applies the following different rules to eight different types of pollutants, on the basis of their nature and marine environment capacity:

1. **Solid wastes.** It is prohibited to pile up, discard or treat solid wastes along seashores and beaches without authorisation. If it is necessary to pile up and treat solid wastes temporarily in the said area, a written application for authorisation shall be submitted to environmental protection department at provincial level (Art. 11). The entities or individuals, who have received approval for piling up and treatment of solid wastes, shall build dykes and installations, etc. for prevention of leakage or dust-raising (Art. 12).
2. **Noxious waste water.** It is prohibited to use any unauthorised methods to discharge noxious or harmful waste water by diluting or seeping (Art. 13).
3. **Radioactive substance.** It is prohibited to discharge any waste water which contains high-level or medium-level radioactive substance into the sea. Any discharge of waste water which contains low-level radioactive substance shall be carried out strictly in compliance with the State regulations and standards in this area (Art. 14).
4. **Oil, acid liquid, alkaline liquid and venom.** It is prohibited to discharge oil, acid liquid, alkaline liquid or venom into the sea. And no industrial waste water containing oily water, harmful heavy metal, may be discharged into the sea unless it is properly treated in conformity with the State and local standards (Art. 15).

5. **Pathogens.** No waste water carrying pathogens may be discharged into the sea unless it is properly treated in conformity with the relevant regulations and standards of the State and local government (Art. 16).
6. **Heated water.** The heated water, which is to be discharged into the sea, shall meet the relevant State standards (Art. 17).
7. **Organic and nutrient substances.** In discharging industrial waste water or domestic sewage containing organic or nutrient substances into the sea area with low capacities of absorption, the quantity of such discharging shall be put under control. And the outlet for discharging sewage shall be installed in the site with good condition of sea water circulation (Art. 18).
8. **Medicines.** Expired or forbidden medicines or medical equipment are prohibited to be discarded along the seashores and beaches (Art. 19).

4.2 The Regulation on the Prevention of Pollution of Sea Areas by Vessels

4.2.1 An introduction to marine pollution by vessels

One of the most widespread types of pollution of the marine environment undoubtedly results from certain long-standing, accepted practices on the part of vessels engaged in maritime commerce: dumping of wastes in the ocean, the discharge of various forms of oil, including used oil, rinsing of cargo tanks, and the release of ballast water. Another major source is accidental pollution coming from grounded or otherwise damaged oil tankers and vessels with cargoes of dangerous substances.

Pollution from vessels is the form of marine pollution most familiar to the world community, and in China. The first regulations to prevent marine pollution address this source of pollution. The general framework of international norms concerning this problem is outlined by UNCLOS articles 194(3)(b), 211, and 217-221. These provisions summarise the problem, providing that the measures taken to provide enforcement should include those designed to minimise, to the fullest possible

extent, pollution from vessels, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, preventing international and unintentional discharges, and regulating the design, construction, equipment, operation and manning of vessels. The various provisions of UNCLOS relating to jurisdiction over vessel violations of environmental norms have been supplemented by MARPOL.

4.2.2 The promulgation, application and principles of China's Regulation

On December 29, 1983, one year after the adoption of 1982 Marine Environmental Protection Law, the State Council of China promulgated the Regulation on the Prevention of Pollution of Sea Areas by Vessels, which are composed of 12 chapters containing 56 articles.

The Regulation applies to all Chinese and foreign vessels within the sea areas and sea ports under the jurisdiction of China, as well as to the owners of such vessels and other individuals (Art. 2).

Under the Regulation, no vessel in the sea areas or in the sea ports under the jurisdiction of China may discharge oil, oily mixtures, wastes and other poisonous or harmful substances, unless in a way not violating the 1982 Marine Environmental Protection Law or the Regulation on the Prevention of Pollution of Sea Areas by Vessel (Art. 4). And no vessel may discharge oil, oily mixtures, wastes or any other poisonous or harmful substances into fresh water areas of the ports close to estuaries, special marine conservation zones or marine natural conservation zones (Art. 5).

4.2.3 The definition of vessels and pollution by vessels

The Regulation of China applies to ships, which is defined in Art. 52(2) as a ship of any type, including power driven vessels or non-power driven vessels, but excluding mobile or fixed platforms.

MARPOL applies to ships, which is defined in Art. 2(4) as a vessel of any type whatsoever operating in the marine environment, including hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms. The Regulation explicitly provides that mobile or fixed platforms for oil exploration or exploitation at sea are not covered by the Regulation, but regulated by other corresponding regulations. In the provisions of MARPOL, “fixed or floating platforms” themselves are not specifically defined to include fixed or floating platforms for oil exploration or exploitation at sea. However, under the other provisions of the same article in MARPOL, discharges do not include release of harmful substances directly arising from the exploration, exploitation and associated offshore processing of sea-bed mineral resources. It is clear that the definition of ships in MARPOL also does not refer to fixed or floating platforms for oil exploration or exploitation at sea. Therefore, the basic implication of these two definitions is the same. In addition, the Regulation divides ships into power driven vessels and non-power driven vessels. This is to address the conditions of China where at present there are still a lot of non-power driven vessels used for various purposes.

Pollution itself is not defined either in the Regulation of China or in MARPOL, but its elements are found in other provisions. In the Regulation of China, this term means oil, oily mixtures, wastes, and other poisonous or hazardous substances discharged from ships (Art. 4 & 5). In MARPOL, this term means any release from a ship whatever its cause, including escape, disposal, spilling, leaking, pumping, emitting or emptying. The Regulation make provisions in terms of types of pollution, whereas MARPOL makes provision in terms of causes of pollution. The basic implication is identical.

4.2.4 Anti-pollution documents, anti-pollution equipment for vessels, and financial credit guarantees

Under the Regulation, every oil tanker of 150 gross tons and above, and every vessel of 400 gross tons and above, (other than oil tankers), and vessels carrying more than 2,000 tons of cargo oil should carry on board anti-pollution documents (Art. 14).

There are also requirements for anti-pollution equipment on oil tankers of 150 gross tons and above, vessels of 400 gross tons and above. These include provisions for separate pipelines for bilge water and ballast water, deposit tanks for oil sludge, standard discharge connections, oil water separating equipment or filtration systems.

In addition to the requirements mentioned above, under the 1982 Marine Environmental Protection Law of China, any vessel carrying more than 2000 tons of oil in bulk as cargo shall have a valid Certificate of Insurance or other Financial Security in respect to Civil Liability for Oil Pollution Damage, or a Credit Certificate for Civil Liability against Oil Pollution Damage, or hold other financial credit guarantees (Art. 28). The CLC Convention, accepted by China, also applies to these kinds of vessels engaged in international trade (Art. 13 of the Regulation).

4.2.5 Oil operations and discharge of oily water from vessels

Vessels, when bunkering or loading and unloading oil, must observe the operation instructions of the Regulation and take effective measures to prevent oil spills (Art. 17). The operation instructions and measures include:

1. Before operation, all pipelines and valves should be checked, all exhaust valves and discharge openings blocked, and relevant valves leading to the sea closed.
2. Apparatus and installations to be used for oil operations should be checked to see that they are all in good condition.
3. Oil collectors should be fixed in places where leaking or over-flowing is possible.
4. The communication signals worked out and agreed upon by the suppliers and the receivers of oil cargo shall be fully implemented by both sides, the signals worked out by the receivers being taken as the basis of the signalling system.

5. During operation, a sufficient number of men must be placed on duty. They must be duty-conscious and must strictly observe the regulations for operation, be well informed of the progress of the operation and must guard against leaks or spills.
6. The valves must be tightly closed as soon as the operation has stopped.
7. Before folding up the hoses, the openings of the hoses must be sealed with blind-flanges or other effective measures taken to prevent any oil left in the hoses from flowing into the sea.
8. Oil tankers must make accurate entries in the Oil Record Book about the operations. For non-tankers, such entries should be made in the Engine Log Book or On Duty Record.

If any seeping, oozing or leaking has occurred during the cargo operation of a vessel, immediate clean-up measures should be taken to alleviate oil pollution, and the accident should be made known to the HSA (Art. 18).

Upon arrival at a port, a vessel is not allowed to discharge ballast water, tanker washings or bilge water and other oily water at will, but should discharge them into reception facilities. If no reception facilities are available in port and if the oily water has to be discharged, a written report should be submitted in advance to the HSA and the discharge can only be carried out in the designated areas and in accordance with relevant regulations (Art. 19).

4.2.6 Dangerous cargoes shipped by vessels

Vessels carrying inflammable, explosive, corrosive, poisonous or radioactive cargo must take proper measures for safety and prevention of pollution and display the prescribed signals. In order to avoid pollution caused by any accident of falling or leaking of dangerous cargoes, vessels should observe the Regulation on Supervision and Control of Vessels Carrying Dangerous Goods issued by the Ministry of Communications of the PRC, and the International Maritime Dangerous Goods Code issued by the IMO (Art. 21).

Where poisonous, corrosive or radioactive cargoes are loaded or discharged, both the vessel and the cargo handling organisations should take measures to prevent the cargo from falling into the water. Should there be any such accident, immediate salvage and cleaning-up operations should be arranged and a report should promptly be made to the HSA and the departments or organisations concerned should be immediately informed, and appropriate steps be taken to prevent further damage (Art 23).

4.2.7 Compensation for pollution damage caused by vessels

The HSA may order vessels, which violate the Marine Environmental Protection Law and this Regulation and cause marine environment pollution damages, to pay the cost of eliminating pollution and compensate for the losses suffered by the State (Art. 39).

Entities or individuals demanding compensation under civil liability for damage suffered as a result of marine environmental pollution should either submit their claim to competent administrative authorities or file a lawsuit in the effect to the people's court (Art. 42 of the Marine Environmental Protection Law and Art. 40 of the Regulation on the Prevention of Pollution of Sea Areas by Vessels).

4.3 The Regulation on the Dumping of Wastes at Sea

Dumping is the deliberate disposal into the sea from ships or aircraft of waste loaded on board for this purpose. This was a legitimate means of disposal in the past. It is treated as a separate source of pollution, since it usually is the reason for the ship's journey and in addition is usually an extension of the practice on land (Brubaker, D (1993), page 73). It is estimated that this of for pollution contributes to approximately 10% of the total marine waste, whether disposed of on land or at sea. Dredged spoil, sediments dredged from harbours and bays are estimated to make up

about 80% of the total dumping waste, while sewage (from large metropolitan areas) and industrial waste are the other major contributors. The popularity of marine dumping was due to its inexpensiveness, ease of disposal, and partly due to the tightening up of pollution controls on land (Brubaker, D (1993), page 36& 37). A dumping problem just beginning to emerge relates to the disposal of oil platforms after the offshore oil fields dry up. The earliest global convention established to cover dumping is the London Convention (originally the London Dumping Convention). The London Convention has been used as a model for national legislation.

The Regulation on the Dumping of Wastes at Sea (hereafter called the Regulation on Dumping) was promulgated by the State Council of China in 1985, which is comprised of twenty-four articles and two important annexes.

4.3.1 Purpose

The Regulation on Dumping, under its first article, is formulated to implement the Marine Environmental Protection Law of China and to strictly control dumping of wastes at sea so as to prevent pollution damage to the marine environment, maintain ecological balance, preserve marine resources and promote the development of marine enterprise. This purpose has the same spirit as the London Convention. The London Convention has a clearly preventive purpose, underlined both in its preamble and in its first two articles: the States parties shall take all practicable steps to prevent the pollution of the sea by dumping of wastes and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

4.3.2 The definition of dumping

The main definition of dumping is provided by Article 2 of the Regulation on Dumping, which reads as follows:

“For the purpose of this Regulation, ‘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”.

This definition is broad and is, in general, similar to the definition used in Article III(1) of the London Convention, which includes any deliberate disposal at sea of wastes or other matter from vessels, aircraft, or other man-made structures at sea, or any deliberate disposal at sea of vessels or other man-made structures. However, the definition of the Regulation does not use the expression of “deliberate disposal”, which is used by the London Convention, instead of “disposal”. This may suggest that the definition of the Regulation of China extends the scope of the application. That means that any disposal is subject to the Regulation, wherever it is deliberate or not.

As the London Convention does, the Regulation on Dumping provides that dumping, specifically, is not meant to include the disposal at sea of wastes, etc., derived from the normal operation of vessels at sea. Nor is dumping to include the disposal of wastes related to the exploration or exploitation of sea-bed mineral resources. Normal operational ship pollution and pollution associated with the exploitation of sea-bed minerals are to be the subject of the Regulation on the Prevention of Sea Areas by Vessels and the Regulation on Environment Protection in Offshore Oil Exploration and Exploitation.

4.3.3 The scope of jurisdiction and applications

The Regulation on Dumping applies to the internal water, the territorial sea, the continental shelf and other sea areas under the jurisdiction of China (Art. 3 (1)). This means the scope of the Regulation on Dumping includes all marine waters within

national jurisdiction of China, including the exclusive economic zone and the continental shelf. The high seas, the international seabed and marine waters under the jurisdiction of other countries therefore are excluded.

Under Art. 210 of UNCLOS, States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment by dumping. For the territorial sea, the exclusive economic zone and the continental shelf, it is the coastal state which should regulate and control dumping.

The London Convention defines sea as including all marine waters other than the internal waters of States. The Convention's coverage is broad. It applies to sea areas including the high sea, the international seabed, as well as the territorial sea, continental shelf and other sea waters under national jurisdiction except the internal water.

The Regulation on Dumping apply to the following four activities:

1. the dumping of wastes or other substances into the internal sea or the territorial sea, or onto the continental shelf or into other sea areas under the jurisdiction of China;
2. the loading of wastes or other substances on land or in the harbours of China for the purpose of dumping;
3. the shipping of wastes or other substances in the internal sea, territorial sea or other sea areas under the jurisdiction of China for the purpose of dumping;
4. the incineration or disposal of wastes or other substances in the sea area under the jurisdiction of China (Art. 3).

4.3.4 Classification of dumping

The Regulation on Dumping categorise all wastes to be dumped into three groups, according to their respective toxicity and impact on marine environment, and set out the three different measures to deal with the three groups respectively.

The first group of wastes, which is itemised in Annex I of the Regulation on dumping, includes:

1. wastes containing organohalogen compounds, mercury or mercury compounds, cadmium or cadmium compounds, except for those containing a mere trace of the substances listed above and can be rapidly rendered harmless in sea water;
2. high-level radioactive wastes;
3. crude oil and its wastes, refined petroleum products, petroleum distillate residues or any mixtures containing such substances;
4. net, ropes, plastics or other artificial synthetic materials, which may float or may remain in suspension in the sea so as to interfere seriously with navigation, fishing or other activities or endanger marine organisms.

Under the Regulation on Dumping, wastes listed above are prohibited to be dumped. In cases of emergency when their disposal on land may pose serious danger to human health, such wastes may be dumped in the designated area after the dumping is approved by the State Oceanic Administration and an *emergency permit* is granted.

The second group of wastes, which is itemised in Annex II of the Regulation on dumping, includes:

1. wastes containing significant amount of i) arsenic and its compounds, ii) lead and its compounds, iii) copper and its compounds, iv) zinc and its compounds, v) organosilicon compounds, vi) cyanides, vii) fluorides, viii) beryllium, chromium, nickel, vanadium and their compounds, or ix) pesticides and their by-products not covered in Annex I;
2. wastes containing low-level radioactive substance;
3. containers, scrap metal or other bulky wastes which are likely to sink to the sea bottom and may present serious obstacles to fishing or navigation;
4. sewage sludges and dredged spoils containing substances in paragraph 1 and 2 of this Annex.

Under the Regulation on Dumping, substances listed in Annex II may only be dumped if a prior *special permit* has been obtained.

All other wastes or matter being dumped require only the issuance of a prior *general permit*.

This is exactly the same way as the London Convention deals with dumping of wastes, which is provided in Art. IV and the so-called black list/grey list method (Johnston 1981, page 221). In this present form, the Regulation on Dumping recognises the sea's ability to serve as a waste treatment facility for limited quantities of waste.

The London Convention does not create guidelines for the issuance of special or general permits, it rather leaves this wholly to each contracting party to determine. The Regulation therefore makes more detailed provisions in respect to the characteristics and the composition of the matter, as well as the characteristics of the dumping site and the method of dumping.

Under the Regulation on Dumping, the State Oceanic Administration is designated as the competent authority in charge of dumping of wastes at sea (Art. 4). The dumping areas at sea shall be designated by the competent authority, in consultation with the departments concerned on the basis of scientific, rational, safety and economical principles, subject to approval by the State Council (Art. 5). An entity which intends to dump wastes at sea shall make an application to the competent authority by filling in an application form for dumping wastes as required and submitting this with a test paper on the characteristics and composition of the wastes (Art. 6).

4.3.5 Incineration at sea

Another form of dumping involves incinerating wastes at sea. In 1978, the London Convention adopted regulations covering incineration on the global level which are legally binding. One paragraph was added to each of the London Convention's Annexes I and II and an Addendum was added to Annex I, which allowed incineration at sea of certain substances subject to prior special permit, thus

permitting an exception to the dumping of Annex I substances (Brubaker 1993, page 78). The Regulation on Dumping does not have any specific provisions on incineration at sea, but the Regulation also applies to incineration of wastes and other substances at sea under jurisdiction of China (Art. 3(4)), which means all relevant provisions in the Regulation apply also to incineration wherever applicable.

4.4 Offshore activities

4.4.1 The Regulation on Environmental Protection in Offshore Oil Exploration and Exploitation

The Regulation on Environmental Protection in Offshore Oil Exploration and Exploitation was promulgated by the State Council of China on 29 December 1983 to implement relevant provisions in the Marine Environmental Protection Law and to prevent pollution damage to the marine environment by offshore oil exploration and exploitation.

The Regulation applies to all enterprises, institutions, operators and individuals engaged in offshore oil exploration and exploitation in the sea areas under the jurisdiction of China, and as well as applicable to fixed and mobile platforms and other related installations (Art. 2).

The State Oceanic Administration of China is appointed as the competent authority in charge of environmental protection in offshore oil exploration and exploitation (Art. 3).

To achieve the above mentioned purpose, the Regulation provides major systems, which are to be discussed in following paragraphs.

4.4.1.1 Environmental Impact Statement

While drawing up an overall development program for an oil (gas) field, an enterprise or operator shall draw up a marine Environmental Impact Assessment (EIA) and submit it to the environmental agency. The environmental agency, along with the State Oceanic Administration and the petroleum agency, organises the examination of the EIA (Art. 4).

The EIA shall consist of the following items:

1. the name, geographical location and size of the oil field;
2. the natural environment and condition of marine resources in the sea area where the oil field is located;
3. the types, composition, quantities and methods of disposal of the wastes that need to be discharged in the course of exploiting the oil field;
4. an assessment of marine environmental impacts: the possible effects of offshore oil exploitation on the natural environment and marine resources in the surrounding sea area; the possible effects on marine fisheries, shipping and other offshore activities; and the environmental protection measures proposed to be taken to avoid and mitigate various adverse effects;
5. the ultimately unavoidable effects and their extent and causes; and
6. measures to prevent major oil-pollution accidents, including, among others, the preventive organisation, personnel, technical equipment, communications and liaison (Art. 5).

4.4.1.2 Accidents and emergencies

An enterprise, institution or operator shall have the ability to meet emergencies with regard to the prevention and control of oil pollution accidents, work out emergency plans, and be provided with oil-recovery facilities as well as oil enclosure and elimination equipment and materials commensurate with the scale of offshore exploration and exploitation in which it is engaged (Art. 6). In case of pollution accidents such as oil spill or leakage occurring during operations, the

enterprise, institution or operator involved shall take prompt measures to enclose and recover the oil so as to control, mitigate, and eliminate the pollution (Art 16).

4.4.1.3 Disposal of wastes

Oily water shall not be discharged, either directly or in diluted form, from any fixed or mobile platform. When the water is discharged after treatment, its oil content must comply with the State standards concerning oily water discharge (Art 11). Residual oil, waste oil, oil-based mud, oily garbage, and other noxious liquid or residues shall be recovered and forbidden to be discharged or dumped into the sea. The disposal of industrial garbage in large quantities shall be controlled according to provisions concerning marine dumping, and scattered industrial garbage may not be dumped into fishing areas and navigation (Art 12).

4.4.1.4 Liability and commendment

An enterprise, institution or operator who has violated the Marine Environmental Protection Law of China and the present Regulation 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, and those who have discharged pollutants in excess of the set standards may be ordered to pay discharge fees (Art 26). The Competent Authority may, in light of circumstances, give a warning to or impose a fine on any enterprise, institution, operator or individual who has violated the Marine Environmental Protection Law of China or the present Regulation. The competent authority shall commend and reward entities and individuals who, on their own initiative, have reported on, or revealed the concealment of pollution damage accidents occurring in oil exploration and exploitation by an enterprise, institution or

operator, or have provided evidence in that respect, or have taken measures to mitigate such pollution damage (Art 29).

4.4.2 The Regulation on the Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects

The Regulation on the Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects was promulgated by the State Council of China on 25 May 1990 to implement relevant provisions in the Marine Environmental Protection Law, and to strengthen management of environmental protection against coastal construction projects, strictly control new pollution, protect and improve the marine environment.

For the purpose of the Regulation, Coastal Construction Projects refers to capital construction projects, technological renovation projects and construction projects for regional development on the seashore or adjacent to it, which are carried out for the purpose of controlling sea water or making use of the sea. They mainly consist of projects including: ports, terminals, shipyards, ship-repairing yards, thermal power stations, nuclear power stations, oil depots, mines, chemical plants, paper mills, iron and steel works along the seashore, construction projects to treat and dispose of solid wastes; construction projects to discharge waste water of cities into the sea and other construction projects to discharge pollutants into the sea; water conservancy and sea-lane construction projects in the estuaries; tidal power stations; coastal filling projects; fishery projects; bridges spanning the sea and tunnel under the sea; sea walls; seashore protection projects and all other development construction projects which can change the natural characters of the seashores and tidelands (Art. 2) .

The Regulation applies to all entities and individuals who build such coastal construction projects in the domain of China (Art. 3).

4.4.2.1 Environmental Impact Statement

One of the major tools to control adverse impact on marine environment by coastal construction projects is Environmental Impact Statement. According to the Regulation, the entities which build coastal construction projects must draw up an Environmental Impact Statement (Form) at the stage of feasibility research and submit it to the environmental protection department for examination and approval with the pre-examination by the competent authority in charge of the projects and the relevant competent authority according to the stipulated procedures (Art. 7).

The Environmental Impact Statement shall state:

1. environmental condition of the area where the project is located and of the sea area nearby;
2. impact which the project is likely to cause on the marine environment during and after the process of building;
3. measures to be taken to protect the marine environment and the conclusion concerning the technical and economic feasibility of the measures;
4. conclusions of an assessment of marine environmental impact concerning the construction projects.

4.4.2.2 The protection of important sea areas

It is prohibited to build coastal construction projects which pollute the marine environment or cause damage to the landscape in special marine protection areas, marine natural reserves areas, seashore scenic and tourist areas, salt-field protection areas, bathing sea beaches, major fishing areas, and other areas which need special protection. To build coastal construction projects beyond the limit of the foregoing areas shall prevent to cause damage to the quality of the environment in above-mentioned areas (Art 10).

It is forbidden to build coastal construction projects which change and destroy the habitat of wild animal and plants protected particularly by the State or the local government (Art. 22).

It is forbidden to build coastal construction projects which destroy the ecosystem of mangroves and coral reefs (Art 24).

4.4.2.3 Provisions governing different kinds of coastal construction project

The Regulation includes different provisions governing seven major kinds of coastal construction projects.

1. **Ports.** When building ports or terminals, the anti-pollution installations which match up to the handling capacities and varieties of goods shall be installed (Art. 15).
2. **Shipyards.** In building shipyards or ship-repairing yards along the seashore, facilities suited to their nature and scale shall be installed for receiving and treating oil residues and waste oil, etc. (Art. 16).
3. **Nuclear power station.** Building nuclear power stations and other nuclear facilities along the seashore, shall be conducted in strict compliance with the State regulations and standards concerning nuclear protection as well as radioactive protection (Art. 17).
4. **Oil depot.** In building seashore oil depot, facilities to receive and treat oily waste water and facilities for emergencies shall be installed (Art. 18).
5. **Mine.** When constructing a mine along seashore, measures shall be taken to prevent pollution to the marine environment in accordance with relevant regulations (Art. 19).
6. **Garbage Yard.** In building garbage yard or site for filling and covering up industrial wastes, embankment and confining bed at the bottom of the yard or site shall be built (Art. 20).

7. **Tidal power station.** In building tidal power station or water conservancy facilities, measures shall be taken to prevent it from causing damage to ecological environment and aquatic resources (Art. 21).

4.4.3 The Regulation on the Prevention of Environmental Pollution by Ship breaking

The prevention of marine environmental pollution by ship-breaking is not stipulated in the 1982 Marine Environmental Protection Law. The reason behind this is that in the early 1980s, ship-breaking in China was still in its embryo. The second half of 1980s saw a significant development of ship-breaking business in China, mainly due to the cheap labour cost and long coastal line. In response to the adverse effect caused by the rapid developing ship-breaking, on May 18, 1990, the State Council of China promulgated the Regulation on the Prevention of Environmental Pollution by Ship-breaking.

The Regulation applies to all units and individuals engaged in ship-breaking activities on the coast and/or on the water within the water areas under the jurisdiction of China (Art. 2).

“Ship-breaking on the coast” is defined in the Regulation as dismantling of ships alongside the ship-breaking wharf, a ship dismantling in dock, a ship dismantling grounded to the seashore except for ship’s grounded in marine casualties, while “ship-breaking on the water” defined as an abandoned ship dismantling completely in the water (Art. 3).

The environmental protection departments of the central government and local governments at provincial as well as district level are responsible for organising, co-ordinating, supervising, and inspecting for environmental protection of the ship-breaking programmes and are in charge of environmental protection of ship-breaking along the coast beyond the harbour water areas. The HSAs are in charge of environmental protection of ship-breaking on the water and ship-breaking within the water areas of the comprehensive harbour. The State Fisheries Administration and

Fishing Harbour Superintendency Agency are in charge of the environmental protection of the ship-breaking within the fishing harbour water areas, and are responsible for supervising the impacts on the coastal fishing water areas by ship-breaking activities. The military environmental protection department is in charge of environmental protection of ship-breaking within the military harbour water areas. The State Oceanic Administration and water protection agencies of the major river systems are responsible for supervising the prevention of environmental pollution caused by ship-breaking activities in co-operation with all the above-mentioned competent authorities (Art 4).

Major rules governing ship-breaking in the Regulation are as follows:

1. **Protection of important sea area.** No ship-breaking enterprise is permitted to be established in the protection areas of drinking water sources, protection places for pumping salt water for de-salting, salt-field, important fishing areas, seaside resort, scenic or historic sites and other areas which need particular protection (Art. 5).
2. **Environmental Impact Statement.** The environmental impact statement of the ship-breaking enterprise shall be formulated before its establishment and shall include the location of the enterprise, the surrounding environmental condition, the size and conditions of ship-breaking, the technical process used by the enterprise in question, measures for the prevention of pollution, and the effectiveness of the expected prevention and control measures (Art. 6).
3. **Facilities required.** Enterprises engaged in ship-breaking shall install necessary facilities to prevent pollution to marine environment, such as oil defender, equipment for receiving and disposing oil-polluted water and sites for collecting and disposing waste substances, etc. (Art. 10).
4. **Management of accidents.** In case of pollution accident caused by ship-breaking, the person or organisation involved shall immediately take measures to control and eliminate such pollution and shall immediately report the accident to competent authorities (Art. 15).

5 Evaluation and recommendations

After the preceding examination of the development of legislation for marine environment protection and its basic regime, a general evaluation of development of current legislation for marine environment protection will now be undertaken. Subsequently, recommendations for future development will be made in this concluding part of the paper.

5.1 General evaluation for current legislation

Laws and regulations are necessary means of achieving compliance with even the minimum proposed standards on the prevention, reduction and control of environmental degradation. Broadly speaking, regulatory measures are the backbone of the implementation and enforcement measures. Therefore there is no question whether legislation should be employed in this area. The question is always how to regulate the issue of marine environment protection. So the general evaluation of current legislation will be carried out mainly through discussion of two general issues of the legislation, namely, the structure and the principles of the legislation.

5.1.1 The structure of current legislation

The design of a mechanism for effective control of marine pollution is difficult. Part of the difficulty arises from the complexity of the sources of pollution and partly from the diversity of interests which various people have in the marine environment. Because of these limitations there is a need to establish a comprehensive, systematic approach capable of identifying the problem and providing effective control on a continuing basis. Marine pollution control can be seen as a very complex undertaking which deeply and comprehensively involves science, technology, economics,

sociology, law, and politics. The effectiveness of national policy depends on a sophisticated appreciation and analysis of all these factors in the context of the history, tradition, structure and capacity of the state, and of its perception of the future.

For the general design of policy and legal development on marine pollution control, marine pollution can be classified into several forms by virtue of the sources of harm and hazard. The source in each case is functionally conceived, referring to a type of activity that causes the harm or hazard. These forms of marine pollution are:

1. ship generated pollution or vessel-source pollution (navigation);
2. pollution by dumping (the disposal of wastes at sea);
3. land-based pollution (the discharge of a wide range of shore-generated effluents);
4. pollution from coastal activities (offshore oil exploration and exploitation, coastal construction, and ship-breaking).

This means of classification has been commonly employed by international agreements on marine pollution including UNCLOS. It has also been used for the development of China's legislation in this field.

While acknowledging some common features among the four forms of marine pollution, it is well aware that they differ from one another in scientific, economic and social perspectives because each form of pollution is generated from a type of activity with special features. For example, in the case of vessel-source pollution, oil and oily mixtures are, among others, the major contaminants. Ships are the only actor, and shipping industry is the major economic sector that will be regulated, and the discharge is performed at sea. However, in the case of land-based pollution, it obviously involves more substances than oil and oily mixtures, ships are no longer the actor, the objects of regulation will be pollution-generating industrial, agricultural and municipal activities and since the discharge may occur inland, there is a problem of how to address the means by which contaminants are transported into the marine environment. Clearly, the rules and standards for the control of vessel-source pollution will not work for the control of land-based marine pollution and impacts of

control of vessel-source pollution on economic and social development are probably less comprehensive and less far-reaching than those in the case of land-based pollution control.

The complexity of marine pollution results in the complex structure of marine environment legislation. In China, the 1982 Marine Environmental Protection Law is, of course, a cornerstone of the whole structure of marine environment legislation, which provides detailed provisions aimed at controlling marine pollution when the development of national legislation is still in its initial stage. The 1982 Law establishes basic principles, norms, criteria and standards and is formulated to promote the development of national legislation for marine environment protection. But it does not, can not and need not cover all aspects of marine environment issue in detail. In other words, it leaves room for further development of legislation in this area. Against such background, six specific Regulations were developed to implement the 1982 Law, which are themselves significant contributions to legal development in the field of marine pollution prevention and control. They not only provide for what should be done, but also provide information on the "how" and the "why". They make it easier for policy-makers to choose the right control strategies and to put them into practice quickly and effectively.

In addition to legislation which is developed entirely to deal with marine environment issue, in today's world, national regulation also adopts other ways to handle this issue. One common approach is to regulate pollution control together with other aspects of a specific activity, for instance, land-based marine pollution may be controlled in some degree by regulations over industrial development.

This approach is also adopted by Chinese legislature. As mentioned in Chapter 2, 1986 Fisheries Law and 1987 Regulations for the Implementation of the Fisheries Law, 1986 Mineral Resources Law and 1989 Regulations on the Protection of Underwater Cultural Relics all include some provisions concerning marine environment.

5.1.2 The principles of current legislation

The overall basis for marine pollution control is that marine pollution causes adverse effects to marine life and human health, in this context, legislation for marine pollution control may be developed on two bases:

1. the traditional basis--to minimise the direct and immediate damage to marine life, which consists of living resources, and to persons; and
2. the ecological basis--to minimise the damage to the marine ecosystem even if there is no direct and immediate damage to particular marine living resources or persons.

The basic intent of the approach is to keep the changes in the quality of the marine environment within minimum tolerable levels. Environmental quality standards are usually expressed in terms of the expected concentration of substances in the water, biota or sediment. Ideally, the standards should be high enough to ensure that no deleterious effects are experienced in any sector of the marine environment, but that is probably unrealistic. Pollution control is not a purely scientific matter. There are major social, economic and political factors involved, resulting in environmental quality standards being specified that may turn out to be something other than the scientifically calculated maximum tolerable levels.

The special features of the activities concerned sometimes affect the choice of legal approaches to control. When the damage caused is likely to be attributed to a particular action or actor and the adverse effects are not long-lasting or irreversible, a liability approach might be preferable. On the contrary, when the polluter is hard to identify or the adverse effects are persistent or irreversible, the preventive approach becomes the primary acceptable approach.

The above mentioned two policies result in two widely recognised principles in the area of marine environment protection, namely, the polluter-pays-principle and the principle of precaution.

From a legal point of view, these principles primarily are structural principles, i.e. guiding principles of a general kind that are merely reflected in the provisions of environmental statutes and justify them, but which are not directly applicable. They have, in part, the function of a norm and must be directly applied by the competent authorities (e.g., that the principle of precaution is a permit requirement under the legislation).

The principle of precaution concerns the content and intensity of environmental protection. It means that environmental regulation is not limited to the elimination or reduction of pollution which already exist or is imminent (protection against dangers as opposed to mere risk), but ensures that pollution is combated in its incipiency and that natural resources are used on a sustained yield basis. The principle has several different aspects, such as minimising pollution to the extent possible, reduction of waste materials, prohibition of significant deterioration of the environment, reduction of known but highly improbable risk, screening of new products, and consideration of environmental concerns in physical planning. Various preventive measures should be taken.

The polluter-pays-principle concerns the distribution of the financial burdens of environmental protection measures and selection of such measures. It means that costs incurred in preventing, eliminating, or offsetting adverse effects on the environment must be borne by the polluter.

China's legislation for marine environment protection also adopts the two world-wide accepted principles. The principle of precaution reflects clearly in the provisions concerning Environment Impact Statement, protection of important sea areas and the absolute prohibition of discharge of certain substances, and so forth; while the polluter-pays-principle is adopted in the 1982 Marine Environmental Protection Law as well as 6 Regulations in this area as one of the major remedial measures.

5.2 General features of current legislation

5.2.1 Uniformity and flexibility

The first characteristic of legislation is probably its uniformity and flexibility. Law is an instrument for shaping and regulating the behaviour of all entities and individuals within the community. This requires a high level of uniformity in its applicability.

China's legislation for marine environment protection is a good example in this respect. The 1982 Law and six Regulations in this area are consistent in relevant matters. The case can be often found regarding the same issues. The Law provides for a general guideline, while the Regulations provide for specific provisions. For example, Article 24 of the Regulation on Environmental Protection in Offshore Oil Exploration and Exploitation provides that when an enterprise, institution or operator causing pollution as a result of force majeure asks to be exempted from compensation liabilities, they must submit a report to the competent authority. Such a report shall verify that the pollution damage has really resulted from one of the causes specified in Article 43 of the Marine Environmental Protection Law. Article 43 of the Marine Environmental Protection Law provides three causes for exemption, which have been discussed in the previous part of the paper. That means the party concerned can only ask to be exempted for civil liability under the circumstances of the three causes provided by the Marine Environmental Protection Law.

Since law is created in different stages of social, economic, political and cultural development, it also requires and manifests flexibility in order to tolerate differences and accommodate revisions. The causes of marine pollution are very much diverse. They can be intentional; for example, the dumping of wastes whose disposal is difficult or more expensive on land. Pollution also can be accidental, resulting from ship groundings or loss of containers of toxic or dangerous products. It may be necessary to utilise various regulatory techniques which take into account these differences. Legal norms must be flexible to deal with this diversity of situations. The

complex nature of the subject of marine pollution control demands certain balance between uniformity and flexibility in the legislation. The provisions of the legal regime of China should be thought to be successful in this respect.

5.2.2 Regulatory and remedial approaches

Most of the legislation which has been developed in response to marine pollution can be characterised as either preventive or remedial in nature. In most cases, either the primary purpose is to impose reasonable precautions to reduce the frequency of incidents, and to minimise the potential damage before incidents occur; or, it is to provide for the availability of compensatory remedies and other forms of relief to the victims of such injuries after the incidents occur.

The primary purpose of the regulatory or preventive approach is to impose reasonable precautions to reduce the frequency of pollution incidents and to minimise the damage before it occurs. At the international level, such an approach leads to uniform rules and standards on preventive measures, such as permit programmes, emission and environmental quality standards.

The preventive branch of marine pollution law is more directly concerned with the imposition of regulatory controls, through research or review requirements, higher technical standards, operational conditions, professional criteria, licensing techniques, guarantees of accountability, and other modes of management. As ocean management in general and marine pollution control in particular become more sophisticated, law becomes increasingly regulatory in orientation. Numerous standards have been adopted which prohibit certain acts or submit them to strict regulation. Generally, these rules can affect only intentional pollution. To avoid environmentally harmful accidents, other legal principles must be applied which indirectly protect the environment. For example, strict rules governing the construction of tankers, navigation, and the training of crews are important.

The advantage of this approach is that it imposes direct regulatory controls which can be derived both from the traditional ground of "damage to man" and the ecological ground of "damage to the marine ecosystem". The preventive measures can be developed based on scientific judgement as to precisely how much pollution each known source will be permitted to contribute if the predetermined level of water quality is to be met. These measures can also be developed on another basis, such as economical or technical feasibility, for an interim period with adjustments made to the rules and standards to meet the predetermined levels of marine environmental quality step by step later on. The preventive rules and standards can concern not only the prohibition of potentially harmful activities but also the promotion of any activities that may help the identification of potentially harmful activities or help the improvement of the quality of the marine environment. This approach also has its disadvantages. The enforcement of precautionary measures is difficult, especially when the omission of preventive measures does not necessarily cause direct degradation of the marine environment.

The remedial approach can also be called the "liability" approach (Meng, Q (1987), page 13). Its primary purpose would be to provide for the availability of compensatory remedies and other forms of relief to the victims of pollution incidents. This approach is consequence-oriented. It relies generally on private litigants to identify the harm to which they are exposed. The remedial branch of marine pollution law is based on traditional concepts of fault, negligence, or criminal culpability, or on strict liability or no-fault systems, sometimes accompanied by provisions for victim entitlement to compensation through the establishment of a fund for that purpose., to assess the degree of harm, and to seek specific redress against a named defendant.

The advantage of the liability approach is that it does not depend on an understanding of complex scientific, economic and social problems. Almost everyone admits that compensation should be provided to the victim of excessive damage and that the healthy state of the environment should be restored. Once damage is an established fact, the liability approach requires only a body of rules, criteria and

procedures to quantify the liability. The disadvantage of this approach is that the basic prerequisite of a cause-effect relationship can hardly be established when the sources of the pollution in question is non-point in nature or the sources are too widely scattered. In these circumstances, it is difficult to attribute injuries to a particular action by a particular polluter. In addition, even if the polluter can be identified and the particular injured person is compensated, the damage to the marine ecosystem is often overlooked since the identification of the specific potential victims is almost impossible. As a matter of fact, even if there is a way to compensate all the injured (or the indirectly injured), the liability approach will often appear inadequate because quite often the quality of the environment concerned cannot be completely restored when the environmental ecosystem is totally damaged.

In most of the cases legislation in this area is preventive rather than remedial, in other words, the emphasis is placed on prevention. This does not suggest that compensation for damage caused by pollution is not an important issue with which the law should not deal, but it does show that states have realised that prevention is more important than cure in this area.

First of all, remedial law is based on the traditional concepts of liability and compensation. The prerequisite of this type of law is the establishment of a cause-effect relationship between the polluter and the pollution, no matter whether the law is based on fault, negligence, criminal culpability or strict liability. However, this type of law is inadequate to achieve the goal of protection of the marine environment. Since pollution is usually the result of long-term accumulation or the interaction of various substances from different sources and the sources are sometimes non-point, the identification of the polluters is sometimes very difficult, even impossible, to realise.

Secondly, even if the direct victims are well compensated, the damage to the quality of environment (which may eventually impair the interests of all members of the society) can hardly be compensated. Especially when the damage to the environment is irreversible, compensation is a poor substitute. Therefore, major efforts have to be placed on prevention.

The primary purpose of preventive law is to require reasonable precautions to reduce the frequency of incidents and to minimise danger before it occurs. Preventive law can prohibit particular dangerous activities and it requires particular precautionary actions. Among all preventive measures, planning and management should always be considered with any significant new development, and should include requirements for Environmental Impact Assessment as an effective instrument to prevent pollution.

These two legal approaches in legislation for marine pollution control are not mutually exclusive. In practice, both are used to deal with the same type of marine pollution and can thus complement each other. However, due to the growing awareness of the ecological element of marine pollution control, and as ocean management in general, and marine pollution control in particular, become more sophisticated, the law of marine pollution control may become increasingly regulatory in its orientation. As is the case of China's legislation for marine environment protection. Most of the provisions in 1982 Law on Marine Environment Protection and relevant Regulations are preventive, while necessary remedial provisions are also included.

5.2.3 Positive and negative obligations

The third characteristic of the legal regime is that most of the obligations tend to be both positive and negative. In other words, most obligations are designed to induce entities or individuals to contribute to the control of pollution, while others prohibit them from undertaking specific activities that are environmentally unjustifiable.

Both positive and negative approaches are adopted in China's legislation for marine environment protection, with emphasis on the positive side. For instance, under the Regulation on the Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects, as for positive obligation, it provides that in building shipyards and ship-repairing yards along the coast, facilities suited to

their nature and scale shall be installed for receiving and treating oil residues and waste oil, receiving and treating oily waste water, enclosing, recovering and eliminating oil, receiving and treating the industrial waste water, and garbage from industry and ships (Art. 16). As for negative obligation, it provides that it is forbidden to build the coastal construction projects which change and destroy the habitat of wild animals and plants protected particularly by the State and the local government; It is forbidden to build the coastal construction projects which are likely to pollute and destroy the habitat of wild animals and plants particularly protected (Art. 22). Many similar positive and negative obligations can be found in the same Regulation and other Regulations. The control of marine pollution requires comprehensive efforts by all parties concerned. The prohibition of pollution activities is probably easier to enforce but the encouraging of all parties concerned to make their best efforts within their capacities will be more feasible.

5.2.4 Administrative nature

The fourth characteristic of the legislation is its great administrative nature. From the basic law to the six specific regulations, quite a lot of provisions concern administrative power, obligations and procedures. Many projects related to the environment are subject to administrative approval and have to go through corresponding administrative procedures. The enforcement of the legislation is delegated to those administrative authorities. Dispute resolution is first subject to administrative settlement. Under the legislation, the State uses administrative intervention to protect the marine environment. The administrative means of the environment law is also commonly used in some other states' legislation. For example, "in the Netherlands, administrative law plays a major role in the implementation of environmental law"(Smith Jr, T. and Kromarek, P(1989). Page 147).

5.3 Developments of and challenges to China's legislation for marine environment

5.3.1 Developments of China's legislation for marine environment

Given the complexity of the subject, particularly its deep and comprehensive impact on national economy and politics, the present development of China's legislation for marine environment can be considered as a success, with its impressive achievements in the right direction.

The legislation has some new developments. One example is the introduction of criminal liability. The criminal responsibility may be prosecuted under two circumstances. First, under the Marine Environmental Protection Law and the Regulation on Dumping of Wastes at Sea, the persons directly responsible for heavy losses of property as a result of the pollution damage to the marine environment in violation of the Regulation, shall be prosecuted for their criminal responsibility by judicial organs (Art. 44; Art. 21 respectively).

Second, under the Regulation on the Prevention of Pollution Damage to the Marine Environment by Coastal Construction Projects, the Regulation on Prevention of Pollution Damage to the Marine Environment by Land-based Pollutants, and the Regulation on Prevention of Environmental Pollution by Ship-breaking, the staff of the environmental protection departments that abuse their powers, neglect their duties, bend the laws to their own benefit, or conduct malpractice, shall be given administrative punishment by the units they belong to or by the body at a higher level. Those who commit a crime shall be investigated and prosecuted for criminal responsibilities (Art. 31; Art. 34 ; Art. 27 respectively). These provisions more or less reflect the strictness of the legislation, and represent a new direction in the environment protection law.

This new development in environmental law can be also found at the regional and national level in the world. At the regional level, the Paris Convention and Lima Protocol contain provisions on "punishment" for land-based marine pollution. This is

something which is beyond the scope of "liability and compensation"; and, at the national level, some states have already made environmental pollution a criminal offence in their national legislation (Meng, Q (1987), page 213).

5.3.2 Challenges to China's legislation for marine environment

While great progress has been made in the protection of the marine environment, work in the area is still far from complete. In an age when international commerce has become critically dependent on transport of goods by sea, it would be naive for environmentalists to try to promote legal regimes which would cripple international shipping or render it prohibitively expensive. Reasonable solutions must be capable of effecting a workable balance between both sets of competing interests. The challenge of marine environment protection legislation in the future also lies in finding ways of converting general marine legal control provisions into practice.

Another familiar difficulty in the prevention of marine pollution is that of extraterritoriality: how to enforce national or international precautionary measures outside national territorial limits. The 1969 Intervention Convention provides for a legal regime, but the terms of the Convention are rather narrowly restricted, and of course, they are binding only on those states that have chosen to ratify the instrument.

In addition to the general challenges most countries are facing, the following factors have made the process of implementation of China's legislation in this area more difficult:

1. a large population. By the end of this century, China's population will reach 1.3 billion. It is the biggest impact on environment. The urban population will also reach 300 million and the environmental load of the cities will be further aggravated;
2. irrational industrial structure, numerous small and medium-sized enterprises in the countryside and the development of township enterprises have brought about new pressures;

3. the energy structure with coal as the mainstay has seriously polluted the air;
4. integrated decision-making mechanisms have not been established. The State, provinces, cities, counties and townships at different levels have basically made decisions and implementation of economic development and environmental protection separately and have not established comprehensive decision-making mechanisms, thus easily ignoring environmental protection;
5. shortage of funds and lack of investment in environmental protection;
6. lack of technical and management capabilities to plan, implement and manage marine pollution programmes.

5.4 Recommendations for future development

5.4.1 Factors that influence the future development of legislation

At present China is at a special stage, because of the fast development in China's industry and the change over from a planned economy to a market economy. The macro economic and industrial policy are subject to ongoing changes. The environmental policies have to be adjusted to fit into the new economic situation. The changes are obvious, but there is a great deal of uncertainty in the scope and direction of the developments. Factors that may influence the future development of legislation are as follows.

5.4.1.1 Scientific understanding

In spite of the impressive development of national environmental law over the recent decades, there remains the considerable problem of action in the face of scientific uncertainty. Environmental protection through legal regulation is based on knowledge of the environment, its state, its deterioration and the remedies which are likely to prove effective. The discharge of effluents into the marine environment must

be regulated and controlled simply because such substances, or their interactions, are hazardous to marine life, the marine ecosystem and human health. Scientific data disclosing adverse effects of marine pollution have spurred concern for environmental protection. However, a resolution of the marine pollution problem requires a scientific determination of the parameters of the problem and the nature of the mechanisms available. An understanding of pollutants, sources, pathways, targets, synergism, and the assimilative capacity of the marine environment is a prerequisite to the task of designing a control strategy and to determining control standards, whether at the national or international level. The need to establish and maintain a current knowledge base on implications of marine pollution is important. However, scientific knowledge is far from complete. Some uncertainty always remains, on points of varying importance. In addition, new elements are constantly being added as technology changes and human uses of the environment evolve. Scientific recommendations thus are subject to frequent revisions. At the same time, legal norms based upon scientific evidence must respond to current demands. For example, in the field of nuclear energy plants, safety rules had to be adopted for using nuclear energy.

5.4.1.2 Economic considerations

Economic development is the principal process through which nations seek to achieve and/or improve the well-being of their citizens. In today's world, industrialisation is the accepted vehicle for modernisation and economic growth. In a sense pollution control is an economic issue because environmental degradation is the by-product of economic development. The environmental ramifications of developmental activities often preclude further economic development. Pollution control is also an economic issue because its regulation affects the level of consumption of both natural and human resources. Additionally, the feasibility of implementing effective control measures depends upon economic capability. It is thus

apparent that the conflicting objectives of economic development and environmental protection must be reconciled.

5.4.1.3 Social and political complications

First of all, national environmental policy-making is a political process. Pollution abatement can be costly. But pollution abatement is certainly not a waste of money. From a long-term point of view, the preservation of living resources and the improvement of human health are beneficial to and essential for economic development. As a result, the relation between economic development and environmental protection becomes two-fold. In the short term, pollution abatement is a burden on economic development; in the long term, it enhances economic development. To this end, the issue of economic development versus environmental protection becomes a political rather than an economic one. National environmental policies must be made on the basis of a proper balance between short-term and long-term benefits.

Political complications may arise from domestic politics on issues other than those directly relating to environmental protection. Different governments may have different environmental policies although the economic conditions are not substantially different.

Social and political complications also come from competition for power within government structures. Each division of government is responsible for the management and administration of a particular field. Each has power to decide policies and strategies. Each is inevitably drawn into competition with other departments. The relationship among different divisions of the government is particularly divisive as regards the environment. Even when a specific department or agency has been mandated to deal with the environment, the power to decide on strategies and measures for implementation is frequently held in other departments or agencies with responsibilities in specialised fields. The problem is further complicated

by the fact that nearly all government departments, in theory, may have an interest in the subject, necessitating some kind of indirect co-ordination between departments.

Contradictory interests of different social groups also have implications in this respect. In maritime provinces, the protection of the fishery probably becomes the major factor in stimulating pollution abatement, but in inland provinces the interests of the industries are more important. These conflicts of interest could have a negative impact on environmental policy-making.

National legislation for marine environment protection will inevitably be influenced by the development of international law in this field. As states are political institutions, the development of international law on marine pollution is a political matter. Inevitable ensuing multilateral complications are prominently illustrated by the controversy between developing and developed countries on the issue of accountability for the existing state of marine pollution. Any rules and standards formed on the international basis will certainly influence China's legislation.

5.4.2 Recommendations

China's marine environment legislation is relative new, with a brief history of one and half decades. Therefore, despite its impressive progress, there is, of course, still room left for improvement. For instance, another source of marine pollutants, atmospheric pollutants, has not been addressed by current legislation yet. The 1982 Marine Environmental Protection Law does not include any provisions concerning marine pollution by atmospheric pollutants. No specific regulations governing this issue have been adopted either.

However, the current dissatisfactory situation regarding China's marine environment is due, mainly, to the lack of effective and efficient implementation of the relevant legislation rather than to the deficiencies of the legislation itself. The implementation of legislation depends not only upon the law enforcement agencies but

the overall political, economic, and social surroundings, which exert influence upon implementation of legislation in one way or another.

In this sense, the author's recommendations with regard to the improvement of China's marine environment legislation will focus upon the measures to enhance a conducive ideological and socio-economic environment for implementing the existing legislation rather than to single out a few deficiencies from the legislation itself.

5.4.2.1 Raising marine environment awareness

The awareness of the necessity to protect the marine environment is the prerequisite for the implementation of legislation in this regard. It is true, in some cases, strict control of marine pollution may cause difficulties in economic development. For instance, requirements to protect marine environment in coastal project construction may increase in cost, slow down the pace, etc.. To some extent, the question as of how many immediate benefits can be sacrificed if the long-term benefits are to be achieved is an ideological issue, which can be addressed only in an ideological way. In this sense, raising consciousness to control marine pollution for the long-term benefits will be central to the full implementation of relevant legislation. In this regard, the following measures, *inter alia*, are necessary:

1. **Reinforcing information campaign for relevant legislation.** Information campaign to promote the awareness of marine environment including relevant legislation should be carried out at national level through mass media in order to let the people know the seriousness of existing marine pollution, its consequence in the future and the way to control and prevent it.
2. **Promoting environment education.** Environment protection should be integrated into basic curriculum of schools and universities.

5.4.2.2 Strengthening the capacity of implementation marine environment legislation

The capacity of a state to implement legislation for pollution control is a very practical issue, involves both material and intellectual resources. The insufficient capacity of law enforcement of marine environment pollution proved to be one of the major obstacles to full implementation of relevant laws. To improve the situation, the following measures should be taken:

1. **Strengthening institutional capacity.** Compared with other governmental agencies, law enforcement agencies in the area of marine environment protection are relatively new. A lot of catch-up needs to be done urgently, including, among others, establishing grassroot agencies in coastal area, training inexperienced staff, and strict evaluation of their performance.
2. **Strengthening economic capacity.** Government budget, at both state and local levels should be allocated to marine environment protection, which should match up to the magnitude and development of marine environment protection.
3. **Strengthening technical capacity.** Marine environment protection is of high technical nature, which necessitates science research and international information exchange in relevant area and the continued education of people involved.

5.4.2.3 Strengthening co-operation and co-ordination within the country

Marine environment protection involves many factors, such as governmental agencies at different levels and with different mandates and interests. In order to achieve overall benefit of marine environment protection, co-operation and co-ordination, especially the following measures, are essential:

1. **Co-ordination in policy-making.** In policy-making process, the balance between economic development and marine environment protection should be taken into consideration. Timely communication and mutual understanding between development agencies and environment protection departments should be strengthened.

2. **Carrying out integrated coastal zone management and planning.** All activities in the coastal zone, which may affect marine environment, should be planned and carried out in a co-ordinated way, such as better lay-out of pollutant sources and their treatment facilities, standardised procedure and criteria for information collection, and harmonised norms and standards to control wastes discharge.

5.4.2.4 Strengthening international co-operation

From geographical point of view, oceans and seas are interrelated. Pollution originating or commencing in one part of the ocean may eventually reach and affect other parts of the marine environment. From legal point of view, many marine environment issues are extraterritorial. Marine environment protection, therefore, is bound to be an international issue. Without international co-operation, the marine environment protection targets of one state can not be fully achieved. In this regard, the following measures are important:

1. **Promoting co-operation among the nations in the region.** Political boundaries themselves do not stop pollutants. To prevent transboundary marine pollution, the regional approach has proved to be preferable in many cases. Measures to be taken should include, *inter alia*, information exchange among neighbouring countries, harmonisation of standards concerning pollutants discharge control, early warning system of serious pollution incident, etc..
2. **Ratification of international conventions, treaties and protocols.** Over the past decades, to establish global framework for international co-operation in combating marine pollution, many international conventions, treaties and protocols have been adopted. Some of which have been ratified by China, but the others, including some important ones, have not. Chinese government should consider the ratification of these treaties, such as International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC Convention of 1990) and the International Oil Pollution Compensation Fund Convention.

Since the start of economic reform, China has made remarkable achievements in economic development, in terms of both quantity and scale. Unprecedented material wealth has been created. In the process, however, the excessive consumption of resources and emission of large quantity of pollutants have exerted adverse influence upon ecological balance and environment, which, in turn, have greatly constrained further economic development. Against such background, it is not difficult to reach the conclusion that environment protection including marine environment protection should be one of the cornerstones of the overall and long-term strategy of economic and social development of China. As an integrated part of the efforts to materialise this strategy, China's marine environment legislation has experienced significant development at the same pace as her economic reform and development over the last one and half decades. The continued development of China's overall socio-economic situations is paving the way for further progress in marine environment legislation.

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