行政學碩士 學位論文

Abstract: Study on Chinese Environmental Protection Administration: Focusing on Organizations and policies

중국의 환경행정에 관한 연구 : 조직과 정책을 중심으로

指導敎授 姜 恩 淑

2007년 12월

韓國海洋大學校 大學院

通商行政學科

王 晶

本 論文을 왕정의 行政學碩士 學位論文으로 認准함.

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한국해양대학교 대학원

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Chapter Ⅰ. Introduction

1.1 Research objective

What is the environment? Simply speaking, it is a place where the human beings live. It is also the base of place which supplies the products and natural resource to people. According to the < the law on environment protection of the P. R. C >, it is defined as: the overall of all kinds of natural and artificial factors which can affect the human survival and development. It is including atmosphere, water, sea, land, mineral resource, forest, prairie, wild biology, natural vestige, humanities vestige, nature protection area, scenery scenic spot, city and village and so on. According to the functions, it may be divided into the environment of the living conditions and the ecological environment. The humanity is the product of the environment. Humans must rely on the natural environment to survive and develop. They are also the transformation of the environment. They use and transform the environment for the social production, and then make it to be suited for the human's survival and development more and more.

The environmental pollution is a phenomenon that after using the materials which are harmful to the system of natural entering into the environment, it

interferes and harms the system of nature. Specifically speaking, it is that the deleterious substance or the harmful factors affect the environment and require the action with various essential factors of ecological dignity by the proliferating migration and transformation in the environment, then cause the changes of the ecosystem structure and function, which are harmful to human beings for living and developing (Li Wenhua, 2005). For example, because of chemical propellant burning, the density of the pellet and SO_2 which can be harmful to the persons and other livings' health increases, and meanwhile it will corrode the material and bring the loss to the society. And the discharging of the industrial waste and sanitary sewage will worsen the quality of the water, and endanger the livings in water, then make water lose the original ecology function and using value to society.

Besides giving the ecosystem the direct destruction and influence, the accumulation and migration transforms of pollutant will cause many other environmental effects. It causes the indirect harm more than direct harm to the ecosystem and society. And this indirect effect is also difficult to eliminate. For example, the effects of the greenhouse, acid rain and the O_3 layer destroyed are the kinds of other effects which are caused by the air pollution. This kind of environment effect grown from the environmental pollution has the hysteresis quality. It is usually difficult to realize or expect when it began, but once it happens, it means that the pollution is a quite serious problem.

Certainly, the most direct and easiest result that can be felt by people is

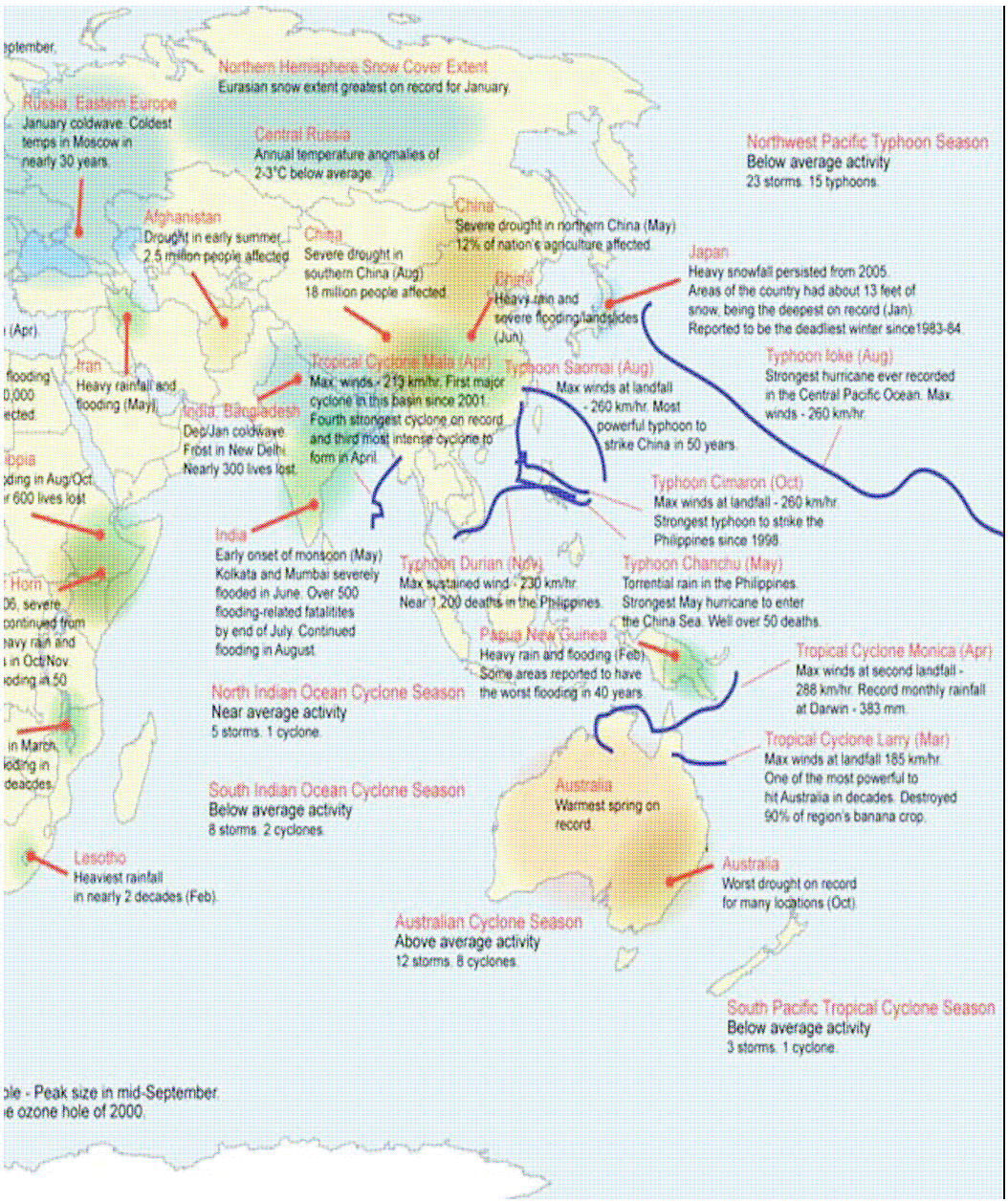
causing decrease in living quality. It can affect human's life, health and the activities. For example, the air pollution causes air dirty and then makes people catch a disease easily water pollution causes tap-water quality decreasing, threatens people's health, and causes the embryo tropremature and so on. The serious pollution event can bring about not only the healthy question but also the social problems. Along with the intensifying pollution and the enhancement of the people's environmental awareness, the conflicts which are caused by the environmental pollution increase year by year.

At present, the environmental pollution problems has appeared in varying level in the global scope. The aspects of global influence are the atmospheric environmental pollution, sea pollution and the urban question, etc. As the globalization of economy and trade is progressing, the environmental problems also have the trend of globalization day by day. The example is that a dangerous waste shift across border often appears in these years. The danger of environmental pollution has caused the attentions of most countries in the world. In some countries, especially the developed countries that have full funds to put into environmental protections, governments have had the effective policies and put it in scientific methods. In some parts, they have got a suitable result in particular in environmental protection.

For example, since 1999 most West Asian countries have made significant progress in phasing out ozone-depleting substances (ODS). The regional Ozone Network has promoted compliance with the control measures.

But it is only a small part of the globe, in many countries the environmental problem is still a critical problem to the government and people, especially to the developing countries. And here is the <2006 ongoing trend> published by the GEO Year Book 2007.

<Figure 1-1> 2006 on going trend



GEO Year Book 2007

The objective of this paper is trying to find the root reasons in the environmental protection administration and discuss a way to solute the

problems.

1.2 Research method and research scopes

This is a description thesis. It expounded the way of the Chinese environmental administration. By the way of reviewing the progress and the loss on this way and analyzing the reasons and situations, try to find a way that could help us improve the environmental protection work in China. And on the base of the description, we will analyze and forecast the environmental protection in future.

The main contains of this paper are the governmental environmental administration which includes the organizations and the governmental policies. It explains the relationship of the governmental administration and the environmental protection situations.

Chapter Ⅱ. Theoretical background

2.1 Chinese environmental situations

China, as the third country in territory in the world, the Chinese environmental situation takes an important role in the world environmental status. Compared with the developed countries in the world, China still has a long way to go on in environmental protection. We can know the Chinese environmental situation is not good by the way of the environmental event these years.

2.1.1 Land pollution in China

Approximately 30%of China's surface area is desert. China's rapid industrialization could cause this area to drastically increase. The Gobi desert in the north currently expands by about 950 square miles per year. The vast plains in northern China used to be regularly flooded by the Yellow river. In the past 50 years, industrial exploitation in the form of dams and other irrigation infrastructure have all but halted the river's natural course, threatening to dry up the entire river valley and convert the plains into a giant dust bowl of unimaginable scale. Recent droughts, defore station and

global warming only serve to bring the region closer to catastrophe.

In 2001, China initiated a "great green wall" project. It is a project to create a 2800 mile "green belt" to hold back the encroaching desert. The first phase of the project, to restore 9 million acres (36,000 km²) of forest, will be completed by 2010 at an estimated cost of $8 Billion. By 2050 the Chinese government believes it can restore most desert field land back to forest. The great green wall project is possibly the largest ecological project in history (Ratliff, 2003). Starting in 2006, the Chinese government expanded protection for forests, banning logging and restricting the size of cities and golf courses to enhance land usage efficiency.

In many cases, local government officials have failed to enforce, or simply ignored environmental edicts made by the central government. In 2007 a barren face of Laoshou Mountain, in Fumin County, near Kunming in the southwestern province of Yunnan, was spray painted green, in order to cover up damage caused by two decades of quarrying.

2.1.2 Water pollution in China

Almost all of the nation's rivers are considered polluted to some degrees, and half of the population lacks access to clean drinking water. Ninety

percent of urban water bodies are severely polluted. China grades its water quality in five levels, from Grade I to Grade V, with Grade V being the most highly polluted. Water scarcity also is an issue; for example, severe water scarcity in Northern China is a serious threat to sustained economic growth and has forced the government to begin implementing a large scale diversion of water from the Yangtze River to northern cities, including Beijing and Tianjin.

An explosion at a petrochemical plant in Jilin City on 13 November 2005 caused a large discharge of nitrobenzene into the Songhua River. Levels of the carcinogen were so high that the entire water supply to Harbin city (pop 3.8M) was cut off for five days between 21 November 2005 and 26 November 2005, though it was only on 23 November that officials admitted that a severe pollution incident was the reason for the cut off (BBC,2005). According to the report of Xin Hua News (Chinese biggest media controlled by government) on Dec.5th2006, there are 46.5% of 700 rivers in China have been polluted, and 90%of city water is polluted badly, and 360 million farmers can not get the clean water to drink. On the research of May 2007, we get a shocked result also. According to the research, indicates in that 26% of seven big water systems (ZhuJing, Changjiang, Huanghe, Huaihai, Haihe, Suliao) has been polluted; seven of Chinese nine lakes water have been the wasted water.

The responsibility for dealing with water is split between several agencies within the government. Water pollution is the responsibility of the environmental authorities, but the water itself is managed by the Ministry of Water Resources. Sewage is dealt with by the Ministry of Construction, but ground water falls within the realm of the Ministry of Land and Resources (China Dialogue, 2007).

2.1.3 Air pollution in China

According to the People's Republic of China's own evaluation, two-thirds of the 338 cities for which air-quality data are available are considered polluted two-thirds of them moderately or severely so. 1/3 of city people have to breath in the polluted air. Respiratory and heart diseases related to air pollution are the leading cause of death in China. Acid rain falls on 30% of the country. China environmental laws are among the strictest in the world, but enforcing these laws has been difficult in China. The World Health Organization has found that about 750,000 people die prematurely each year from respiratory problems in China.

2.1.4 CO_2 emissions and global warming in China

The People's Republic of China is an active participant in the climate change talks and other multilateral environmental negotiations, and claims to take environmental challenges seriously but is pushing for the developed

world to help developing countries to a greater extent. It is a signatory to the Basel Convention governing the transport and disposal of hazardous waste and the Montreal Protocol for the Protection of the Ozone Layer, as well as the Convention on International Trade in Endangered Species and the Kyoto Protocol, although China is not required to reduce its carbon emissions under the terms of the present agreement. On June 19, 2007, the Netherlands Environmental Assessment Agency announced, based on an analysis of fossil fuel consumption (including coal power plants) and cement production data, that China surpassed the United States as the world's largest emitter of carbon dioxide, putting out 6,200 million tons, to America's 5,800 million China now no. 1 in CO_2 emissions; U.S.A in second position, Netherlands Environmental Assessment Agency (2007-06-19).

Because of the water and air pollution, Chinese GDP lost 8%-15%, which did not include the healthy losses. The price people paid are the health. 70%-80% of cancers in Beijing have the relation with environmental pollution. Cancer has been the first killer to people. And further more, because of the reasons such as desertification, sand storm has influenced the people’s living in some regions or cities. Then there are 5 Chinese cities among the most 10 polluted cities in the world.

So we can say that an environmental crisis has been beginning to break out in China. Weather or not the government can solve the crisis will decide the Chinese future, because the environment problem influence people’s living directly. Looking at the present Chinese environmental

situation, we can not say that the government has the appropriate policies to treat this problem. So finding out a right way to improve the Chinese environment is an urgent matter for government and all the people.

2.2 Related Theory

The root of the environmental failure is the system failure. That is market failure. Our environmental system did not encourage the environment. On the contrary, it encouraged the activities of pollution.

2.2.1 Market failure theory

A vocabulary has evolved for designating different types of resources (Elinor Ostrom 1995, 7). "Exclusion" refers to the degree to which access to a resource can be restricted. "Subtractability" deals with whether or not one person's appropriation of a resource reduces the availability of that resource for others. These two properties of a resource, exclusion and subtractability, lead to the generation of a two by two typology of resources, as follows:

<Figure 2-1> A general classification of goods

		Subtractability	
		Low	High
Exclusion	Difficult	Public Goods	Common-pool resources
	Easy	Toll Goods	Private Goods

Source: Elinor Ostrom, Roy Gardner, & James Walker (1997:7)

Resources, access to which is easily controlled, are of two types, "private" goods and "toll" or "club" goods. Accesses to private goods are controlled by the familiar institutions of private property. Access to toll or club goods is limited by the levying of tolls or the existence of membership restrictions. On the other hand, access to two other types of resources cannot easily be denied. These include public goods, sometimes called "free goods," such as air and water, or public information systems, such as emergency radio broadcasts or scenic vistas. Other resources from which access is not easily restricted are called CPRs. These include fish grounds, ground water basins, public parks or commons, etc. The boundary between public goods and CPRs is not fixed. This is due to the other property cross cutting the four types of goods introduced, the property of subtractability. Public goods are considered low in subtractability. One person’s use will not appreciably limit use by another. If one person listens to the emergency broadcast program, another’s use of it most likely is not diminished. A CPR, on the other hand, is by definition high in subtractability, one person’s use limits another’s. On common land, the grass eaten by the animals of herder A is unavailable for the animals of herder B. The system sensitivity between public goods and CPRs exists because a grazing field that is very large, supporting very few herders and grazing animals, has almost no subtractability vis-à-vis each herder. The commons is effectively a public good. It is when the commons is appropriated by many herders and/or many animals that it becomes unequivocally a CPR. Difficulty of exclusion, combined with high subtractability, can lead to the CPR dilemma hard in calls the "tragedy of

the commons." Toll goods or club goods are considered low in subtractability. One person’s use of the club only slightly affects another club member’s access. Private goods are highly subtractable, since by definition what someone privatizes is not there for others (Carpenter, 1998).

Chinese system of natural resources property right began in 80s. Chinese economical system is under the planed economy system. So the law of the natural resources protection is only a law-based administration’s control under the planed economy.

2.2.2 The market failure in China

Nowadays, it is social market economy, so the law is placed in a ridiculous position. There are great weak points in the exclusiveness and transferability of property right.

In Chinese constitutional law, all of the natural resources belongs to the nation. The exploitative parties only have the using right. That leads to exploitation felling for the benefits themselves. The environmental pollutions have a strong externality. The cost that afforded by the polluter is less than the society. So our failure is that we did not make externality interiorize.

And Because of the public ownership and the separation of ownership and using right, the distribution is decided by the administrative organizations. So the economical encouragement of property right lost.

By now on, there is no state-level law about environmental property right. The environment is a res-gentium in China. Everyone could use it freely. Because of the avarice of people, the result of environmental "public tragedy" comes out.

The price in China is such situation that "high price on productions, low price on resources, no price on environment". It is quite unreasonable. The reasons:

a. People can not realize that there are two parts in the price of resources and environment – directly production goods & the external conditions. The second one is usually not reflected in price.

b. Limited in the pollution discharge fee

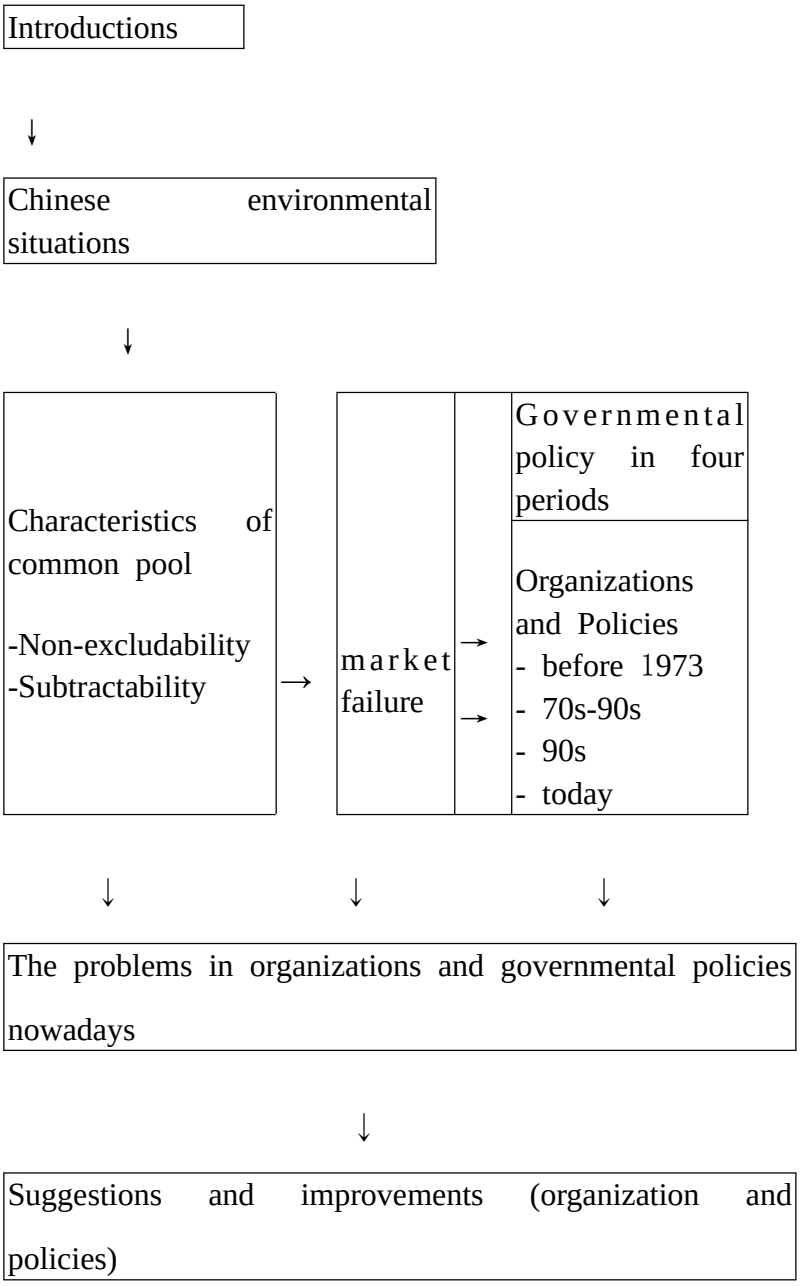
Environment is invaluable. Because there are pollution discharge fee, the environment gets the price. Though the pollution discharge fee makes a great contribution, the limits can not be ignored. A) the pollution discharge fee is offset. So it can not make externality internalize completely. B) Because the pollution discharge fee is on the principle of allowance, 80% of the fee will be given back to the enterprise to control their pollution. But these money is not used to environment. C) Pollution discharge fee neglects the consume influence on the environment.

2.3 Analytical Framework

Because environment has two characteristics：subtractability and non-exclusion. It will lead to a market failure inevitably. And as a socialist country, the public ownership system of socialism intensifies this problem. So we can say that the combination of the environmental characteristics and Chinese socialism system make a difference in Chinese environmental protection work, compared with other countries.

In this paper, we will analysis the way of Chinese environmental protection in different periods. By the way of analyzing the policies and governmental organizations, we are trying to find the problem and the way to solve it according with the situation in present.

<Figure 2-2> Framework of this paper



Chapter Ⅲ. Situation and problems

3.1 Environmental Organizations and Development

3. 1. 1 Some events that influence Chinese environmental protection thought

In March 1972, the fresh fish polluted event took place in Beijing, which is also the first environmental pollution event broke out in new China history. This event caused the government attention immediately. The national Premier Zhou Enlai attached importance on it. Government immediately constituted a group to carry out the investigation on the event.

And then the government got a result that the Guanting reservoir was polluted. The central government organized a leading group with the local government to do the research and control, after 10 years, the reservoir pollution was controlled. It is the first time of carrying on the pollution control by Chinese government in history. It also sounded alarm of environmental pollution to China. It provided the important experience for the later.

Meanwhile, the United Nations decided to hold a conference on human

environment in Stockholm in Sweden. Under the national Premier Zhou Enlai’s instruction, China organized a group more than 40 people to attend the conference. After the conference, they took back many materials according to the environment. Compared with the data given to them, they found the Chinese environmental pollution was quite serious. It had achieved a quite serious degree in the air pollution, water pollution; solid rejected pollution as well as ecological destruction. The State Council held a nationwide environment conference immediately, and then they quest the environmental problem in the conference and ask to pay attention on the environmental problem by not only central government but also the local government.

In August 1973, the State Council held a conference on the nation environmental protection conference for the first time. In the conference, they passed the first Chinese environmental protection document-<the stipulations about environment protection and improvement>. This is the beginning of environmental protection under the Chinese government’s leadership. On September 17th1973, the State Council environmental leading group was officially established. And after that, the environmental structures and institutions were established in every province and autonomous regions successively. < The several stipulations about "industrial three wastes" > was put out united with the State Planning Commission, National Construction Committee and the Stat Council Environmental Protection Leading Group. In 1978, Deng Xiaoping proposed that China should have environmental protection legislation for the first time. In February 1978, the environmental

protection was written into the Chinese constitution by the fifth People's Congress. In September 1979, the first Chinese environmental law-< The law on environment protection of the P. R. C (for trail implementation) > was passed by the fifth People's Congress. It means that Chinese environmental protection was on the way of legal track from that on. In December 1983 and April 1989, the State Council held the second and the third environmental protection meeting separately. And after the United Nations Environment and Development Conference in 1992, <10 Big Measures about Environment and Development> were put out. Then <Chinese Agenda 21 century> and < Chinese environmental protection plan > were formulated. In October 1993, the second national industrial pollution preventing and controlling conference was held. This conference is the standard of a transformation on Chinese industrial pollution preventing and controlling.

3.1.2 The environmental laws in China

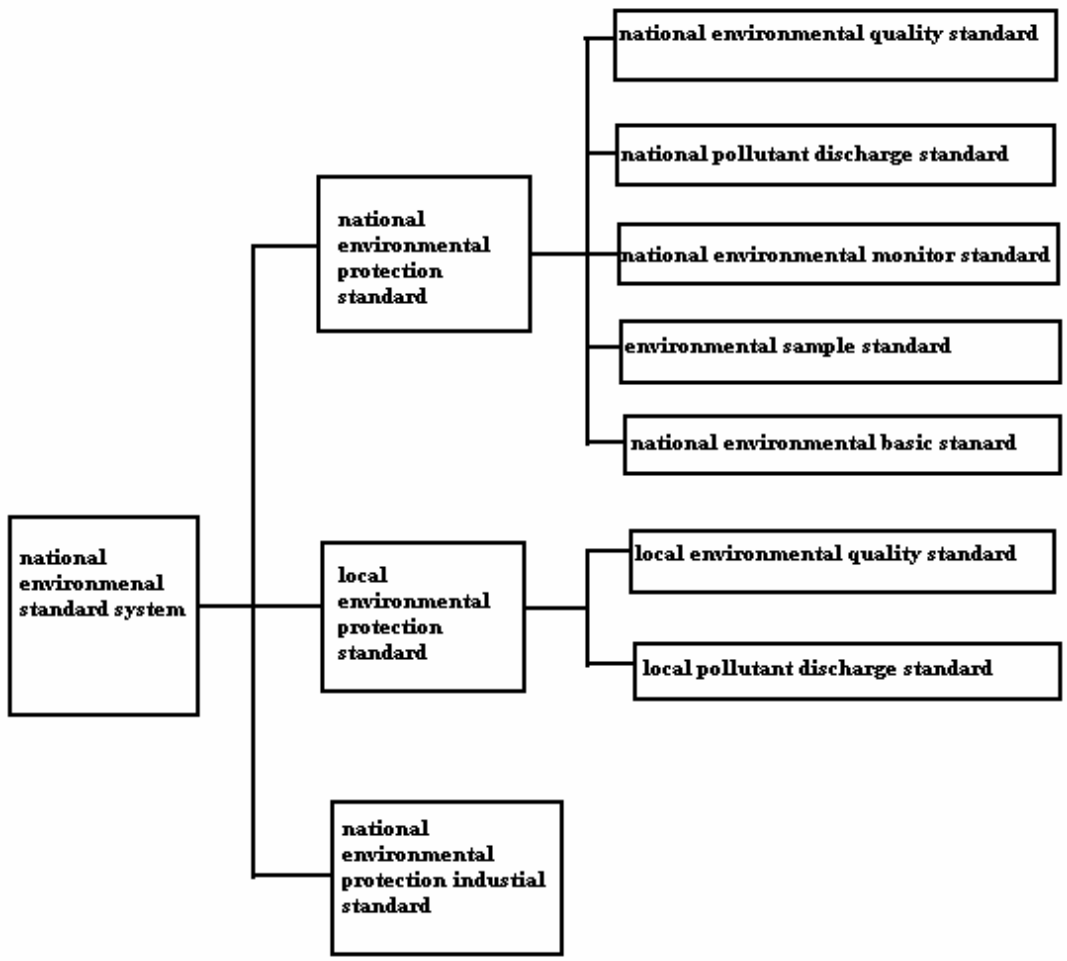
The environmental law's foundation was begun in 1970s. In 1979, the first environmental law-< The law on environment protection of the P. R. C (for trail implementation)> was established, which fixed the fundamental principle, task and policy of Chinese environmental protection. And then some other separate laws and rules were published in the later years. (Such as < The law on forest protection > 1982; < the law on water protection >1984). After 10 years practice, < The law on Environment protection of the P. R. C > was passed in the 11^{th} meeting of the 7^{th} National People's Congress

standing committee in December 26th 1989. And it was officially published with 112 approved votes and 4 abstained votes in the end. This law is made on the base of the constitution 1982 and practice experiences of <The law on environment protection of the P. R. C (for trail implementation)>. There are totally 6 chapters and 47 pieces with contents of general rule, environment surveillance management, protection and improvement environment, preventing and controlling environmental pollution and other environmental damages, legal liability, supplementary articles.

By 20 years efforts, Chinese environmental protection legal system is consummated day by day. Five environmental protection special laws and eight natural resource protection laws had been published. They are: <the law of the marine environment protection>, <the law of the forest pollution prevents and controls >, <Air pollution Preventing and controlling Law>, <the law of Ambient noise Pollution Preventing and controlling>, <the law of Solid Reject Pollution Environment Preventing and controlling>; <Forest-law>, <Prairie Law>, <Fishery Law>, <Mineral resource Law>, <Wild animal Protection law>, <Water and soil Protection law> etc. Also many stipulations, rules and standards were put out. Besides, China joined international environmental protection pledges and terms. The <The law on environment protection of the P. R. C> guaranteed the implement of these international pledges and terms.

And also it has formed a series of environmental system:

<Figure 3-1> The Chinese environmental standard system



Source: Huang Jin, Tang Wanjia (2006)

3.2 Criteria of dividing into four periods

The periods of environmental protection are connected with the Chinese reform indeed. As we know there is Culture Revolution between. The

environmental protection of China began in 1793. Zhou Enlai made a great effort in putting the environmental protection into the governmental work.

China began to reform in 1979. And from 1984to 1991, the focus shifted from how to divide SOE profit to how to free SOE from government. After 1991, State council to promulgate Regulations on Transformation of Management Mechanisms at State-Owned Industrial Enterprise 70%-90%.

In the every period of the economical reform, the environmental protection will be change also, because the reform influenced greatly in the whole society such as the governmental organizations, the laws, etc. So the environmental protection period has its reforming background also.

3.2.1 The period before the year of 1973

China was a typical agricultural country when the P. R. C was founded. There were no real industries at that time. Under natural agricultural society, the population is not large, and there were not so many cities at that time. So there were no obvious problems about environment at that time, especially under the background which China was far behind the other countries in every field. The whole country is critical to build their own industry. The result is that the country put all of their concentration on the industrial development. There were no ideas on environmental protection for most of people. Therefore, the environmental protection is absolutely a strange word to China at that time. But the environment problem started to

exist with the industry development on the land of China.

3.2.2 The period in 1970s-1990s

1. The analysis of organizations

After the Stockholm Conference in 1972, Chinese government began to realize the importance of the environmental protection. It was the beginning of the Chinese environmental protection.

In the early time of this period, the environment work is only to abase and control the individual environmental pollution event. There were no systematize and theoretical systems to manage and control. The environmental group took this work. And when a policy should be made, a national conference was held, and the group only was only in charge of carrying out the policy with the help of locals.

In 1982, State Environmental Protection Bureau was built in the City and Country Construction Department firstly. State Environmental Protection Bureau executed the environmental administrative functions. In 1984, State Environmental Protection Bureau was established in the State Council. Their task is: leading and organizing the national environmental protection work. In 1988, State Environmental Protection Bureau was established as an independent department. After that State Environmental Protection Bureau was built in locals, such as Qingdao Environmental Protection Bureau.

2. The analysis of the policies

In the period of 70s –90s, the main topic on the environmental is "who make the pollution, who are in charge of dealing it." The reasons are:

a. The environmental protection was just at the beginning in China. The relative law was not perfect. There are some loopholes. So it is impossible to predict beforehand.
b. As a manager of the environment, the government had not enough experiences to manage and organize.
c. The focus of government was still economy. The environmental issue was viewed as a auxiliary work.
d. Under a special background of China, all the things and people are viewed as the country property. All the things should be used to support the development of the country. Sometimes the pollution is regarded as the contribution to the industry.

Compared with the time before Stockholm's conference, this period was an advanced time for environmental protection. At least, the people began to have the idea of environmental protection. But the policy was impossible to put into practice in most of time. Because it needs an accumulation in quality and time for the environmental pollution to be broken out. It means that it may be a long time since the pollution happened. When the pollution breaks out, it is difficult to find the party who should take responsibility. Even if we can find them, the party can not take the responsibility. So the

problem will come back to the government. But because of the lack of money, local governments have to put it to a higher government. The central government can not deal directly and efficiently. So the problem becomes worse and worse.

3.2.3 The period in 1990s

1. The Analysis of organizations

In this period, the Chinese environmental protection organization is kept on completed, especially in the locals. As the central governmental environmental authority turn over to local, the local environmental organization construct better and better. The local environment organization was made more completely. And the local environment and protection committee was established by the local people congress in order to carry out environmental protection better.

Since 1996, the State has formulated or revised major laws on environmental protection, such as those on prevention and control of water pollution, marine environment protection, prevention and control of air pollution, as well as evaluation of environmental impact.

The State Council has formulated or revised over 50 administrative regulations to strengthen environmental protection. Relevant departments of

the State Council, local people's congresses and local people's governments have, within the limit of their powers, formulated and promulgated over 660 central and local rules and regulations in order to implement the national laws and administrative regulations on environmental protection.

For three years in a row, the State has launched special environmental protection campaigns to rectify enterprises that have discharged pollutants in violation of the law and to protect people's health.

The campaigns have dealt with over 75,000 environmental law violation cases, and had 16,000 enterprises closed down for having discharged pollutants in violation of the law. More than 10,000 warnings have been issued to environment polluters, obliging them to remedy the problems under government supervision.

In 1998, the Chinese government changed the name of the State Environmental Protection Bureau to the State Environmental Protection Administration (SEPA), and elevated it to the ministerial level. And the SEPA come to maturity in this period. SEPA follows the principle of taking natural ecological conservation and environmental pollution prevention as the main tasks; strengthening supervision on nuclear safety and enhancing environmental enforcement; improving supervision and administration; sticking to people-oriented principles; safeguarding the environmental rights and

interests of the public, and promoting the sustainable development of society, economy and environment. Its major responsibilities are as follows:

1. Formulating general and specific policies, laws and regulations, and administrative rules and regulations; conducting environmental impact assessment entrusted by the State Council on major economic and technical policies, development programs and major economic development plans; formulating national environmental protection programs; organizing the formulation and supervision of pollution prevention plans and ecological conservation plans in key regions and river basins identified by the Central Government; and formulating environmental zoning programs.

2. Formulating and organizing the implementation of laws, rules and regulations on pollution prevention of air, water, soil, noise, solid wastes, toxic chemicals and vehicle emission; and guiding, coordinating and supervising marine environmental protection.

3. Supervising the development and utilization activities of natural resources with impact on natural environment, major eco-environmental construction work and rehabilitation of ecological damages; supervising and inspecting the environmental protection in various kinds of nature reserves, scenic spots and forest parks; supervising and inspecting bio-diversity conservation, wild life and species conservation, wetland environmental protection, and desertification combating; proposing recommendations to the State Council on approving new national nature reserves of various kinds; supervising the management of national nature reserves; and serving as the head organization in charge of biological species resources (including biological

genic resources) management and exotic invasive species management.

4. Guiding and coordinating major environmental problems in local regions, departments and cross-regions and cross river basins; looking into and handling major environmental pollution accidents and ecological damages; coordinating inter-provincial environmental pollution disputes; organizing and coordinating pollution prevention in key national river basins; taking charge of environmental supervision and inspection; organizing national inspection on environmental enforcement.

5. Formulating national standards of environmental quality and pollutant discharge, releasing the standards in due procedures determined by the state; taking charge of filing standards of local environmental protection; reviewing the environmental protection component of urban development master plans; organizing the formulation of national environmental quality reports; releasing national bulletin on environmental status; releasing information on the status of environmental quality in key cities and river basins on a periodic base; and participating in formulating national outline of sustainable development.

6. Formulating the regulatory regime of environmental management and organizing its implementation; approving EIA Reports of the development and construction activities; guiding comprehensive environmental control in both urban and rural areas; taking charge of rural eco-environmental protection; and guiding the establishment of ecological demonstration zones and ecological agriculture across the country.

7. Organizing researches and development, and technical demonstration

projects of environmental protection; administrating environmental management system and environmental label certificating in the entire country; setting up and organizing the implementation of certification regime of qualification for environmental protection; and guiding and promoting the development of environmental industries.

8. Responsible for environmental monitoring, statistics, and information; formulating environmental monitoring system and norms; organizing establishment and management of national environmental monitoring network and national environmental information network; organizing supervision on monitoring of environmental quality and pollution sources across the country; organizing, guiding and coordinating environmental promotion, education, and publishing work; and promoting the participation of the public and NGOs.

9. Drawing up basic national principles on global environmental issues; administrating international cooperation and exchanges on environment; participating in and coordinating important international environmental activities; participating in negotiation of international environmental conventions; acting as focal point of managing, organizing and coordinating the implementation activities of international conventions in China; administrating foreign economic cooperation in the environmental protection system; coordinating and implementing relevant overseas funded projects; handling international affairs of environmental protection entrusted by the State Council and responsible for liaison with international environmental organizations.

10. Responsible for the management of nuclear safety, radiation environment

and radioactive wastes, and drawing up relevant general and specific policies, laws, rules and regulations, and standards; involved in emergency response work of nuclear accidents and radiation environmental accidents; conducting integrated supervision and management on pollution prevention of the safety of nuclear facilities, electromagnetism radiation, nuclear technology application, and the development and utilization of mineral resources with radioactivity; carrying out safety monitoring on the control of nuclear materials and pressure-bearing nuclear facilities.

11. Responsible for the institutional and human resources management of SEPA; organizing the institutional and administrative management reforms in the national system of environmental protection; and taking charge of dual management on leaders and cadres in the environmental protection system.

12. Undertaking other matters entrusted or mandated by the State Council

And SEPA also serves as the State Nuclear Safety Bureau.[1)]

1) http://www.zhb.gov.cn/.

<Table 3-1> Organization of State Environmental Protection Administration

STATE INVIR-ONMENTAL PROTE-CTION ADMI-NISTRATION OF CHINA.	DEPARTMENT	Office
		Department of human resource
		Department of sciences standards
		Department of natural protection
		Department of environment evaluation & management
		Department of international cooperation
		Department of finance
		Department of policy programs
		Department of pollution control
		Department of nuclear safety management
		Environment supervisory administration
		Party committee
	DIRECTLY ADMINSTRATION	Emergency matters treatment administration
		Service central
		Chinese research academy of environmental sciences

There are now 3,226 environmental protection administration departments at different levels all over China, with 167,000 people engaging in environmental administration, monitoring, scientific research, publicity and

education. There are 3,854 environmental supervision and environmental law enforcement organs with more than 50,000 staff members.

2. The analysis of the policies

In this period, the government took the policy of "the responsibility of local leaders". It means that the local leader should take the full responsibility of the environmental protection. If a environmental pollution event was broken out in their place, they should take the first responsibility.

China is vast in territory. There are difference in different places' economy, society culture and natural conditions. So the environmental problem is different. For example, there are difference between city and country, developed and undeveloped area etc. So the environmental problem breaks out with the different district individually no matter what on the quality or on the quantity. It is useless of only having the policy in central government. For example, it is impossible to be dealt with pollution of high density in concentrative industrial areas and partial special pollution by the central government. So it needs that local government has to keep the local society saving and administrating the local environment protection. Furthermore, to deal with the environmental problem they must use the natural resources (pollution) and correspond with the development of the energy (petroleum, coal) in right way. After that an effective and comprehensive policy can be made. But it is difficult to realize in central government, because jurisdictions interweave in the governmental

departments, so it is impossible to realize the local environmental unification, and the problem will not be easy to be resolve. Inconsideration of the flexibility of local administration, the idea of putting the authorities to locals is absolutely right. And the local governmental environmental administrations have decided the solution of environment problem.

Such policy makes the local leaders have the first responsibilities in the activity of environmental protection. It gives a big pressure to the local government. The position of environmental protection gets a promotion in people’s mind. It is the beginning to learn to consider the environment when they are making the decision.

But thanks to the governmental efforts, although the amount of resource consumption and pollutants is increasing greatly, the trend toward aggravated environmental pollution and ecological destruction is slowing down. Environmental pollution control in some river valleys has seen some positive results, the environmental quality of some cities and regions has improved, the amount of pollutant emission of industrial products has declined, and the people's awareness of the importance of environmental protection has enhanced, as it elaborates.

3.2.4 The period of nowadays

1. The analysis of organizations

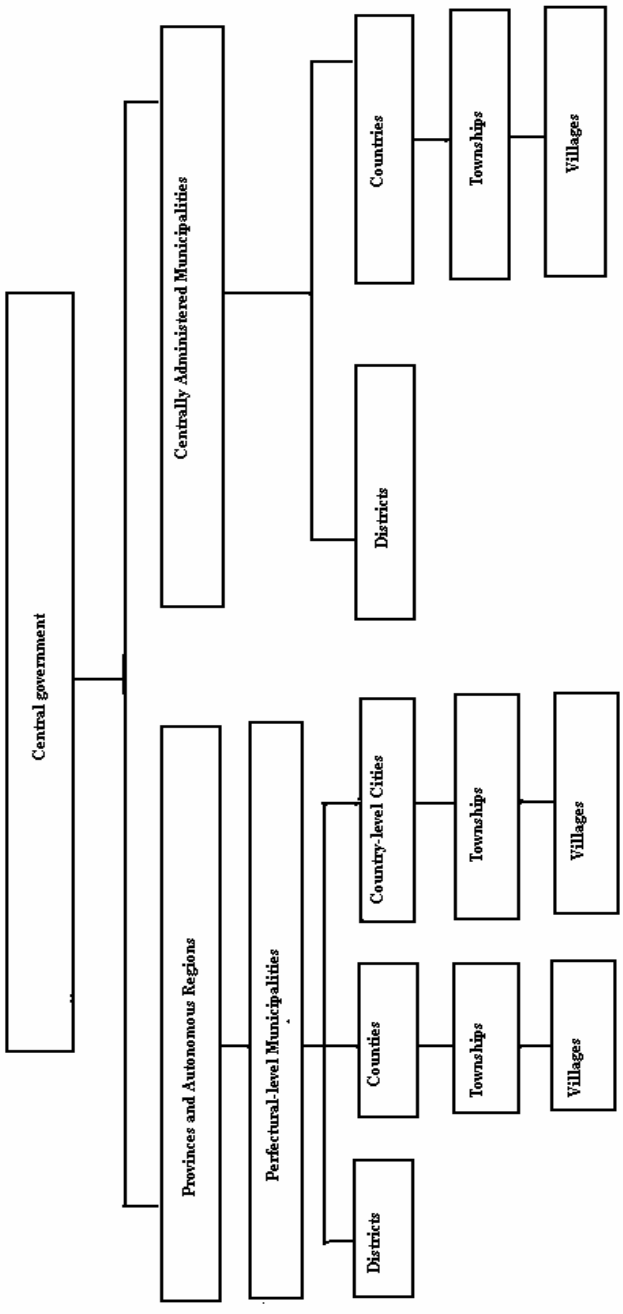
China attaches great importance to and consistently seeks to enhance the support capability of science and technology for environmental protection, actively promotes the industrialization of environmental protection. By the end of 2004, China had 11,623 enterprises, each with an annual sales income of more than 2 million Yuan (250,000 U. S. dollars), engaged in environmental protection businesses, employing a total of 1.595 million workers.

Chinese government has endeavored to boost public participation in environmental protection. There are now more than 1,000 non-governmental environmental organizations in China.

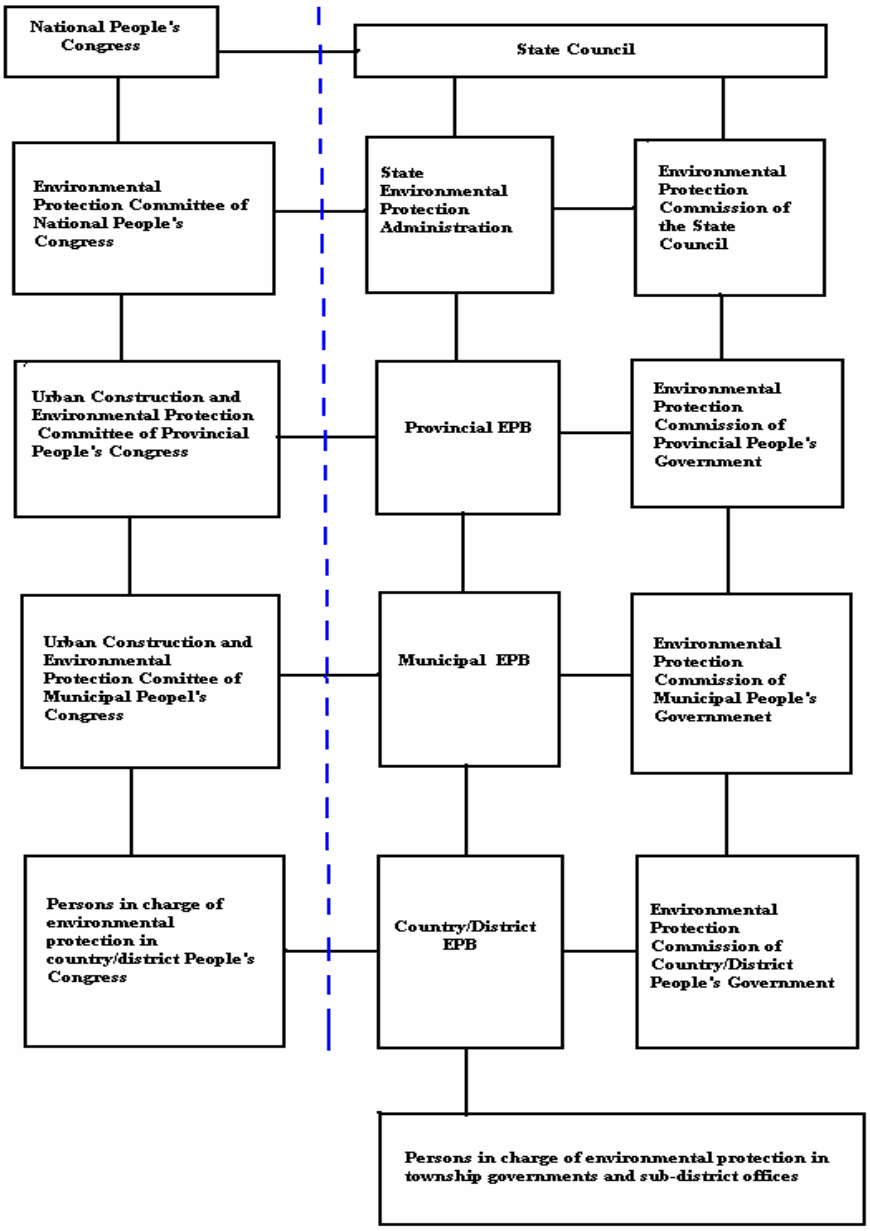
So far, China has acceded to more than 50 international conventions on environmental protection, and has been active in performing the obligations stipulated in these conventions, which include the United Nations Framework Convention on Climate Change and its Kyoto Protocol, the Montreal Protocol on Substances that Deplete the Ozone Layer and the Convention on Biological Diversity.

Here as follow is the layers of the Chinese government administration and the layers of the environmental organizations.(Fig. 3.2; Fig. 3.3)

<Figure 3-2> Layers of Chinese Government Administration



<Figure 3-3> Layers of Chinese Environmental Governmental Organization



layers of Chinese Environmental Governmental Organization

2. The analysis of the policies

The conflict between environment and development is becoming ever more prominent. Relative shortage of resources, a fragile ecological environment and insufficient environmental capacity are becoming critical problems hindering China's development.

Statistics show that the amount of industrial waste water, oxygen for industrial chemicals, industrial sulfur dioxide, industrial smoke and industrial dust discharged in generating one unit of GDP in China in 2004 dropped by 58 percent, 72 percent, 42percent, 55 percent and 39 percent, respectively, from 1995. Energy consumption per 10,000 Yuan (1,250 U. S. dollar)-worth of GDP in 2004 declined by 45 percent from 1990.

Compared with 1996, in 2005 the proportion of cities with air quality reaching Grade II of the state standard increased by 31 percentage points, while that of cities with air quality lower than Grade III decreased by 39 percentage points.

In recent years, China has completed more than 800,000 rural drinking water projects, solving difficulties and insecurity in this regard for 67 million rural residents.

The eco-environment in some parts of China has begun to improve after a long period of unswerving efforts.

According to statistics, the total newly afforested area has reached over 6.67 million hectares every year since 2002. At present, the national forest acreage is 175 million hectares, therefore the forest cover 18.21 percent.

By the end of 2005, there were 2,349 nature reserves of various kinds and levels in China, covering 1.5 million square km and taking up about 15 percent of the country's land territory, the paper says.

The last decade has seen the largest increase ever in China's investment in its environmental protection. A pluralistic financing system based on government support has taken initial shape of efforts after years.

But the environmental pollution is becoming serious day by day. The discharge of major pollutants has surpassed the sustaining capacity of the

environment. Water, land and soil pollution is serious, and pollution caused by solid wastes, motor vehicle emission and not easily degradable organic matter is increasing. The Chinese government has attached great importance to environmental protection and set it as a basic national policy and taken sustainable development as an important strategy. The present policy can not prevent the pollution effectively. So government decided to make some great changes on the environmental policy in order to deal with this environmental crisis. Chinese government wants to take Green GDP policy in China.

This policy was proposed in the 10th 2004, and passed in the 11th 2004. And it began in July 2005. In 2006, Chinese government has put several big green GDP projects to the whole country. And also, it will be an important record to all the local government officers. In 2005, Chinese government pointed 10 areas (provinces & cities) as experimental unit. These places were: Beijing, Tianjin, Hebei, Liaoning, Zhejiang, Anhui, Guangdong, Hunan, Chongqing and Sichuan.

And the plan of Chinese Green GDP policy: Compared with the year of 2005, by the end of 2010, the unit of GDP energy cost should be declined 20%. That means it should decline 4% every year in 2006-2010. Many local government leaders and state-owned company had singed the contract of green GDP. If they can not decline their cost, they have to leave their positions.

3.3 The main problems in environmental administration

Since the late 1970s, China's economy has developed rapidly and continuously. During the process, many environmental problems that have haunted developed countries in different phases of their 100-year-long industrialization have occurred in China all at the same time.

3.3.1 Government failures

The failure on government environmental system

The main expression: a) attaches the importance to pollution cure, but despises the natural protection. The reason is that the environmental pollution is happened in our daily life. But the natural protection seems far away from us. b) Attach the importance on the pollution source controlling, but despise on the region controlling. It neglected the relations of natural. c) Attach the importance on the consistency, but despise on the quantity. d) Attaché importance on the terminal control, but despise on the entiral control.

3.3.2 Organization problems

After 20 years’development, Chinese environment management has formed a system to supervise the environmental protection and make decision in departments. The main bodies of the system are various level governments.

In addition to the relative enterprise and administrative departments, they formed the system together. But there are problems in the organizations as follow:

1. Not suitable organizations

The organizations are not suitable. The environmental protection work involves many social economy problems, such as the national economical structure and the reasonable layout of social productive forces. It also involves in the scientific disposition of the resources. They should coordinate with each other indeed. The environmental organization should be in a high position with a powerful authority for this reason. When an important social or economical decision will be made, the environmental department will take part in as an important part to make the decision. Then the right of the management and supervision of environmental protection could be come out. But the environmental organization is not constructed like that in fact. In most of time, they are less powerful than other organizations.

And furthermore, the subordination relationship is complex. It keeps the environmental management all-in-one in some place. So it will lead complexity in the real administration.

2. Configuration is not in set

As the organization is not suit for the request of environment. There are

problems in personnel organization. The employees in the first line are not enough. So it is quite difficult to get the information promptly and exactly. Also it lead the enforcement of the environmental law can not be put out in some place. But in the organization reform it needs to cut down the number of the employees in generally. The number of the environmental official is a lot in the organizations who only do some office work. It is not balanced in the first-lined and the organization. So the composition of the environmental organization is disordered. The human resource is not optimal allocation. There are administrative, operative and temporarily employees work together.

3. Lack of funds

With a history of over 20 years, Chinese environmental protection industry develops along with the environmental protection course. In the 1980s, the environmental pollution grew worse under the rapid growth of national economy, so measures were taken to control the pollution, and then environmental protection industry experienced a further development. In the 1990s, Environmental issues became more and more serious, therefore, relevant laws and regulations were improved and so were the environment standards. In particular, the environmental protection industry achieved a great progress during the 9th Five-Year Plan Chinese Five-Years Plan[2)]

2) It began from 1953. It is a main direction of developmental goals in the coming 5 years of China. The 1st Five-Year Plan: 1953-1958; The 2nd Five-Year Plan: 1958-1962; The 3rd Five-Year Plan: 1966-1970; The 4th Five-Year Plan: 1971-1975; The 6th Five-Year Plan: 1976-1980; The 7th Five-Year Plan: 1981-1985; The 8th Five-Year Plan:1986-1990; The 9th Five-Year Plan: 1991-1995. period

The government attaches increasing importance to environmental protection: During the 6th Five-Year Plan period, Chinese government invested RMB 15 billion in environmental protection, accounting for 0.5% of GDP and succeeding investments until the 9th Five-Year Plan period are respectively RMB 55billion, accounting for 0.67%, RMB 80 billion, accounting for over 0.8% and RMB 360 billion, accounting for 0.93%. During the 11th Five-Year Plan period, China will continue to enlarge the investment in pollution control and construction of ecological environment, the total value will reach RMB 1400 billion, accounting for 1.23% of GDP, up 0.1% over the 10th Five-Year Plan period. In addition, RMB 33.6 billion will be put into the operation of such 8 important projects as hazardous waste and medical waste treatment, urban sewage treatment, urban garbage treatment and denuclearization of coal-fired power plant.

At present, sewage treatment rate is only 45.6%, and more than half of sewage has not been dealt with in China. The objective in 11th Five-Year Plan period is that sewage treatment rate in all cities must exceed 60%. Moreover, for such key cities as capital cities and scenery tourist cities, the rate should exceed 70%. China plans to double its capability of urban sewage disposal in the following five years, which means a potential business opportunity of RMB 300 billion.

By the end of 2004, over 12,000 participants reached annual revenue more than RMB 2 million and nearly 1.595 million staff involved in this industry, the total industrial annual revenue reached RMB 457.21 billion, realizing a

profit of RMB 39.39 billion. During the 11th Five-Year Plan period, the annual average increase rate for environmental protection industry is estimated to be about 15%; and annual production value will reach RMB 880 billion, in which comprehensive resource utilization accounts for RMB 660 billion, Environmental protection equipments accounts for RMB 120 billion, and environmental services accounts for RMB 100 billion.

With the rapid development of national economy, environmental protection has caught more and more attention. Undoubtedly, environmental protection industry in China, which is both technical guarantee and material base against environmental pollution, has still enormous market potential.

The task and work increased and the institution adjusted, the fund did not increase even it reduced. In most of locals, the funds of environmental administration are dependent on the charges for disposing pollutants. As lack of money, they are more difficult to exercise their power.

4. Legal system are not perfect

There are not corresponding laws about organization for nation and local environmental organization. And the law for stipulating the operation and procedure of environmental organization is not established also. So there were no enough laws to go by on the establishment of environmental organizations. The environmental protection organization is not steady. What should be managed? And how to manage? There are no laws to guide for

the administrators.

5. There are many overlaps between responsibility and right.

The environmental administration system take managing mode of uniting supervise and division of work. But how reflect this principle in real activities? How to reflect it in the distinction of the responsibility and right? In a world, it means that there are not rules to fix which organization is more powerful. So the real management is lack of operations. There are no laws or rules on the cooperation and coordination in the different environmental organizations. The phenomenon of repeated management and passing the buck often appears.

3.3.3 Policy problems

1. The weak point of local government takes first responsibility

Because environmental problems usually need a long time from the begging to its breaking out. This time is longer than the terms of local leader, so letting them to take the responsibility cannot be a fact in real world. Compared with other factors (economy, benefit), they would like better to choose the increase of the GDP.

2. The weak points of GDP

The improvement of the economy is usually being viewed as the key point of the record of local government. And the economical standard is GDP. If GDP increases fast, the local leader will be easier to get promotions. So when there are contradiction between environment and economy, the government will choose economy without any double thought, though the policy is against the environmental laws. That means the environment is a contribution to the GDP increase.

Between 1996 and 2004, China's investment into environmental pollution control reached 952.27 billion yuan (119 billions U.S. dollars), amounting to one percent of that period's GDP. In 2006, expenditure on environmental protection has been formally itemized in the State's financial budget. But it is not enough because the cost of environment increased faster than the fund increased. And the reason is that the GDP standard.

3.3.4 The root reasons of these problems:

a. The traditional idea of "abasement and control after pollution".

This kind of idea emphasizes that increasing economic is the basis to changing the situation forward. It is the way of bringing out the social goals, basic material to improve people’s life and meet social demands. They think that "abasement and control after pollution" is a kind of objective law of development. And this kind of idea is still in most of people in China.

b. The beginning of environmental protection is too late to have enough experiences. The problem which is not resolved in old organization system will be bringing into the new system again

c. Positive organization reform asks for reducing the employees in general.

d. The communication with foreign countries is not enough.

Although the environmental managements are various in different countries, there are still some same points that can share together. Strengthening the communication on environmental protection will be benefit for China.

Chapter Ⅳ. Improvements

4.1 Improvements in Organizations

Complete the laws: Continues to strengthen the legislation. Try best to let the administration have law to depend on.

Complete the organizations: Improve the position of the environmental organization. Make the environmental organizations have the real power in the real process of the decision-making.

Make division clearly: Make the division clearly in different environmental organizations, so that it enhances the efficiency.

Coordinated central and local relations: the policy should be put out clearly in central government. And the locals should get more authorities in environmental protection.

Encourage social environmental protection associations to develop. Then it is good for the environmental supervision by the social.

4.2 The Changes on the policies (Green GDP policy)

Efforts to control China's pollution problem have become a top priority of the Chinese leadership. In March 1998, the State Environmental Protection Administration (SEPA) was officially upgraded to a ministry-level agency, reflecting the growing importance the P.R.C Government places on environmental protection. Beginning in 2006 the government greatly expanded expenses into environmental protection and a series of new laws have been passed.

Enforcement of these laws is also being expanded. The P. R. C has strengthened its environmental legislation and made some progress in stemming environmental deterioration. During the 11th 5-Year Plan (2006-2010), the P. R. C plans to reduce total emissions by 10% and rising China's energy efficiency up to 20%. Beijing in particular is investing heavily in pollution control as part of its campaign to host a successful Olympiad in 2008 (China Daily, 2007). Some cities have seen improvement in air quality in recent years. In the first half of 2007, China's total energy consumption per unit of output improved 2.8% and China's sulfur dioxode emissions fell by 0.6%, showing that these new measures have the potential to slow down environmental deterioration.

Since 2002, the number of complaints to the environmental authorities has increased by 30% every year, reaching 600,000 in 2004; while the number of mass protests caused by environmental issues has grown by 29% every year.

The Xinhua News Agency has quoted an environmental official, Wang Jinnan, as saying that more than 410,000 Chinese die as a result of pollution each year. The Financial Times said a World Bank report, entitled Cost of Pollution in China found up to 760,000 people die prematurely each year in China because of air and water pollution. High levels of air pollution in China's cities leads to 350,000-400,000 premature deaths, it said. Another 300,000 die because of poor-quality air indoors. The newspaper article, quoting World Bank advisers and Chinese officials, also said research showing that there are 60,000 premature deaths each year because of poor-quality water(BBC, 2007).

The Chinese government has placed a greater concern on environmental issues since the early 21st century. In 2004, the central government instituted the Green Gross Domestic Product project, in order to determine the true gross domestic product, adjusted to compensate for negative environmental effects. The results were so much worse than projected that the program was suspended entirely in 2007. In 2005, the eleventh five-year plan contained special emphasis on the nation's environmental degradation. In his

annual address in 2007, premier Wen Jiabao made 48 references to "environment," "pollution," or "environmental protection."(Kahn. Jopseph, Yardley. Jim, 2007) In addition, the Chinese government attempted to hold national "No Car Days" throughout nearly 100 cities, including Beijing, in which cars would be banned on central roads. However, it was largely ignored. (BBC, 2007)

4.2.1 The Introduction of Green GDP Policy

In order to solute the big problem of environment. Chinese have decided to make an environmental reform, which is Green GDP policy.

What is Green GDP? Green Gross Domestic Product (Green GDP) is an index of economic growth with the environmental consequences of that growth factored in. it is an adjustment of traditional GDP, deducting resource and environmental costs in economic activities. (Xue Liqun, Guo Zhijun, 2007)

It provides us with another perspective on GDP, and one that can improve environmental protection and national resource utilization. Second, sustainable development is the emphasis of Green GDP, and this involves not only our generation, but also all future generations.

Green GDP = GDP - the costs of natural resource consumption - the costs of environmental depletion

In practice, a green GDP accounting method usually includes five natural resource consumption costs, including arable land, mineral resources, forest, water and fishery resources, and two environmental depletion costs, environmental pollution and ecological degradation.

In the light of the overheated state of the economy since 2003, green GDP is also considered to be a way of controlling local officials'economic activities. The green GDP concept is also in line with the essential political objective of using the "scientific development" model to build a "harmonious society". Therefore, as one observer has pointed out, the combination of social trends, macroeconomic overheating and political factors has created the conditions under which green GDP has become fashionable.

During the past 20 years the countries whose economic growth rate is fastest in the world, and （as a percentage of GDP ears, China has been one of economic growth rate is the whose domestic saving rate ） and domestic investment rate （as a percentage of GDP） are the highest. According to the statistics of World Bank （2000） the average GDP growth rates of 1980s and 1990s in China are respectively 10.1% and 10.7%, ranking the second among the 206 countries and regions in the

world （only second to Botswana, a natural abundant African Country）, and the first. In 1999, the domestic saving rate and investment rate in China were respectively 42% and 40%, listed top in the world, 20% higher than the average world level at that time. Meanwhile, however, according to the just published World Bank Database （2002, 2003）, the cost of natural capital in China is also shockingly high. To a great extent, it counteracts the nominal domestic saving rate and investment rate, cutting down at least 20% of the genuine domestic savings rate in 1985, and 4.5% up to 1998, and reversed to 6.3 % by 2001

The NBS and SEPA jointly released the Green GDP accounting for 2004 September .There were three headline conclusions to the NBS-SEPA report. Firstly, China emitted 511.8 billion Yuan (US$64 billion) worth of pollution in 2004, equivalent to 3.1% of GDP. Secondly, the estimated clean-up cost for this pollution was calculated at 287.4 billion Yuan (US$36 billion), 1.8% of GDP –around three times more than the actual money spent (100.5 billion Yuan, or US$13 billion). Thirdly, if the country used current technology and today's standards to solve this pollution at the source, it would need a one-off investment of 1,080 billion (US$135 billion), 6.8% of GDP. China's 11thFive Year Plan, which began this year, calls for 1.4 trillion Yuan (US$175 billion) to be spent on environmental clean up – 280 billion Yuan a year, a figure similar to the 2004 clean-up cost. But it still looks like NBS and SEPA are positioning this report as a call for a much larger investment. (China Dialogue, 2006)

4.2.2 The difficulties in GGDP

1. The difficulty in calculating

China is gradually developing a Green GDP statistical system with Chinese characteristics. However, there are some obstacles. For instance, how do we judge whether a factory discharges sewage in accordance with the regulation? Can we strictly enforce the regulation when we detect a violator? Issues like these can be resolved with relative ease. What remains difficult is calculating resource and environmental costs. Ecological or health damage caused by industrial pollution may take years to appear. It is impossible to pinpoint the year in which there are no environmental costs incurred as a result of pollution. There are situations in which an enterprise's pollution does no harm locally, but damages more distant areas. Pollution may be aggravated or ameliorated by natural influences such as wind or rain.

Indeterminate factors such as these make the calculation of Green GDP difficult, if not impossible. Yet we must quantify these factors accurately as possible as to make the Green GDP system work.

2. The difficulty from the local government

During the two-year period of research leading up to the publication of the "China Green National Accounting Study Report 2004", several provinces were extremely reluctant to cooperate with SEPA to carry out the work, or

employed various ‘strategies’ to make the green GDP index factually meaningless.

Because many local governments usually lay down the environment to improve economy, the Green GDP project can stop these activities effectively, and they can not contribute environment to their own political achievement, the easy way of getting the local leader to take part in the improvement of environment was interdiction. That is why many local governments objected this project, but it seems that the central government has a strong decision power to put this policy out. So it is the real hot issue in China now.

4.2.3 How to deal with the difficulties

We need to define our "family property": that is, the available pollution capacity in our air and water. As long as discharge of pollutants does not exceed this capacity, there will be no environmental degradation. Once we know this capacity, we can calculate the maximum permissible pollutant discharge, which would serve as the basis for government regulation. Then we need to put a price tag on resources and the environment by clarifying the ownership of property rights. For example, after defining property rights to land, forest, or water, it will have a specific value through lease or trade. The government may then slice the maximum permissible discharge into a certain number of pieces, that is, rights to discharge pollutants. These rights could be sold, auctioned or otherwise allotted. A market for pollution

discharge rights may be established so that these rights could be traded legally. The market, in turn, will determine the price of the environment. Clarifying ownership of property rights is closely linked to the marketization of the economy. This means that we could expect our GDP to become greener and greener as improvements to the economic system continue and the resource and environment market are built. It can be useful to study other countries' experiences in implementing Green GDP programs. Norway has been calculating the costs of resources and environment since 1978. Resources and environmental pollution included in its calculations are mainly mineral, biological, fluid (water power), land, environmental resources and air pollution, and two water pollutants (nitrogen and phosphorous). A comprehensive statistical system has been established that includes energy, existing fishes and forests, air emissions, wastewater (mainly domestic sewage and polluted water from farming), recycling and environmental expenditure. This lays a solid foundation for a Green GDP statistical system. Now let's look at a developing country. Mexico began its GDP program in 1990. Its calculation covers all types of land resources, water, air, soil, forests and oil. The indices and data obtained on the amount of these natural resources and changes that take place in them are then transformed into indices in terms of currency.

Chapter Ⅴ. Conclusion

The world is concerned about the environment. China has both vast natural resources and a burgeoning economy; with the highly commendable commitment of the central government to the environment and the opportunity to host a "Green" Olympics.

The Earth is the only home we have, the single planet that supports human life. Yet we are failing to protect our home. We are overusing the natural resources that people and all living creatures depend on for survival: clean water, fresh air, food, medicines, raw materials, and other gifts of nature known as ecosystem services. Conservationists and scientists are well aware of the urgency. We see the destruction of biological diversity, air and water pollution, and depletion of resources on land and in the oceans.

However, the depletion of our environment is not only a conservation crisis but also an economic one, as critical ecosystem services become increasingly expensive to replace.

The impacts will be profound; our children and future generations will have far fewer options to create the kind of life style we wish for them.

More people will share fewer resources: in the next 50 years, the Earth's population is expected to double to between 10 and 12 billion. China, especially, faces a tremendous challenge due to its rapid growth and expanding economy. By the year 2030, it is estimated that China's energy demands will quadruple. Where will the energy come from? If it comes from the traditional burning of coal, oil and gas, what will the pollution impact be the impact on people's lungs, on public health, and on global warming? How will we afford to replace the natural resources we exhaust?

We must build and support people's efforts in many countries to find their own solutions for conserving natural resources and protecting ecosystems. Every country that is blessed with natural wealth can be easily damaged by exploitation of natural resources without strict and thoughtful controls.

Finding solutions for conserving natural resources is especially important for China. China is the headwaters of the world, with many of the great rivers of Asia, i. e. the Yangtze, the Yarlung Tsangpo, which flows into India as the Brahmaputra, the Lancang or the Mekong as it enters Southeast Asia, and the Nujiang, called the Salween in Myanmar and Thailand. Forty-seven per cent of the world's population lives in the area drained by these rivers.

We must develop a strategy to link what happens in coastal China with the health of the forests and rivers in the west, and conserve China's biologically valuable lands and waters. They are these Western headwaters and the ecosystems that surround them that provide the natural filter for

China's rivers the lifeblood of the country.

China can allow its resources to be plundered by outsiders, or it can establish standards for sustainable manufacturing and energy efficiency, creating a ripple effect.

No nation is an island; we are all connected. China needs resources from the rest of the world just as its resources are required for the use of others. The way China extracts and uses its resources and thus demands that others extract and use their resources will have a huge effect on international economies. China can prove that there are better ways of doing business.

We must make knowledge available to the public and create leadership training so that China's emerging leaders will be familiar with options for government policies to protect the environment.

Conservation success must be specific, such as new protected areas in the high biodiversity regions of the west, and in key ecological communities along the coast.

China can show the world the way by illustrating how we fish sustainable in the oceans, how we log in the forests, how we manufacture our material goods, and how we set a high standard to eliminate waste, pollution, and other threats to the Earth.

One strategy is to engage corporations in China so that as they grow their businesses, they carefully assess their impacts on natural resources and determine how they can help sustain and protect China's natural wealth.

Another extremely important strategy is to support the local and national governments in developing the adequate policies to craft solutions that will endure for the long term.

China should be able to improve energy and water efficiency, reduce resource waste, find better ways to develop fish farming, and other innovations. It is for China's leaders and people to find ways to take care of the landscape, the forests, the air, the water, and the soil.

The greatest gift China can offer to the world is to make use of the mighty engines of its enormous and rapid growth to steer the world towards the protection of the Earth.

Peace, prosperity, social stability, and public health are all directly linked to a healthy environment. People must understand that poisoned air not only hurts our lungs, but also can eventually kill us. Cutting down forests causes erosion that result in terrible landslides and deadly floods. Destroying coral reefs and mangrove forests for coastal development and shrimp farms removes natural defenses against nature's fury, such as floods and tsunami. People must understand that eating wildlife can cause deadly diseases such as SARS.

All nations must understand that their future is in jeopardy. We must help the public realize the impact of environmental destruction in a way that resonates in the lives of people worldwide.

China has decided to insist on the GGDP policy, though there will be a lot of difficulties. And in the 11th Five-Year Program for Economic and Social Development (2006-2010), China has clearly set forth its main goals for environmental protection for the next five years: by 2010, while the national economy will maintain a relatively stable and fast growth, the environmental quality of key regions and cities will be improved, and the trend toward ecological deterioration will be brought under control.

The 11th Five-Year Program also requires energy consumption per unit of GDP to be declined by 20 percent, compared with the end of the 10th Five-Year Plan period. The total amount of major pollutants discharged will be reduced by ten percent, and forest coverage will be raised from 18.2 percent to 20 percent. (Xin Hua, 2006)

China is a big, responsible developing country. Solving China's environmental problems is in keeping with China's development goals. It will contribute to the wellbeing of the 1.3 billion Chinese people, and it is also an important manifestation of the shared interest of mankind.

The Chinese government and the Chinese people will join all other governments and peoples in the world in protecting the Earth-our beautiful home.

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國 文 抄 錄

韓國海洋大學校 大學院

通商行政學科

王 晶

현재 세계 각 분야에서 환경오염문제가 발생되고 있다. 환경오염문제는 개발 과정 중 발생하는 가장 큰 문제가 되고 있으며, 주로 대기오염, 해양오염, 폐기물오염 등으로 분류하여 접근한다.

전 세계에서 3번째로 넓은 영토를 가지며, 가장 많은 인구가 살고 있는 중국의 환경오염문제는 지구환경에 중요한 영향을 미친다. 중국경제의 급속한 발전에 따라 중국의 환경보호 문제가 심각히 대두되고 있다. 그러나 선진국 수준과 비교하여 중국의 환경문제는 그 길이 아직 멀다할 수 있다.

본 논문은 주로 중국정부의 행정조직과 쟁책관리 양 방면으로 환경보호 정책을 살펴보고, 역사적 측면에서의 분석을 통하여 현재 중국의 환경문제가 발생하는 원인을 탐색한다. 그리고 환경정책, 환경행정조직과 환경보호 간의 관계를 설명하고 환경문제가 발생한 근원을 살펴봄으로서 그 해결방법을 찾는다.

본 논문은 중국 환경문제해결을 위하여 미래의 정책대안으로 Green GDP 개념을 제시한다. 현재의 중국정부는 GDP를 기준으로 경제성장과

지방정부의 재정능력을 측정하기 때문에 각 지방정부가 GDP의 성장을 추구하는 과정에서 환경오염과 자원낭비 현상은 매우 심각한 문제가 되고 있다. 반면에 Green GDP는 GDP에서 환경파괴로 인한 비용과 자원소모를 제외하였기 때문에 환경오염의 문제를 보다 효율적으로 개선 할 수 있다. 그러나 Green GDP는 도입 및 시행 과정에서 어려움을 겪고 있다. 중국정부의 GGDP추정을 위한 통계치 작성문제에 대한 저항 문제가 가장 크다. 본 논문에서는 나타날 가능성이 있는 문제 및 그 해결방법을 탐색함으로써 결론을 맺는다.

현재의 중국정부는 Green GDP 정책을 추구하고 있다. 이 정책은 중국 환경오염문제를 보다 효율적으로 해결 할 수 있는 대안이 될 수 있다. 중국정부는 환경문제를 심각하게 생각하고 있다. 지방정부의 환경오염문제에 대한 인식과 환경오염문제 해결을 위한 투입이 부족한 상황에서, 중앙정부는 계속적으로 거액의 재원을 투입하며 홍보하고 있다. 이를 통해 국민과 지방정부의 환경오염에 대한 인식을 제고시키고 있다. 이러한 중국정부의 환경보호정책이 성공하면 중국은 각 분야에서 엄청난 진보를 이룰 수 있다.