Urban Management Strategies for Present Environmental Problems in China

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Abstract. This paper introduces the current situation of environmental pollution problems in China, and summarizes the causes of environmental problems by analyzing the causes of extreme bad weather phenomena in developed areas and their harm to social and public environmental health. Through exploring the perspectives of different interest groups, governments, enterprises and the public, it could be found out that there are deep incentives for environmental problems in local economic development. At last, the responsibilities of multi-interest groups are discussed in the process of social development, and the concrete measures to be taken by the Chinese government in the process of urban development and management could be pointed out.

1. Introduction

Governments have a solemn responsibility to protect and improve the environment of modern people. Governments should strengthen the capacity and role of existing environmental management institutions. (United Nations declaration of the human environment, 1972)

Sustainable development is the only correct choice for human, and environmental protection is the source of sustainable development. The current situation of environmental pollution and ecological problems in China are very serious, and the government bears more and more important responsibilities for environmental protection. Lots of environmental problems in the industrialization process in these developed countries have been highlighted in China currently, such as global warming, acid rain pollution, ozone layer destruction and depletion, land desertification, marine resources destruction and pollution, organic pollution. It is imminent to play the role of effects and functions of environmental administration in multi-level and multi-angle, and it is urgent to use economic, legal and administrative means actively to promote environmental management.

2. Present Situation of Urban Environmental Pollution

In the past decades, the economic development in China has followed the way of ‘pollution first, treatment later’ as the western developed countries, which has paid a huge environmental cost. The contradiction between economy and environment has become increasingly prominent. In recent years, the state and the public have paid more and more attention to environmental issues, and invested more and more in environmental protection. A lot of efforts in environmental management have been made to achieve phased results. However, long-term accumulated environmental problems have not been
completely solved yet, new problems are continue happening steadily ceaselessly. Environmental situation is still grim and the task of pollution control is still arduous. Since the reform and opening up, great achievements have been made in China's economic and social development, and people's living standards have been continuously improved. However, with the rapid economic growth, environmental pollution and ecological damage are becoming increasingly serious.

2.1. Air pollution
After the mid-1960s, with China's industrial modernization and the increase cost of civil coal, the quality of air hygiene began to decline, which cause the attention and research in health departments. It is found that coal accounts for 70% of the energy structure in China, total suspended particulate (T) matter and the daily average concentration of CO in winter is generally over the standard. Meanwhile, the concentration of NO2 is low, that is typical coal-burning pollution.

After the 1980s, with the rapid development of industry and transportation, air pollution has become more and more serious. The dynamic results of Global Monitoring System-Atmospheric Monitoring of Five Cities in China from 1981 to 1992 show that the annual average T values of five cities are all over standard, and the pollution level is the highest among the cities participating in the international monitoring network. In recent years, the number of motor vehicles in cities has increased sharply, and the air pollution in some cities of China is transforming into a mixture of coal combustion and automobile exhaust. Fine particulate matter (PM 2.5) emitted from automobile exhaust is very easy to adsorb toxic substances to enter the deep part of human respiratory tract causing greater harm. The popularization of unleaded gasoline has greatly increased the content of volatile organic compounds especially benzene series in automobile exhaust, which made air pollution more complicated.

2.2. Water pollution
Most of the surface water of rivers, rivers, lakes and reservoirs in China has been polluted to varying degrees, some of which have caused serious harm. Most cities are affected by urban sewage discharge. The quality of source water is inferior to the five kind water quality standard, algae multiply and grow in large numbers. The content of ‘three nitrogen’ is seriously exceeding the standard, and the trend is increasing year by year. For example, the pollution in the Hanjiang River has been aggravated in recent years. Water quality monitoring in the 1990s shows that chloride, sulfate, chemical oxygen consumption and ‘three nitrogen’ contents are significantly higher than those in the 1980s.

There are also some problems in the quality of drinking water in China that the qualified rate of the national water quality census is only about 10%. At present, there are hundreds of millions of rural people in China whose drinking water sanitation conditions have not been improved. In the south, there are still some areas of rural drinking ditch and pond water, river water, resulting in the majority of rural residents infected with diseases.

2.3. Soil pollution
Industrial and urban wastewater, industrial waste residue, winter wheat garbage, manure and urine fertilization, chemical fertilizers and pesticides, and the deposition of air pollution can pollute the soil and directly or indirectly affect human health. The annual total discharge of sewage in our country is about 70-90 billion tons (comparable to the level of the 1970s in the United States), and it is basically used for farmland irrigation without treatment. As a result, there are serious pollution problems in the irrigated soil, heavy metals are often accumulated, and residues in grain and vegetables to varying degrees. Investigations show that the chromium content in the soil irrigated by sewage is twice as much as that of the soil irrigated by river water, and the content of grain in the soil irrigated by sewage is also significantly higher than that in the control group.

In China, about 200 million tons of municipal waste and feces are disposed of annually, and about 160 million tons of solid waste (1997) are disposed of, while the disposal rate is less than 10%. In many places, fresh manure without harmful treatment is used to fertilize, resulting in an increase in soil pathogenic microorganisms. In addition, China's waste residue and garbage lack of classification, some
garbage can not be burned, buried, treatment and lack of better methods and complete system, which is also a worldwide problem of contemporary environment.

2.4. Other pollution
With the development of science and technology, all kinds of electrical appliances are approaching our work and life. Computers, telephones, photocopiers, fax machines, televisions, refrigerators, microwave ovens, electromagnetic ovens, and mobile phones make us keeping in the adverse environment of electromagnetic radiation. The influence of electromagnetic radiation on the body is related to its frequency, field strength, wave nature, exposure time and individual differences, those can harm the central nervous system, cardiovascular system and blood system, even affect the immune system of human’s body.

The use of mirrors and ceramic tiles as high reflectivity materials for exterior walls of various buildings in urban construction is increasing day by day, that makes the city shine brightly and dazzling under the sunlight, while the city lights are bright and neon flashes at night, resulting in more and more serious light pollution. People put themselves in the artificial environment of ‘strong light and weak colour’ almost anytime and anywhere. According to scientific measurement, the reflection coefficient of white powder wall is 69%-80%, the light reflection coefficient of mirror glass is 82-88%, the light reflection coefficient of smooth white powder wall and white paper is as high as 90%, which is about 10 times higher than the surface of grass, forest or fur decoration. At present, the light intensity has greatly exceeded the physiological adaptability of human body in many cities.

3. Major Environmental Problems and Economic Root in China

3.1. Environmental Problems

3.1.1. Large Population. Chinese population has approached 1.3 billion people, and the available land resources have declined sharply. The per capita farmland accounts for only one fourth of the world’s level. Due to desertification, desertification and construction land use, the average annual land loss in China is 5 million mu. Although land use area is decreasing year by year, more food is required from the left land. As a result, a large number of chemical fertilizers, pesticides, pesticides and herbicides were used, which caused tremendous pressure to the environment in the process of destroying soil microorganisms and declining land quality continually.

3.1.2. Adverse Development of Township Enterprises. Some township enterprises have poor technology and equipment, lack of awareness of environmental protection, which original is destroying clean environment in rural areas. It could be seen everywhere in the country that a river was polluted by a small paper mill. Heap coking and smelting make a large area smoky and barren. In addition, China's environmental supervision work lags behind, and problems such as non-compliance with the law, lax law enforcement, and non-investigation of the law are widespread, which makes serious impacts on the environment from these overheated short-term economic actions.

3.1.3. Energy structure issues. China's energy structure is dominated by coal, which is heavily polluted. China's industrial and civil coal consumption is very large. Coal-fired pollution will continue as converting coal to oil or nuclear energy will be difficult for a long time. In some rural areas, vegetation continues to decline because of cutting down the trees as fuel, which causes serious ecological damage.

3.1.4. Insufficient State Governance. The state can not afford more funds to treat the environment. What’s worse is that China's sewage discharge and treatment rate is still less than 26% of industrial sewage and less than 3% of domestic sewage. At present, the state can hardly afford to invest hundreds billion dollars in infrastructure needed for comprehensive treatment and annual operation, the treatment
of atmospheric and solid wastes. The government has great determination to govern the environment, but it is still a long process to implement it all over the country.

3.2. Economic Root of Environmental Problems
The causes of environmental deterioration are various, including economic, social, technological and ethical etc, among which the economic reasons should be the most basic and important one. The most direct cause of environmental pollution is the polluter's pursuit of maximizing his own economic interests. In the problem of environmental pollution and its countermeasures, enterprises, the public and the government all decide their actions with the goal of maximizing their own economic interests. This kind of individual rational behaviour has formed the collective irrational game equilibrium result of polluting the environment.

It is difficult for social ethics and morality to impose fundamental constraints on enterprises and individuals, namely the users of the environment, who are pursuing their own interests and encouraged not to consider the loss and damage to the environment. The negative externality of environmental use is that the public, natural environment or public resources should share or bear the part that should be included in the private cost, and transfer part or all of the cost that individuals or individuals should bear to the society and the public. For example, there are negative impacts to people and environment from industrial and mining enterprises discharge waste water and exhaust gas, and the gas discharged by private vehicles. Therefore, the government needs to deal with externalities with adopting public policies such as regulation, taxation and so on.

Traditional modes of production and consumption present in the forms as follows,

This model is based on high energy, material consumption and high pollution, that is neither recyclable nor sustainable. Traditional production and consumption patterns are not economically sustainable. From the perspective of social psychology and culture, it is a morbid phenomenon of alienation with human beings themselves. Without overcoming this alienation, environmental problems will not be solved.

‘In developing countries, most of the environmental problems are caused by underdevelopment. Millions of people still live far below the minimum level required for a decent life. They do not have access to adequate food and clothing, housing and education, health care and sanitation. Developing countries must therefore commit themselves to development, bearing in mind their priorities and the need to protect and improve the environment.’ The declaration of the United Nations Conference on the Human Environment (1972) pointed out.

In developing countries, it is one of the root cause of environmental deterioration of economic poverty caused by underdevelopment. Industrial systems in some countries have not been established and survival and repayment for debts have forced them to constantly exploit their own resources and export them cheaply to developed countries. Due to lack of funds and technology, some developing countries are unable to solve the environmental problems caused by overexploitation of resources. As a result, many countries are caught in a vicious circle of economic poverty and environmental degradation.

4. Major Environmental Problems and Economic Root in China
As a regulator of environmental pollution, the government has the responsibility to solve environmental pollution problems on behalf of many victims. In urban management, the task of environmental protection is carried out by local governments, however, under the financial system of our country, the economic interests of local governments are closely related to the economic benefits of local enterprises. Under the limitation of current technology level, the control of environmental pollution will inevitably mean the decline of production capacity in a certain period of time. At the same time, in the traditional
statistical system, local GDP is also the main indicator to measure the performance of local governments. Therefore, for the sake of their own interests, local governments can easily become the spokespersons of local enterprises (including polluters), rather than the representatives of many victims of environmental pollution.

Therefore, some organizations and experts have proposed that PM2.5 should be included in the performance appraisal. At the same time, governments should incorporate environmental governance into the performance appraisal of the government, and carry out environmental governance through the management of urban development and operation. Chinese country's administrative means are usually more effective and fast, but considering the complexity of environmental problems, it depends not only on urban management, but also on the regulation of legal system and market mechanism to governance environment. In prevention and control, economic incentives, straighten out market mechanism and price mechanism to form reasonable price signals should be used more frequently. All in all, we should mobilize administrative, legal and market mechanisms in a multi-pronged manner.

In order to improve the current situation of the environment and solve the environmental problems through the supervision of urban management and administrative restraints, long-term mechanism has to be established to treat both root causes and symptoms. Urban management departments should advocate green administration, abandon excessive dependence on GDP to determine performance, adjust industrial structure and developing mode to reduce even eliminate high pollution, high energy consumption and low output enterprises, introduce more green environmental protection industries. At the same time, strengthening the assessment of achievements in the construction of ecological civilization, building the relevant system of environmental responsibility, and establishing the leader’s responsibility system of environmental local government should be implemented.

5. Conclusion
In the process of urban construction and urbanization, trying our best to promote urbanization without destroying the original ecological environment must be observed, so as not to destroy the original ecological balance of urban or rural areas. Laws and regulations related to environmental protection should be further improved to raise market access standards for pollutant emissions from enterprises and strengthen the penalties for illegal discharge of pollutants from the enterprises.

In conclusion, in the view of the recent deterioration of environmental quality and the frequent occurrence of extreme weather phenomena, only by harnessing the source and establishing a long-term mechanism can we fundamentally and thoroughly solve the environmental pollution problems aimed at recent deterioration of environmental quality and frequent extreme weather phenomena in China.

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