



Environmental Pollution Status Quo and Legal System of Third-Party Governance in Hebei Province, China

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ABSTRACT

Environmental pollution has consistently been a serious obstacle to the sustainable development of China's national economy. The proposed third-party governance mode for environmental pollution is suitable for China's development and could fundamentally solve pollution problems. The construction of the legal system of third-party governance is the primary prerequisite for determining the relationship between relevant government departments and enterprises discharging and managing pollution and for upgrading market and competitive mechanisms. Taking Hebei Province as an example, this study analyses the design and implementation of legal systems adopted by developed countries to prevent environmental pollution, and concludes pollution regularity in recent years. The study also summarizes the main modes of the third-party legal system for environmental pollution governance and proposes relevant suggestions. Results show that third-party governance can improve the effect of environmental pollution control under the market mechanism. The unreasonable industrial structure and extensive economic growth in Hebei Province lead to increased fluctuations in wastewater emissions and industrial solid waste, and the main pollutants in industrial exhaust emissions are relatively large in number. Moreover, entrusted governance, trust operation, and public-private partnership are the major modes of the third-party governance's legal system. The study's results are of considerable importance in clarifying different subject responsibilities of third-party environmental pollution governance and in upgrading its market and competitive mechanisms. The results also provide a valuable reference to the perfection of an assessment system to the governance effect and the establishment of public participation and legal systems of third-party governance.

INTRODUCTION

As a developing country, China's economic development lags behind that of developed countries. Numerous environmental pollution issues have emerged due to economic development. Haze and sand-dust events often occur in provinces with highly developed industries. Air has been severely polluted, and this endangers people's health and safety outdoors. Water, soil, and atmosphere improvement should be emphasized to strengthen the protection of the ecological environment, and the prevention and management of pollution should be reinforced. In the traditional polluter governance mode, promoting third-party governance is an inevitable choice for professional and social pollution management. Manufacturers only focus on their business operation and "transfer" the pollution governance responsibility to professional enterprises by signing contracts to maximize economic benefits and solve environmental pollution simultaneously.

Hebei Province is one of China's major provinces with large energy consumption and high pollution discharge. The resources and environment of Hebei Province are under

considerable pressure, and the pollution improvement task is heavy. As shown in Fig. 1, per capita GDP increased from 2006-2017. Although the proportion of the secondary industry has declined, this industry still accounts for the largest part in the industrial structure, with heavy industry as the leading industry. Environmental pollution has become increasingly serious along with the rapid development of the economy. The ecology is relatively fragile, and haze and sand-dust events occur frequently. Therefore, the third-party governance mode is urgently needed to prevent environmental pollution and improve environmental quality, thereby realizing coordinated economic and environmental development in Hebei Province. A third-party governance system has several advantages in improving enterprise pollution management efficiency and reducing the pollution control cost. This system provides convenience to the supervision of environmental protection administration and alleviates the government's financial pressure. However, in practice, the limitations of the legal system, inadequate market access and exit mechanisms, existing financing obstacles of third-party governance enterprises, and business risks caused by the discontinuous policy restrict the devel-

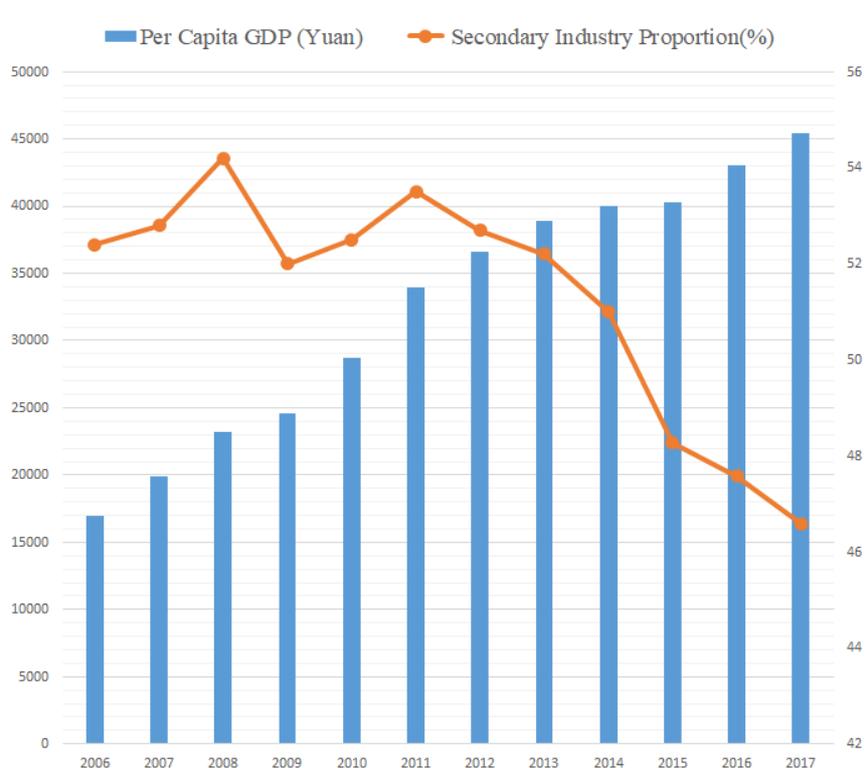


Fig. 1: Per capita GDP and the secondary industry proportion in Hebei Province from 2006 to 2017. (Data from <http://olap.epsnet.com.cn/>).

opment of the third-party governance system.

EARLIER STUDIES

Some developed countries have undertaken studies on third-party governance (or market operations) of environmental pollution. In view of the early start of the industrial revolution in these countries, environmental issues were immediately recognized and received considerable attention. These countries, with their pollution discharge rights in the international community, have gained rich experiences and advanced technologies in dealing with environmental pollution. A considerable amount of literature shows that third-party governance can not only improve the pollution control effect, but also promote ecological civilization construction under the market mechanism. Jackson (1992) analysed the quantitative relationship among pollution pricing, government regulation, and environmental pollution. Yhdego (1995) provided a general introduction of water, air, and noise pollution in Tanzania and believed that the country lacks a conceptual framework, public support, government motivation, and legislative and regulatory infrastructure, all of which were necessary for efficient environmental pollution management. In the end of the study, the

author proposed a simplified pollution prevention strategy. Blakemore et al. (1998) showed that Britain's demand for primary energy resources increased slightly from 1970 to 1994, and its carbon dioxide emissions considerably decreased during this period due to the enacted UK/EU environmental policy. Blakemore et al. (2001) believed that laws have been enacted to increase the use of new energy sources and therefore restrict large pollutant emissions from power plants and gasoline-powered vehicles; evidently, nitric oxide emissions from power plants decreased. Mugabi et al. (2007) analysed relevant recycling policies for water resources in developing countries and proposed suggestions from the perspective of legal governance. Wang et al. (2010) argued that the number of discarded electrical and electronic equipment in China had rapidly increased, but a corresponding administrative supervision and recycling system had not been established to date. The government should regulate the manufacturing, recycling, and disposal of household appliances through legislation. Hua et al. (2011) stated that clean production is one of the voluntary environmental management tools that could effectively solve resource shortages and environmental pollution issues. Clean production technology is a quasi-public prod-

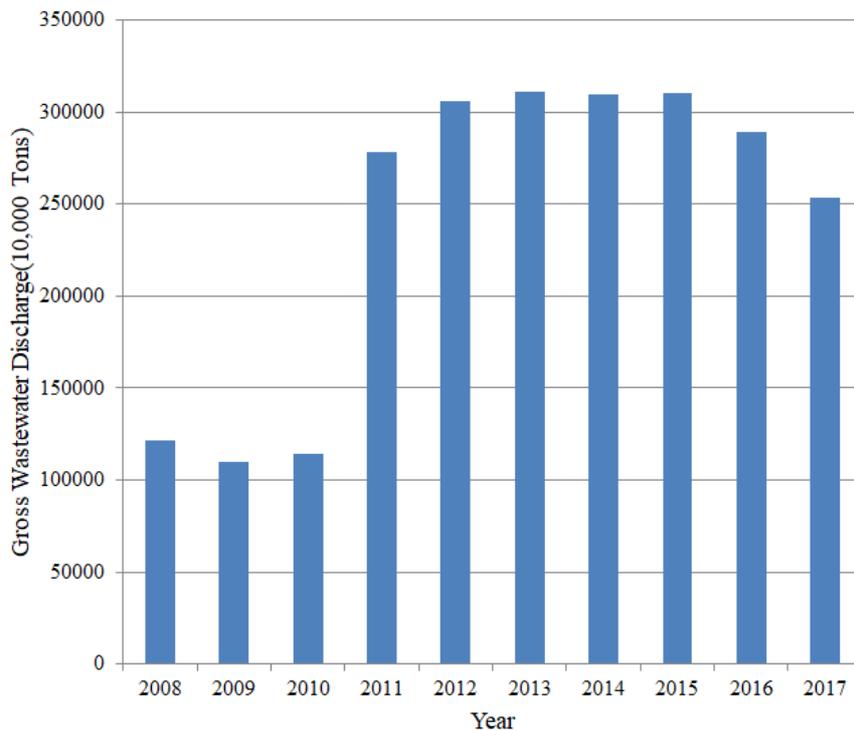


Fig. 2: Gross wastewater discharge in Hebei Province from 2008 to 2017. (Data from the China Environmental Statistics Yearbook).

uct with positive externality. Guosheng et al. (2011) proposed the upgrading of the systems of environmental protection infrastructure, ecological compensation, technical support, performance evaluation, and industry and introduced several countermeasures related to environmental protection. Wang et al. (2011) believed that environmental pollution coexists with environmental improvement. However, an evident increase in environmental pollution pressure was observed; therefore, environmental governance should be considerably enhanced. Swartjes et al. (2012) summarized the management status quo of contaminated sites in the Netherlands and argued that the legislative work on these contaminated sites should be reinforced. Feng et al. (2014) analysed the development of environmental pollution liability insurance in China and found that the imperfect law weakened the legal basis of pollution insurance, and the inadequate technical support hindered the further improvement of insurance. Basijrasikh (2015) showed that Afghanistan established its National Environmental Protection Agency with the help of the United Nations Environment Program and analysed the measures implemented by the government to cope with environmental issues. Horne et al. (2016) focused on the direct relation between environmental regulators from the government and business own-

ers of third-party governance enterprises. The author also provided new perspectives on measures, such as pollution prevention, site remediation, and waste management, for individuals engaged in environmental protection. Zhang et al. (2016) studied the information transparency and disclosure issues in environmental governance in China and proposed suggestions for improving the information release of third-party environmental governance. Through a service evaluation of third-party governance, Xu et al. (2017) proposed an evaluation system comprising five main indicators, including enterprise capacity, equipment operation, and economic and environmental benefits of techniques. Feng et al. (2017) introduced China's environmental protection legislation from the perspective of national, local, and international communities. The author also clarified the definitions of legislation, plan, and policy and established a preliminary analysis framework to evaluate their integration. Yousefi et al. (2017) argued that in consideration of the importance and challenges posed by air pollution in Teheran, the Iranian government should require enterprises to use renewable energy and reduce environmental pollution by enacting relevant laws.

These studies have shown that third-party governance is necessary for managing environment pollution. Under

the premise of a sound legal system, the binding force of national administration should be enhanced, and third parties should be supervised and governed by multiple parts. The supervision of the government environmental department should be strengthened, and multiple parties must be allowed to participate. Relevant regulations and laws should emphasize the responsibility of polluters and require polluters and third parties to control pollution at the source and pay the penalty after pollution is generated. Taking Hebei Province as an example, this study examines environmental pollution regularity in recent years, summarizes the main modes of the third-party legal system for environmental pollution governance, and proposes relevant suggestions. Third-party governance is a new mode of pollution management. This study is of heuristic value to the legal mechanism construction, legal responsibility determination, and top-level design of third-party governance.

STATUS QUO OF ENVIRONMENTAL POLLUTION IN HEBEI PROVINCE

Water pollution: Water pollution is caused by many factors, among which industrial wastewater generated by industrial activities is regarded as the main one. Many complex chemicals exist in wastewater, and these chemicals pollute water and pose a threat to people's health. Fig. 2 shows that in 2008, the wastewater discharge of Hebei Province was 1211.72 million tons. The amount reached 2536.85 million tons in 2014, with an average annual growth rate of 12.15%. However, the amount of industrial wastewater discharge declined from 2009 to 2010. After 2011, the wastewater discharge continued to increase, but the overall amount of increase was small. In 2015, wastewater discharge began to increase again. This situation shows that controlling industrial wastewater discharge is necessary, and the management of pollution and polluted waters should be considerably strengthened.

Air pollution: Air pollution is primarily caused by natural sources and human activities. The natural sources mainly originate from natural disasters, such as earthquakes, tsunamis, mudslides, and fire. Air pollution caused by human activities refers to the exhaust gas generated by humans' daily life and industrial activities. The pollutants emitted by enterprises that produce steel, petroleum chemicals, and ferrous metal contain large amounts of toxic gases, such as sulphur dioxide and nitrogen dioxide, which damage the air and people's health. Industrial waste gas is the primary cause of waste gas. As shown in Fig. 3, the amount of sulphur dioxide emissions in Hebei Province was 789,443 tons, showing a 44% decrease compared with that in 2011. The amount of nitrogen oxide was 1,126,640 tons, showing a 37% decrease. Smoke (power) dust emission was 1,322,477

tons in 2011 and reached a peak of 1,797,683 tons in 2014. This emission was 1,256,835 tons in 2016, showing a decrease of 4.9% compared with that in 2011.

Solid waste pollution: Solid waste primarily originates from urban household waste, agricultural waste, and waste generated by industrial activities. Urban household waste refers to food and plastic waste generated by residents' daily life. Agricultural waste refers to animal waste, crop straw, agricultural fertilizer, and plastics produced by agricultural activities, and waste generated by industrial activities refers to various waste fuels, residues, foam, and dust emitted by enterprises during production. The primary source of solid waste is industrial activities. Fig. 4 shows that the amount of industrial solid waste generated in Hebei Province in 2005 was 162.79 million tons. This amount continued to increase until 2015, reached a peak of 455.75 million tons in 2012, and declined to 327.21 million tons in 2017, with an annual average increase of 8.42% compared with the amount in 2005. The overall consumption of industrial solid waste in Hebei Province was 83.74 million tons in 2005. The figure was 187.4 million tons in 2017, with an annual average increase of 10.32% compared with that in 2005. The higher the utilization rate of industrial solid waste is, the better the waste is re-utilized. Improved waste utilization saves energy and natural resources; protects the environment; improves environmental quality, and enhances energy efficiency.

MAIN MODES OF THE THIRD-PARTY GOVERNANCE'S LEGAL SYSTEM FOR ENVIRONMENTAL POLLUTION

Entrusted governance: Entrusted governance service refers to the manner in which an enterprise that discharges pollutants entrusts a third-party enterprise to provide particular services by signing an entrusted operation contract and pays for pollution management according to the contract. The services include financing, operation maintenance, upgrade, and transformation towards newly built or expanded pollution control equipment. The contract stipulates that the third-party shall ensure satisfaction of the emission reduction target through operation and bear the corresponding legal responsibilities. Two main types of entrusted governance service modes are available. Firstly, the enterprise that discharges pollutants entrusts a third-party enterprise to provide a service package from project design, engineering construction, and tests to operation management after the project is completed. The pollution control assets are owned by the enterprise that discharges pollutants, and the third-party enterprise only provides operation and maintenance for the equipment while ensuring that the pollution control effect stipulated in the contract is achieved. Sec-

only, the enterprise that discharges pollutants does not own the pollution control equipment. The pollution control assets are owned by the third-party enterprise. The third party takes charge of equipment construction and operation and brings the equipment to enterprise management to be accounted for independently.

Trust operation: Trust operation refers to the manner in which an enterprise that discharges pollutants entrusts a third-party enterprise to provide particular services by signing a trust contract and pays for trust operation according to the contract. The services include operation, maintenance, upgrade, and transformation toward existing pollution control equipment. The contract stipulates that the third party shall ensure satisfaction of the emission reduction target through operation and bear the corresponding legal responsibilities. Two types of trust service are available. Firstly, the third-party enterprise is responsible for the operation of pollution control facilities owned by the enterprise that discharges pollutants. Secondly, the third party is also fully involved in the environmental pollution management of the enterprise discharging pollutants. The difference between the two modes is the ownership of pollution control equipment by the third-party enterprise. In the entrusted governance mode, the third-party enterprise owns or partially owns the pollution control equipment, whereas the third party does not own the equipment in the trust operation mode. The third-party enterprise is only responsible for the operation, management, maintenance, upgrade, and transformation of the equipment based on the trust request proposed by the enterprise discharging pollutants.

Public-private partnerships: Public-private partnerships (PPP) refer to governmental agencies and other enterprises or investors that construct or operate public utilities together with the use of joint stock. PPP is an important tool for public management in developed countries. The scale and management level of PPP projects in developed countries, such as Australia, the United States, Spain, and Germany, is at the leading level worldwide. The application of the PPP mode and third-party governance system to environmental pollution is effective in attracting social capital and professional environmental protection forces. These approaches can remarkably alleviate or even eliminate financial dilemmas and guarantee the benefits and development space of investors who pursue stable medium and long-term investment return. In this way, a win-win situation can be achieved to compensate for government regulation, and reduce the cost of polluters, and promote the healthy and orderly development of the environmental protection industry.

POLICY RECOMMENDATIONS

Clarify the legal responsibility in the third-party

governance mode: In the third-party governance mode, the enterprise that discharges pollutants entrusts environmental pollution control work to a third-party enterprise by signing an entrustment contract. The purchase of pollution control services from the third party is the main indicator of the third-party governance mode. According to the principle of “polluter pays”, the purchase is a contractual relationship that obeys private laws. The pollution control responsibility of the enterprise that discharges pollutants is also the obligation requested by the public law. The contractual relationship between the two enterprises is subject to laws. Enterprises discharging pollutants have the responsibility to control pollution, and their pollutant discharge should meet national emission standards. Pollution control enterprises that discharge pollution should inform other enterprises of their operation state, emission types, and concentrations. Rights and obligations supplement each other, and one cannot exist without the other. Improved cooperation between the two parties of pollution control management can only be achieved through mutual understanding and trust. Therefore, clarification of the relationship and responsibility of each entity in pollution control benefits the determination of their rights and obligations and allows law enforcement agencies to easily distinguish and investigate their specific responsibilities.

Strengthen the legal standing of government supervision in third-party governance: Strengthening the supervision of the government’s environmental protection department is crucial in solving the current environmental issue. At present, in the environmental protection market, many enterprises that discharge pollutants build pollution control equipment but do not utilize the equipment; meanwhile, pollution control enterprises cannot provide accurate monitoring data. The lack of effective and necessary supervision is the main problem. Given that the market entity considers the nature of the “economic man,” the market aims to achieve maximal benefits. The market entity would rather accept punishment from the environmental protection department than equip itself with expensive pollution control facilities, let alone third-party governance. In addition, the third-party governance mode changes only the entity that is responsible for pollution control based on the contract. Although a pollution control enterprise has a certain obligation to supervise the pollution management work of the enterprise that discharges pollutants, it cannot replace the environmental law enforcement department because enterprises that discharge pollutants ignore their damage to the environment. The success of third-party governance requires strict supervision from the government’s environmental protection department. In this way, enterprises discharging pollutants are “forced” to take actions to pre-

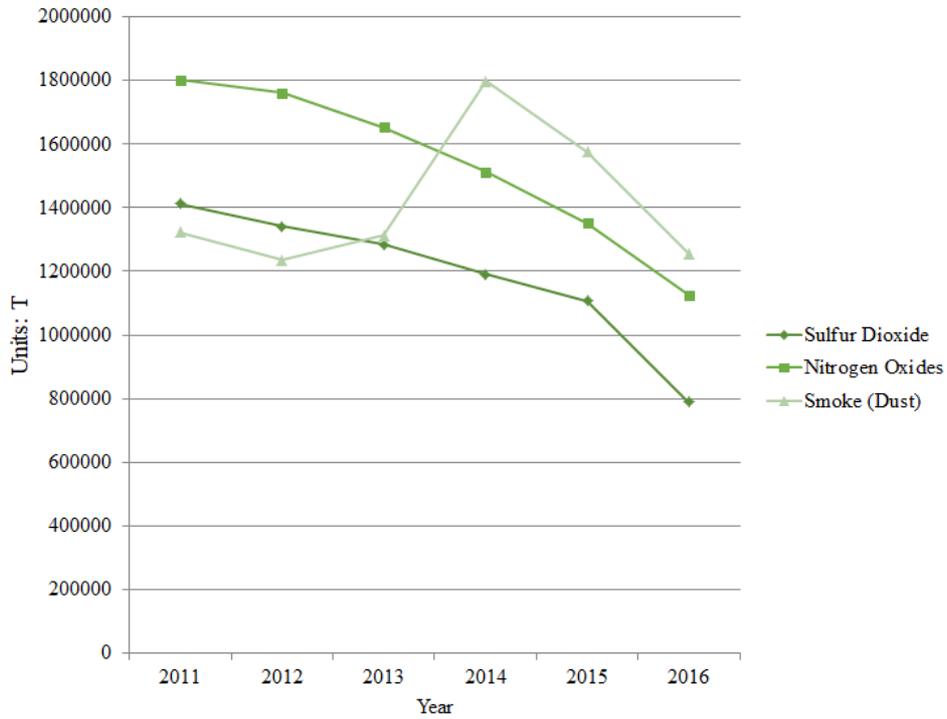


Fig. 3: Amount of main pollutants in industrial waste gas in Hebei Province from 2011 to 2016. (Data from the China Environmental Statistics Yearbook).

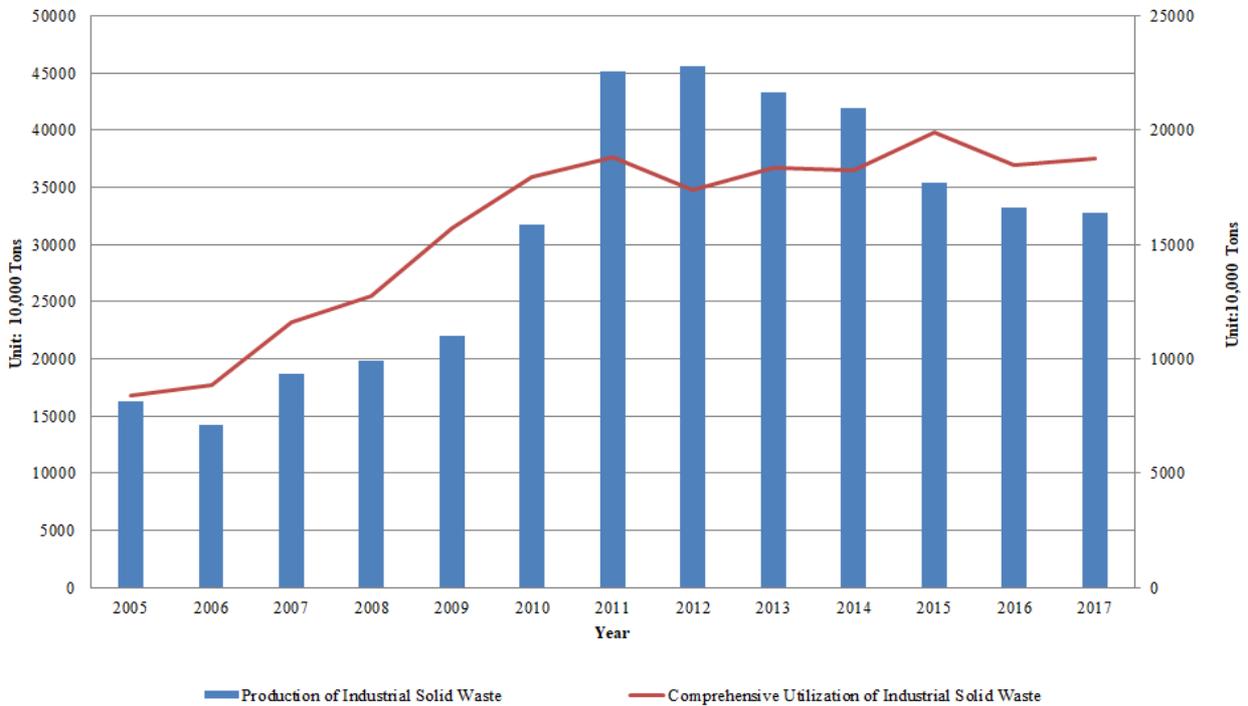


Fig. 4: Amount of produced and consumed industrial solid waste in Hebei Province from 2005 to 2017. (Data from the China Environmental Statistics Yearbook).

vent pollution, and enterprises managing pollution are “forced” to take actions to control pollution.

Establish an environmental credit evaluation system for third-party governance enterprises: The premise of healthy and effective market development is that each market entity should strictly follow the market order, undertake relevant marketing obligations, and be responsible for its actions while enjoying its rights. In practice, many professional governance companies refuse to bear their legal responsibilities by seeking pretext that they have not obtained permission nor a contract or they are treated unjustly. The existing law does not determine the legal relationship between relevant market entities under the third-party governance mode, leaving enterprises that discharge pollutants at a disadvantage in terms of taking responsibilities. Relevant service companies should be supervised from the very beginning (from their entry into the market) to punish the appropriate responsible party. Enterprises with an incomplete certificate and poor credit should be eliminated from the market, and well-qualified ones with high credit should be given priority to enter the market.

Standardize the entry mechanism of third-party governance in environmental pollution management: Relevant documents can be refined according to pollution types. An enterprise entry standard could be set from the aspects of company’s registered capital, technology, and market threshold price so that the scale of the third-party governance enterprise can be legalized and the management entity can be regulated. The market entry standard of the third-party governance enterprise should be strictly controlled to provide an institutional guarantee for regulatory market operation of the third-party governance from the source. Given that the market entry and exit mechanism is still incomplete, the environmental supervision department should formulate and adjust the environmental service threshold price provided by the third-party governance market based on material and technical limits for different pollution types and fields and the average level of third-party governance market profits in each field. This department should also establish and upgrade the pricing system in the third-party governance market and strictly control the market entry price. Adhering to a marketable operation mode in third-party governance and allowing the market discipline to play its role are necessary in establishing systems for pricing, credit, and qualification evaluation standards of third-party governance in a fair market. Outside the market, the government should pay attention to market supervision and risk control, thus mitigating the gap in the market mechanism.

CONCLUSIONS

As an important legal system promoted by China for envi-

ronmental governance, third-party governance establishes a pollution control mechanism and provides a new means of environment management and ecological restoration. The legal system of third-party governance is a crucial driving force in promoting professional and industrial environment management. It is also an effective incentive for the development of the environmental protection industry. The third-party governance mode is a new choice for resolving environmental pollution issues. Taking Hebei Province as an example, this study analyses the design and implementation of the legal system adopted by developed countries to prevent environmental pollution and concludes pollution regularity in recent years. It also summarizes the main modes of the third-party legal system for environmental pollution governance. The research results show that the implementation of third-party governance under the market mechanism can completely improve the effect of environmental pollution control. Increased fluctuations in wastewater emissions and industrial solid waste are observed in Hebei Province, and the main pollutants in industrial exhaust emissions are relatively large in number. Moreover, the major modes of the third-party governance’s legal system, which include entrusted governance, trust operation, and PPP, are used to prevent environmental pollution. Several suggestions, such as clarifying the legal responsibility in the third-party governance mode, strengthening the legal standing of government supervision in third-party governance, and establishing an environmental credit evaluation system for third-party governance enterprises, are also proposed in this study. The author suggests that several aspects, such as clarifying the entity responsibility of third-party’s environmental pollution governance, upgrading market entry and exit mechanisms, removing financing barriers for the third-party governance, and improving the insurance system of third-party governance, should be further studied.

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