Research on Environment Governance of Green Logistics——Taking Beijing as An Example

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Abstract. Environmental governance is an important indicator of the development of green logistics. It mainly include the solid waste utilization rate, pollution abatement investment, sewage treatment rate of logistics industry. It takes Beijing as an example, compares the environment governance development level of Beijing with the country, and gets analysis and comparison of the development level of Beijing in the national position. It puts forward the development mode of green logistics, which provides policy reference for the development of green logistics.

Keywords: Green logistics, Logistics statistics, Environmental governance

Introduction

The implementation of green logistics mainly from the aspects of reducing environmental pollution, strengthen environmental governance and to create a good social environment. Environmental Management in advocacy, resulting in government and enterprises for the logistics links of the pollution, increase the investment for control and supervision, to ensure the real implementation of the policy of enterprise green logistics. Some scholars have been the evaluation study of logistics industry development environment. Remko I. van Hoek 1999[1] put forward the concept of low carbon supply chain in the thesis, and points out that in order to reduce the economic activities on the environment, companies need to develop together with the economic development, low carbonization, practice of low carbon supply chain, in order to reduce the pollution of the environment. Liu Donglin (2010)[2] uses system dynamics method to analyze the mutual effects of green logistics system and the relationship between environmental factors, and puts forward government decision on the development of green logistics system and the inspiration of green logistics system of developed countries to china. Yin Xin (2012) [3] takes the development of logistics in south of Jiangsu area as an example, studies the development path and countermeasure of the local green logistics. In his paper, it introduces the current situation of logistics enterprises in the development of the south of Jiangsu area, points out some problems existing in the development of green logistics, and finally puts forward the path and countermeasures of developing green logistics. To understand the environmental pollution evaluation is not objective, develop targeted policy environment is the fundamental. In Chen Zengfeng(2010)[4],according to analysis of the origin and practices of waste treatment, the nature of waste treatment was put forward, that is to say, it is environmental management problem firstly, which was to solve the environmental problems caused by waste. Then it is social management problem, which was to solve the problems of the ecological cycle of societal logistics.

In this paper, taking Beijing city as an example, to collect statistical data of logistics industry in Beijing environment management, statistical analysis, put forward the environmental governance

policy recommendations lay the quantitative foundation for further study of Beijing green logistics development evaluation.

Statistical analysis of environmental governance

As with the environment pollution, environmental governance is another important indicator of the development of green logistics. It mainly include the solid waste utilization rate，pollution abatement investment，sewage treatment rate of logistics industry. These targets directly reflect the level of development of green logistics in a certain extent. They are very important evaluation indexes. Then, according to the annually statistical data of Beijing and the country, we evaluate the environmental governance work as shown in figure 1~3.
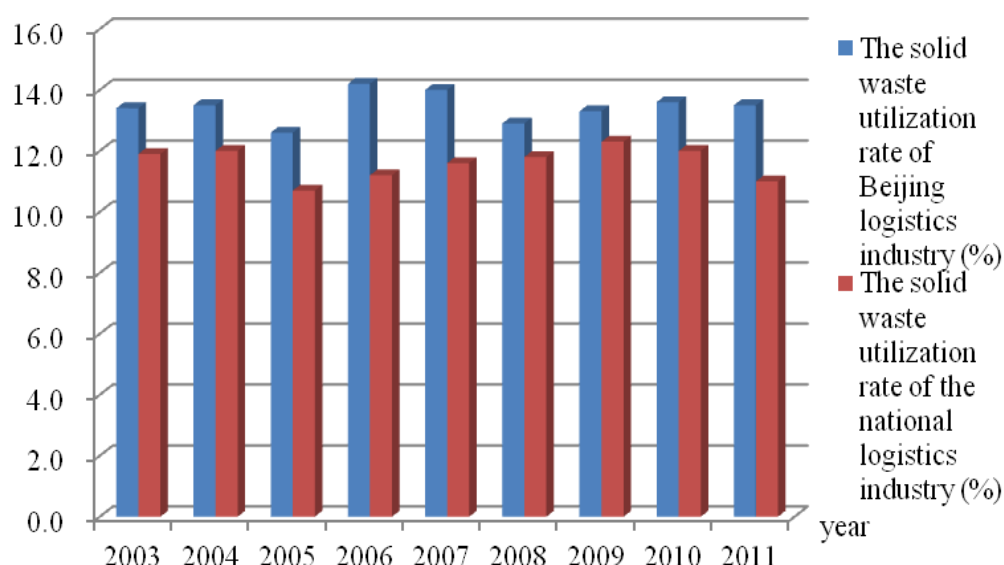

Fig 1. Comparison of logistics industry solid waste utilization rate between Beijing and the nation (%)

Figure 1 shows comparison of logistics industry statistical data of Beijing and the nation solid waste utilization rate during 2003~2011 years. From the graph, we discover not hard, in the past few years, the Beijing logistics industry solid waste utilization rate does not show a consistent upward or downward trend, but has been volatile, seen the rise to the top 14.2% in 2006 to 2007 years, then dropped back to 12.9% in 2008. It slowly rises or falls, no breakthrough 14%，these changes may be attributed to the 2008 Beijing Olympic Games. In order to let the Olympic city's environment more beautiful, government made a lot of work before. So this also led the logistics industry solid waste utilization rate reached the highest value in 2006~2007. Then the intensity of management has declined.

Look at the average level of the whole country, we can find that, over the years in Beijing logistics industry solid waste utilization rate is higher than the national level, this shows that the work of waste utilization in Beijing do better. But in order to achieve high level green logistics development, the regulation need intensify efforts. The relevant departments need harder rules for enterprises waste rate, preferably in the form of law to constraints. Only in this way, the logistics industry solid waste rate can improve; contribute to the development of green logistics.

Figure 2 lists annual per capita pollution control investment comparison of logistics industry between Beijing and the nation during 2003~2011 years. We can see from the chart, 2003~2011 can be divided into two stages of development. The first stage, 2003~2007 years, the logistics industry pollution control investment of Beijing continued to increase, higher than the national average level.

The second phase, from 2008~2011, control investment gradually reduced, the per capita investment is lower than the national average level. From the change of the dynamic process can be seen that in order to meet the 2008 Olympics, the pollution control investment very seriously, has increased the intensity. But after the Olympics, pollution control investment rapid decline, this is not a good phenomenon.
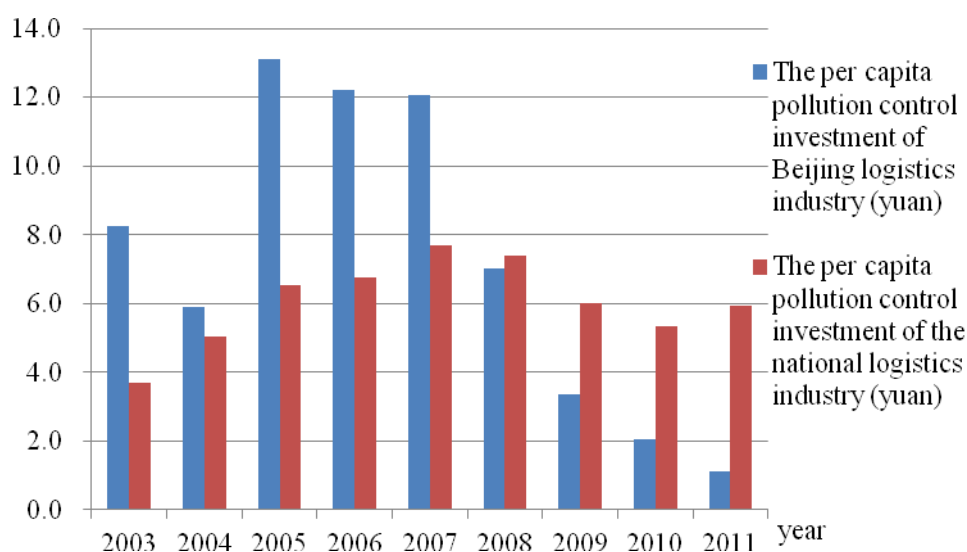

Fig.2 Annual per capita pollution control investment comparison between Beijing and the nation

With the continuous development of the economy, pollution produced in the production of industrial and agricultural will be more and more, if the pollution control investment correspondingly reduced, the environmental pollution will be more serious, this is a vicious spiral. So, in order to protect environment, realize green logistics, logistics industry must make greater efforts in pollution abatement investment. Governments also need to support to the logistics industry, to provide special funds, increase the pollution control investment supervision, treat pollution carefully. Only in this way we can further realize the green logistics.
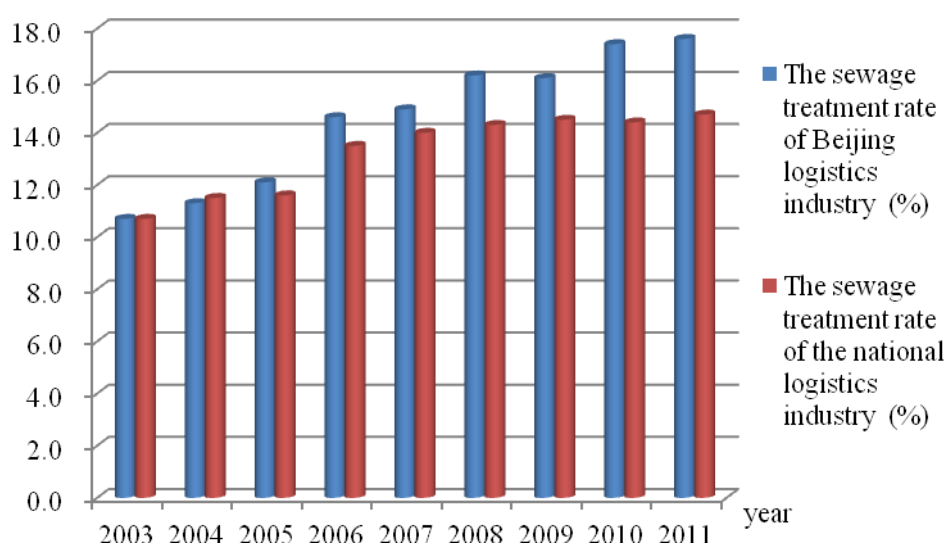

Fig.3 Comparison of logistics industry sewage treatment rate between Beijing and the nation

Figure 3 lists the comparison of logistics industry sewage treatment rate between Beijing and the nation. We can see from the chart from 2003 to 2011, the logistics industry sewage treatment rate in Beijing showed a gradual upward trend, and has been higher than the national average level. It is in

advanced level in the country. This shows that the severity of the country has become aware the pollution of the environment, pay attention to sewage treatment. Water pollution is one of the most important aspects of environmental pollution. For the logistics industry, enterprises in the process of production and circulation processing, need to control sewage emissions and supervised before discharge. The state enterprises of the sewage treatment equipment all have the corresponding policies and regulations. But many enterprises have not reached the standard of sewage treatment equipment, because the cost is too high, it will greatly increase the cost of logistics enterprises. So many companies do not want to purchase of sewage treatment equipment, and even some enterprises have bought the sewage treatment equipment, but not put into use.   These problems are difficult to solve for sewage treatment. So the relevant departments should strengthen the supervision work, and strive to improve enterprise sewage treatment facilities, to enhance the level of development of green logistics.

From figure 1~3, we can see that the Beijing logistics industry environmental governance is in the national leading level. But there are still many aspects to be improved. We must in the curb environmental pollution, but also need to do a good job of management work in pollution occurs, reduce the harm to the environment, these two aspects need both, the environment question is focus of Chinese and even the whole world. The development of green logistics needs to strengthen environmental governance in the suppression of environmental pollution at the same time. Only in this way, the realization of green logistics is to be better.

A comprehensive comparison of the environmental governance

In order to evaluate the environmental governance of green logistics, first carries on the quantitative indicators of statistical data analysis. According to the statistics of Beijing and the data of national during 2003~2011, the state of development of calculated annually, development level of a sequence diagram to show Beijing and the nation environmental governance. Since each index data units are not the same, in order to be able to compute unified, With Q21, Q22, Q23 to indicate the solid waste utilization rate, pollution abatement investment, sewage treatment rate of logistics industry, we first standardize data, get the results as shown in table 1~2.

Tab. 1 the environmental governance of Beijing evaluation index standardization results

The standardized score	2003	2004	2005	2006	2007	2008	2009	2010	2011
Q11	-0.111	0.056	-2.012	1.504	1.045	-1.191	-0.464	0.227	-0.007
Q12	-0.007	-0.493	1.232	1.103	1.165	0.53	-0.82	-1.221	-1.49
Q13	-1.581	-1.326	-0.979	0.033	0.137	0.664	0.639	1.168	1.245
Comprehensive score	-1.699	-1.763	-1.759	2.64	2.347	0.003	-0.645	0.174	-0.252

Tab.2 the national environmental governance evaluation standard results

The standardized score	2003	2004	2005	2006	2007	2008	2009	2010	2011
Q11	0.687	0.862	-1.841	-0.801	-0.067	0.322	1.319	0.706	-1.187
Q12	-2.039	-0.891	0.348	0.559	1.386	1.169	0.025	-0.573	0.017
Q13	-1.738	-1.217	-1.131	0.174	0.528	0.706	0.879	0.801	0.998
Comprehensive score	-3.09	-1.246	-2.624	-0.068	1.847	2.197	2.223	0.934	-0.172

According to the above standardization results of table1~2, respectively, the comparison between Beijing and the national environmental governance as shown in figure 4.
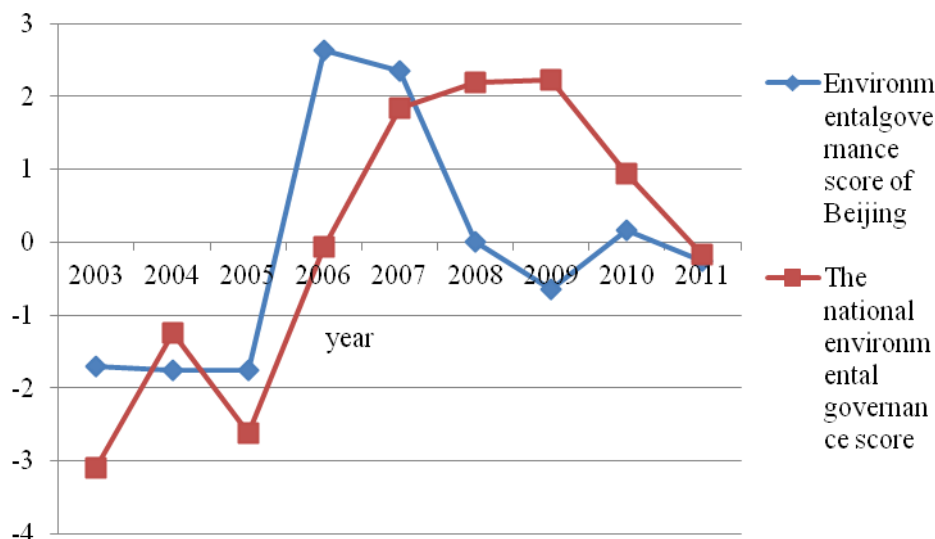
Fig.4 comparison between Beijing and the national environmental governance

As Figure 4 shows, before 2007, Beijing environmental governance is better the country, then after 2007, the environmental governance in Beijing is lower than the national average level. Therefore, as for the Beijing, it should increase the formulation and implementation of environmental policy in the next few years.

Environmental governance and strategy of green logistics

In order to realize the green logistics, government, industry, enterprises and society masses must be together.

The government:

(1) Increase the propaganda of green logistics.

(2) Establish the green logistics related laws and regulations.

(3) The requirements of green logistics development as the follow four aspects.

① Pay attention to the relationship between enterprises economic development and environmental protection, to achieve sustainable development

② The requirement of logistics industry norms, to ensure the efficient environmental protection

③ The enterprise must be equipped with sewage, waste gas treatment equipment, sewage treatment and waste gas to the number with a certain proportion of emissions, not less than 85% of the emission.

④ It requires the establishment of supervision system within the industry, green logistics for enterprises conduct regular check, and set up a corresponding system of rewards and penalties

Logistics industry:

(1) positive response logistics related policies and the implementation of the various enterprises

(2) the establishment of green logistics knowledge training institutions

(3) the establishment of green logistics performance evaluation system

(4) the establishment of green logistics system of rewards and penalties

Enterprise management:

(1) the establishment of green logistics supervision team

(2) the establishment of green logistics performance evaluation system

(3) the establishment of green logistics system of rewards and penalties

The social masses:

(1) strengthen the green logistics knowledge learning

(2) Practice of green logistics operations

Conclusion

In this paper, it takes Beijing as an example, carries on the statistical analysis of the environment development of green logistics, established evaluation index system from environmental pollution aspect in evaluating the development of green logistics. The aim of the study is to make quantitative research on the development of green logistics, points out the insufficiency in the green logistics in our country. There is great significance for the development of green logistics, but also the important impetus to realize sustainable development of economy.

Acknowledgments

Reference

[1] Remko I.van Hoek, From reversed logistics to green supply chains, Supply Chain Management. 3(1999) 129-134.

[2] Liu Donglin, Study on the system of green logistics, Wuhan: Wuhan University of Technology. 2010.

[3] Yin Xin, Study on the path and Countermeasures of developing green logistics in South of Jiangsu area, The enterprise economic. 9(2012)152-156.

[4] Chen Zengfeng, Sun Yingjun, Zhang Yongfang,etc., Nature of Waste Treatment,Environmental Sanitation Engineering.18(2010)47-49.