The Status Quo and Countermeasures of Green Logistics in Chinese Ports

Jing CHEN\textsuperscript{1,2} and Chun-yan DONG\textsuperscript{1,3,*}

\textsuperscript{1}Nanjing Vocational Institute of Transport Technology, Nanjing, China
\textsuperscript{2}Nanjing University, Nanjing, China
\textsuperscript{3}HOHAI University, Nanjing, China

*Corresponding author

Key words: Green, Logistics development, Status analysis, Countermeasure.

Abstract. Port logistics is a very important part of the logistics industry. It brings great economic benefits to the society as well as some damage to the environment. Environmental problems are also attracting more and more attention. Only by adopting the development mode of “low-carbon” and “environmental” can we achieve continuous and healthy development of the port and create more economic benefits for the society. The article illustrates the concept of port green logistics. By studying the development status of port green logistics in our country, the paper analyzes the factors that hinder the development of port green logistics and puts forward corresponding solutions.

Introduction

With a large amount of greenhouse gas emissions, global warming is getting worse day by day. How to solve this thorny issue has triggered the thinking of people around the world. Human beings are also increasingly aware of the importance of building a “resource-saving and environment-friendly” society. Port logistics industry is a high energy-consuming and highly polluting enterprise, which brings some pressure on the environment. Therefore, it is urgent and necessary to develop port green logistics.

The Concept of Port Green Logistics

Port green logistics is a new concept recently proposed. Compared with the traditional port logistics industry pursues economic benefits, green logistics pays more attention to environmental protection and energy saving. It takes low carbon, energy saving and environmental protection as its core to maximize its environmental protection Ability to limit, the use of advanced technology and scientific operation, to achieve the transport of goods, packaging, loading and unloading, warehousing, distribution and processing of all aspects of green, so that port logistics in the direction of high efficiency, low emissions, low energy consumption direction, To meet the social interests, economic interests, the balance between the interests of the environment, and ultimately the sustainable development of port logistics [1].

Second, the status quo of the development of domestic port green logistics

Today, with the rapid development of economy, the environmental issue has become increasingly prominent. It has become a common challenge of the people of the world. Our ports have also responded positively to the call of “saving energy and reducing emissions.” We have abandoned the concept of pursuing economic benefits blindly in the past to protect the environment and save energy at present, although the development of port green logistics in our country has just started, all aspects are not perfect enough, and are still relatively backward compared with some countries with mature green logistics development. However, in our country With the active exploration and unremitting efforts of the port, the characteristics of port green logistics in some areas have become increasingly evident nowadays and have achieved remarkable results in the process of developing green logistics. Mainly in the following areas:
Structural Adjustment
Qingdao Port has enhanced the quality of science and technology, changed the management mode, accelerated the process of transformation, upgrading and informatization, improved the quality of its staff and vigorously promoted the construction of an environment-friendly and resource-saving port.

Integration of Resources
The integration of port resources to make the cooperation between the ports closer together is beneficial to enhancing the working efficiency of the port and enhancing the competitiveness of the port so that the port resources can be fully utilized and distributed rationally [4]. For example, Fangcheng, Qinzhou, Beihai and other port enterprises in Guangxi have greatly increased the throughput through resource integration [5].

Process Innovation
In order to solve the thorny dust problem, Tianjin Port, as an important port of the South coal north transport, has set up a windbreak system in the yard of coal and ore and effectively controlled the dust pollution problem. Yingkou Port in the new dock, the polluting terminals and non-polluting dock separated from the container terminal oil to reduce emissions of carbon dioxide, Lianyungang by planting dust belt, the residential area isolated from dust pollution, and the ore, Coal and other bulk cargo yard spray anti-dust agent. The dust problem is effectively controlled.

Technological Innovation
Innovation is an important thrust to realize the port logistics greenization. Through the technical innovation and continuous exploration and research, Shanghai Waigaoqiao Terminal Phase 6 successfully developed the shore power supply technology of “plug and supply” Where to go [6] realized the purpose of “smokeless port” and “green jetty”. This technology not only made Waigaoqiao Wharf into the forefront of China's wharf, but also made a good demonstration for the construction of port green logistics in our country. It is also of great significance to China in fulfilling its convention on international climate and setting the image of an environmental power country. The vigorous development of Shanghai Port is the world's largest port of throughput. It is inseparable from being creative and actively studying new technologies [7].

The Factors that Affect the Development of China's Port Green Logistics
In order to cope with the increasingly serious environmental pollution caused by the development of the port logistics industry, various countries have introduced relevant port green logistics policies to make the port logistics industry move toward the goal of sustainable development. Since our port has long focused on throughput Improve and pass through the ability to enhance, did not pay enough attention to environmental protection and resource conservation. China's port green logistics development is late, the process is slow, there are still a series of problems have not been effectively resolved, both in terms of ideas, material conditions, policy guidance and technical means, compared with developed countries, there is still a huge gap . [8] The impact of port green logistics development, mainly in the following factors.

Port Policies and Regulations and Industry System Is Imperfect
The green construction of port logistics needs the joint efforts of the government and enterprises, and requires the government to formulate relevant policies to regulate the development of the port logistics industry. Enterprises also need to pay attention to environmental protection. Due to the government's imperfect enactment of the laws and regulations on harbor environmental protection, the environmental protection supervision of the port enterprises is not enough, so that the enterprises are not active enough in the environmental protection and the responsibility of environmental protection is not strong. Harbor pollution, waste of resources is still everywhere [9].
The Understanding of “Green Port Logistics” Is Vague

Port green logistics is a new mode of port logistics development. Compared with developed countries, domestic understanding and research on port green logistics is not yet thorough. Most port enterprises are not aware of environmental protection and do not have the awareness of pollution prevention first. Are first pollution, and then governance. Due to the lack of propaganda on the concept of port green logistics and the training of harbor employees on green logistics, the “greenness” of port logistics is not significant [10].

The Environmental Protection Infrastructure in the Port Is Backward

Most of the ports in our country were built earlier and did not have sufficient awareness of environmental protection at the beginning of their construction. Due to their long service life, the port facilities were outdated and lacks corresponding facilities for environmental pollution treatment. And China’s environmental protection and innovation technology on port machinery and equipment hardware is not yet widely used, which makes the development of port green logistics still slow [11].

Technical Level Is Not High and Innovation Is Not Enough

In order to speed up the “green” process of port logistics, innovation is the key. Port-based environmental protection innovation technologies mainly include hardware innovation and software innovation. Hardware innovation mainly refers to innovation on ships and port machinery and equipment. Software technology mainly includes logistics information technology, our port should increase the research and development of these two technologies [12].

The Port Is Too Large

In recent years, in order to realize greater capacity of passage and pursue more economic benefits, the port of our country has expanded the port and caused the abuse of the coastline. This not only has greatly wrecked the land resources but also damaged the environment around the coastline.

The Development of Port Green Logistics Strategy

Strengthen the Management of Port Logistics Activities

During the transportation of goods, the port enterprises should choose different modes of transportation and means of transportation according to different situations, reduce the empty load ratio of vehicles, improve the transportation efficiency and reduce the emission of polluting gases. In the loading and unloading of goods, standardize the operation of staff to reduce unnecessary losses, in the packaging of goods, try to use environmentally friendly and harmless green packaging materials. In the process of custody of goods, should strengthen the management of hazardous chemicals.

Change Concepts and Cultivate Green Logistics Awareness

We should cultivate the “green” awareness of employees in port enterprises, increase publicity of environmental protection and resource conservation, raise environmental awareness among the entire port enterprises, and implement the concept of “greenness” in every aspect of port logistics.

Strengthen Government Supervision and Guidance on Port Green Logistics

The development of port green logistics in our country started later and all kinds of bases are weaker. If we want to promote the development of port green logistics rapidly, we must formulate corresponding environmental protection laws, regulations and rules as well as rewards and punishment system. And the government should also strengthen the port Regulatory efforts of enterprises so that they do not slacken in environmental protection work. Waste of resources is still everywhere.
Accelerate the Pace of Innovation and Study New Green Technologies

To study and adopt new green logistics technology is an important thrust to lead the development of port logistics. The government should encourage port enterprises to actively innovate and comprehensively research and develop new green logistics technologies including new material technology, pollution treatment technology, safety and defense technology, waste recycling Technology and so on. Enterprises should pay enough attention to the research of new green technologies and at the same time, strengthen the cooperation and exchange among all port enterprises and learn from each other new technologies [13].

Construct Port Green Logistics Evaluation System

At present, the construction of port green logistics evaluation system is not yet mature enough, and it is necessary to learn from the experience of developed countries to build a comprehensive and systematic assessment system of port green logistics [14].

Cultivate Green Logistics Personnel

At present, the port of our country is short of talent in green logistics. Port enterprises can train employees in green logistics knowledge and improve their professional accomplishment. In addition, port enterprises should cooperate with colleges and universities and research centers that set up logistics projects, Develop the talent they need [15].

Conclusion

With the advancement of the era, the development of port logistics should keep up with the pace of the times. Developing port green logistics meets the needs of the times and human benefits. Although there will be problems and challenges in the development of port green logistics inevitably, as long as the government, enterprises and port employees participate in and cooperate actively, the construction of port green logistics will have a remarkable effect. The development of port logistics will more vibrant [16].

References


