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Study on the Construction of a Common Logistics System in Lake Area of HN

Shijun Yuan
Hunan Modern Logistics College
Changsha, China 410131

***Abstract*—Common logistics has become the objective requirement of sustainable development of local economy, and is the inevitable choice of local logistics development. This paper discusses the common logistics system architecture and the operation mode and strategies of the integrated common logistics on the whole industrial chain from the three levels of infrastructure platform, management system for logistics operation and green security system for common logistics.**

Keywords—common logistics; logistics system; study

I. INTRODUCTION

In recent years, the rapid development of the logistics industry and continuous growth of the total amount of social logistics and added value have been playing a positive role in promoting the regional social and economic development. But at the same time, the development of logistics with unreasonable logistics service mode has also brought certain impact on the ecological environment of this region. Therefore, common logistics has become the objective requirement of the sustainable development of regional economy and the inevitable choice of the logistics development.

II. THEORETICAL BASIS

In order to change the imbalance between regional economic development, environmental protection and resource utilization, the construction of the lake area common logistics system should achieve the goals of symbiosis between logistics activities and the environment, the coordinated development of regional industrial chain and supply chain, and the optimization of the logistics modes of water, land and air and infrastructure systems.

A. Principle of Symbiosis

The symbiosis between the economic development and its natural environment is a necessary condition to ensure the sustainable development of the lake area. Therefore, in the field of logistics operation, symbiosis with the environment is also inevitable. The participants in the lake area common logistics system should form an organic whole with the natural environment; ensure the balance of material, energy and information exchange between logistics operation and ecological environment; focus on the common goal of green logistics service, comply with relevant environmental protection standards, and take into account the economic benefits, environmental benefits and social benefits of enterprises. In this way can the common logistics system be deeply integrated into the whole lake area ecosystem that restricts and influences each other, so as to realize the goal of co-existence and co-prosperity with the natural and social environment of the lake area.

B. Principle of Supply Chain Collaboration

From the perspective of supply chain, there are many participants in the common logistics system of the lake region, including upstream enterprises of the supply chain in the region, such as manufacturing enterprises, commercial circulation enterprises, planting and processing enterprises of agricultural products; the core of common logistics system operation is logistics enterprises; the downstream participants of the supply chain are mainly the demanders of various production and living materials, etc. In order to cope with the competitive pressure brought by other supply chains and the current dynamic enhancement of environmental requirements, the participants of the supply chain must somehow form a network-based consortium to achieve the coordination of the whole supply chain.

The supply chain collaboration of common logistics system in lake area includes three aspects: to realize the coordination of common logistics organization by establishing the core enterprise of common logistics, defining the goal of green common logistics, and changing from "cooperation-game" to "cooperation-integration"; to realize the coordination of common logistics operation through focusing on customer demand, optimizing and reorganizing business processes at the level of supply chain by using green logistics concept and common logistics technology, and breaking the boundaries of individual enterprises; to realize the coordination of common logistics information through the application of Internet, Internet of things and other technologies to achieve the information sharing of upstream and downstream members of the supply chain.

C. The Principle of Co-evolution

Logistics and economic development are complementary, and there is also the relationship of action and reaction between logistics enterprises and the ecological environment. While the logistics system (enterprises) of Dongting lake

area has an impact on the ecological environment, the ecological environment of the region will also act on the logistics system (enterprises). Therefore, in order to survive and develop in this environment, the logistics system (enterprises) have to make changes as the environment changes. That means, in the construction of the common logistics system of the lake region, it is not only necessary to consider whether the upstream and downstream enterprises of the supply chain can adapt to each other and maximize the synergy of the supply chain. Moreover, it is more important to pay attention to the adaptability of each participant in the supply chain to the ecological environment of the lake area and the adaptability of the whole supply chain to the ecological environment of the region. With the competition between enterprises, supply chain and supply chain competition, induction and anti-induction of market selection and market demand, the common logistics system in the lake area gradually realizes the co-evolution between members of the supply chain, between members of the supply chain and the supply chain, between members of the supply chain and the regional ecological environment, between the supply chain and the regional ecological environment, and between the supply chain and the social economy.

III. CONSTRUCTION OF COMMON LOGISTICS SYSTEM

The composition of the common logistics system is multi-level and multi-dimensional. In this paper, the common logistics system of the lake area is divided into three levels: green infrastructure platform for common logistics, green operation management system for common logistics, and green guarantee system for common logistics. Among them, the construction of green infrastructure platform for common logistics in the lake area is on the basis of giving full play to the obvious advantages of the lake region's water transport and logistics infrastructure, to fully integrate road, rail and land logistics infrastructure and aviation logistics infrastructure resources so as to build a green common logistics park, logistics center, distribution center and other logistics nodes with water transport logistics as the core. The green operation and management mode for common logistics in the lake area is on the basis of setting up the development strategy of green common logistics for the coordinated development of lake area ecological environment, to implement the integrated logistics operation model of the whole industrial chain of the lake district, and provide common logistics services including common procurement, common transportation, common storage, common processing and common distribution. The green security system for common logistics in the lake area includes the construction of cooperation mechanism of common logistics service providers, benefit distribution mechanism of supply chain members, green logistics service standard, green logistics laws and regulations, green logistics supervision and constraint mechanism, and common logistics information platform.

IV. COMMON LOGISTICS OPERATION MODE AND STRATEGIES

A. The Green Operation Mode for Common Logistics in the Lake Area

From the perspective of the whole industrial chain of the lake area, this mode requires to give full play to the role of the core enterprise of common logistics (logistics center); to adopt advanced green logistics technologies at home and abroad in the whole process of common logistics, such as common procurement, common transportation, common storage, common processing and common distribution; integrate with the laws and regulations, logistics standards, publicity and education and incentive measures led by government departments based on the recycling and reusing of wastes, waste materials and obsolete materials generated in the process of joint logistics operation. It aims to improve the utilization rate of resources while reducing environmental pollution and high energy consumption.

B. Green Operation Strategies of Common Logistics in the Lake Area

In order to minimize the impact of logistics activities on natural environment pollution, traffic environment and residential environment, and realize the virtuous cycle of the green common logistics system in the lake area, the following aspects must be achieved in the operation of the green common logistics system:

1) Green co-transport and distribution: The concrete implementation of green common transportation and distribution strategy refers to on the basis of full integration of customer resources and goods sources and reasonable layout planning of transportation and distribution infrastructure, using related logistics technology on distribution and transportation, implementing joint distribution in the field of distribution and adopting the combined transportation in the field of transport. The mode of joint distribution should not only limited to the traditional mode of highway vehicle distribution, but also give full play to its advantages of water transport in the lake area. Appropriate ship types can be used to carry out joint waterway distribution, so as to fully achieve the goal of environmental protection and energy saving. In terms of green common transport, the advantage of regional water transport should be given full play to, while land and air transport resources being integrated and combined organically so as to develop common transport services with multiple links, sections and means of transport. This transport mode, on the one hand, maximizes the utilization of transport resources because of the joint transport. On the other hand, through the organic integration of various transport modes, it achieves the effect of direct consignment and realizes the goal of resource conservation and environmental friendliness.

2) The green distribution processing and storage: Since circulation processing has become a logistics service content

increasingly taken seriously by enterprises, to achieve the goal of resource conservation and environmental friendliness, the common logistics system around Dongting Lake can, from the perspective of system analysis, spare no efforts to gather the distributed circulation processing operations among the member enterprises of the supply chain or even the circulation processing operations among different supply chains for specialized processing through resource integration according to the needs of customers. In this way can the scale effect be maximized while waste emissions are being reduced. In addition, the utilization rate of resources can be improved through the processing of the edge and corner residues generated in the process of centralized processing.

The construction of green common storage requires the logistics parks, logistics centers, distribution centers and other logistics nodes in the common logistics system in the lake area with warehousing functions to have reasonable structure; single warehouse node to have scientific planning design and layout; the selection of facilities and equipment accords with the green principle; to provide green storage service by the wide use of storage technology and operation specifications that meet various storage requirements. This will contribute to the harmonious coexistence of the green common storage with its surroundings.

3) Common reverse logistics: The common logistics system of the lake area should not neglect the operation of reverse logistics while attaching importance to the greening and co-assimilation of forward logistics such as procurement, transportation, warehousing, distribution and circulation processing. A large amount of wastes will be generated in the production process of each production enterprise, in the circulation process of commodities of each commercial circulation enterprise, and in the consumption process of each consumer in the region. Although many enterprises have taken a variety of measures to deal with it, but in general, the emergence of a large amount of waste will have a negative impact on society. The lake area should break the operation mode that single enterprise only disposes waste in its own industry and establish a reverse common logistics system corresponding to the forward common logistics in the radiation area. It should collect, classify, process, pack, transport and store the articles that generated in the economic activities within the area of common reverse logistics operation subjects and have lost their original use value, and send them to the special processing place in the common reverse logistics system. It not only practices incineration, chemical treatment or transport to a specific location for stacking and burial out of consideration on environmental protection. More importantly, it also achieves the goal of resource reuse (reuse after recovery and treatment) and recycle (convert into new raw materials after treatment).

V. CONCLUSION

China has clearly put forward that "In face of the severe condition of increasingly tight resources, severe environmental pollution, degraded ecosystem, it's necessary to establish the concept of ecological civilization of respecting, conforming to and protecting nature, give prominence to ecological progress and integrate it into all aspects and the whole process of economic, political, cultural and social development, so as to build a beautiful China and achieve sustainable development of the Chinese nation." Green common logistics is an important way to achieve sustainable development of society. Therefore, from the perspective of protecting the natural environment, it's necessary to apply the basic principles of green and common logistics operation to modern logistics activities in the lake area and strive to build a common logistics system, and constantly carry out logistics technology innovation. Only in this way can the coordinated and sustainable development of ecological economy and green common logistics in the lake area be realized.

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