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Problems and Countermeasures of Logistics in the Marine Fisheries Industry

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Abstract Based on the connotation of marine fisheries logistics, the thesis gives a brief account of its features; firstly, it is more susceptible to natural conditions; secondly, the aquatic logistics is with strong specialized assets; thirdly, the aquatic products market has relative greater uncertainties; fourthly, it calls for higher logistics technology; fifthly, it is difficult to conduct supply chain management. Then the thesis analyzes the problems in the marine fisheries industry: the first problem is the imperfect standardization system of the aquatic logistics; the second is the backward development in the cold storage of the marine fisheries; the third is low information-based degree of marine fisheries logistics system; the fourth one is the low level of the value-added services; the fifth problem is the immature participants in logistics. In order to solve these problems, this thesis further proposes some countermeasure to develop the logistics in the marine fisheries industry: at first, to build various forms of logistics organization entities; secondly, to gradually realize the integration of logistics functions and performance; thirdly, to strengthen the information construction of marine fisheries logistics; at last, to reinforce the government roles in developing the logistics industry of aquatic products.

Key words Marine fisheries, Guarantee system, logistics industry, Supply chain management, China

Marine fisheries logistics goes through the whole supply chain of aquatic products, it is a new-type integration process combining the production, procurement, transportation, warehousing, storage, loading, unloading, delivery, packing and so on as well as cutting down the costs through the delivery so as to provide the consumers with better services. The marine fisheries logistics system consists of three components—logistics participants, logistics channels and logistics functions, under the constraints of a certain system, different participants will choose different channels and adopt different organizational forms to perform logistics functions so as to form specific logistic activities.

1 Features of marine fisheries logistics

The unique natural attributes of marine fisheries distinguish the marine fisheries logistics from the logistics of other commodities and mark it with unique features:

1.1 It is more susceptible to natural conditions The fishing and farming of aquatic products are characterized by regional stability and strong periodicity and influenced by seasons, it is an integration of natural reproduction and social reproduction, which is susceptible to natural conditions and has long production cycle. Therefore, in order to meet the requirements of diversified market of marine fisheries logistics, diverse elements and resources needed in the logistics of aquatic products will be greatly more than that in the logistics of other industrial products.

1.2 The aquatic logistics is with strong specialized assets

Since the aquatic products are perishable, in order to keep them fresh and alive, some effective measures should be adopted in their circulation so that their quality could be guaranteed. As the storage and delivery of aquatic products call for specific containers and equipments, the assets of marine fisheries logistics are more specialized than that of other industrial products logistics. Moreover, restricted by seasons, climate, temperature and other natural conditions, the marine fisheries have longer production cycle and investment recovery period than other industrial products, leaving relative lower asset utilization level of its logistics.

1.3 The aquatic products market has relative greater uncertainties

As the producers and consumers of aquatic products are characterized by large number and dispersed distribution and the market information is extremely scattered, the managers of marine fisheries find it hard to comprehensively master the market supply and demand information as well as the basic conditions of competitors and cooperators, as a result, they could not establish their monopolistic status; since the aquatic products are with strong seasonal characteristics, so when the products are on sale, if there is a large gap between its supply and demand during a short term, then its price will experience violent fluctuations, what's more, the perishable characteristic of aquatic products restricts their cross-regional and cross-seasonal deployment, and increases the risks in the marine fisheries logistics.

1.4 It calls for higher logistics technology

As the fishing and farming of aquatic products are marked with striking geographical features, so in different sea areas there are different aquatic varieties, in order to meet the diverse demands of the consumers, the aquatic products should be transported and delivered among different regions. While due to the perishable na-

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ture of the aquatic products, it calls for higher technical requirements in their storage and transportation so as to keep them fresh and alive, however, even the preservation measures are taken, there will still be a certain percentage of loss, and this proportion will increase rapidly as the time and distance enlarge leading to rising costs. Therefore, the radius of marine fisheries circulation is under great restriction of technology.

1.5 It is difficult to conduct supply chain management

Our wholesale market of marine products is dominated by cash transactions, which is still an original circulation form mixing the trade up with logistics, in the cash transactions the market players are scattered and lack the awareness and competence to manage the supply chain, so they do not often conduct longitudinal collaboration^[1]. As the top and bottom links of supply chain are not closely connected, each component part is in a separated state, which, as a result, weakens the overall efficiency of supply chain. The market information could only be delivered to the source of the supply chain passively, so it is difficult to conduct effective supply chain management.

2 Problems in developing the logistics in marine fisheries industry

2.1 Imperfect standardization system of the aquatic logistics

The perishable nature as well as the fresh and live storage of aquatic products set a higher standard for their storage and transportation. However, our current marine fisheries lack specialized transportation equipments, the storage conditions are poor, the equipment standards of various transportation means are still not unified and the standardization in logistics instruments hasn't yet been carried out. The packaging problem is involved in the fishing, preservation, terminal handling, selection, processing, freezing, storage, transportation, transit and marketing of aquatic products, but due to the low standardization degree of marine fisheries logistics as well as the greater error in the categorization and classification of some products, the packaging of the products lacks unified standards from the packaging materials to the packaging management^[2]; the performance of the aquatic bases in collocating, grading, categorizing, preserving and packing the products is obviously not satisfying; most of the marine fisheries enter the circulation or the final consumption in the form of primary products, meanwhile the logistics system lacks effective management so that the quality of aquatic products could not be wholly guaranteed, seriously affecting the purchase intention of the consumers.

2.2 Backward development in the cold storage of the marine fisheries

The cold storage chain of aquatic products requires the same temperature during the production-transportation-storage-consumption process so that their quality could get guaranteed. Although some of our food distribution companies have made certain achievements in the services of cold storage chain, however, viewed from the overall marine fisheries industry, the cold storage chain of aquatic products hasn't yet got effective development and many aquatic products are lost in the distribution link. The problems in the operation of the logistics lie in: backward technology and high cold store vacancy rate;

obsolete cold storage and transportation equipments which need to be updated; the lack of standardized cold storage and distribution system as well as low efficiency of cold storage and transportation; the management of aquatic products hasn't formed a more complete cold storage chain system^[3].

2.3 Low information-based degree of marine fisheries logistics system

The companies which run a business of aquatic products are usually with small scales, and in the logistics distribution of marine fisheries, the application and penetration degree of modern information techniques are not high, the informatization construction sees obvious backwardness, most of the companies do not possess the capacity to handle the logistics information. The farmers who fish and farm the aquatic products manage on their own without keeping in touch, under such an imperfect information network of marine fisheries, it is very difficult to collect and transmit the information.

2.4 Low level of the value-added services

Our aquatic logistics companies are still in their infancies, their management level is low and scale is small, as a result, leading to their small-scale, narrow-scope and low level of value-added logistic services, which can find its evidence from the packaging, processing and distribution of aquatic products as well as the storage and management of special marine fisheries and other value-added services. Due to its requirement for unique logistics features but the current backward logistics technology, the marine fisheries suffer a great loss and enjoy extremely low added value during their circulation and transportation process.

2.5 Immature participants in logistics

Since the aquatic products market opens up, the aquatic circulation participants present a diversified characteristic; fishermen, individual small business operators, joint business, fishermen collectives as well as state-owned seafood companies and so on get them involved in the circulation of aquatic products. However, fishermen and individual businessmen are all in disorganized state and enter the market individually, so they lack the capacity to compete with others in the market and to protect their own interest. Meanwhile, the number of sea products cooperative organizations is few, and those who take part in the aquatic products logistics are even less, so the task to transport and sell the marine products is mainly committed by individual operators. Although there are some food distribution centers equipped with their own logistics system, the organizational level of the logistics participants in the whole marine fisheries industry is still low.

3 Measures to develop the logistics in marine fisheries industry

3.1 Building various forms of logistics organization entities

In order to change the current situation of the marine fisheries logistics participants, we should focus on organizing scattered and weak fishermen together and improve the organizational degree of their production and sales. The government may encourage the development of fishermen economic cooperative organizations, improve their organizational degree to participate in the circulation, guide them into the aquatic products supply chain and establish a sound channel between the

production and market of aquatic products through the fishermen economic cooperation organizations. The government guides the fishermen to conduct effective integration from the aquatic products production, market information, quality, brands and other aspects, and enhance the status in market as well as improve the capacity to effectively resist the market risks through forming a certain scale of aquatic products production and sales amount. The aquatic products go through the primary processing at the production area immediately after their harvest so as to improve their quality and packaging as well as promote their standardization, a long-term cooperative mechanism is established so as to gradually improve the logistics management level and realize the transformation and elevation of logistics mode. The development of fishermen economic cooperative organizations could effectively realize the extensive production of aquatic products, extend the industrial chain and improve the organizational degree of fishermen.

3.2 Gradually realizing the integration of logistics functions and performance

Modern logistics of aquatic products calls for the integration of each logistics functions, which is realized from different links. The transportation of aquatic products usually needs low-temperature transportation equipments, that is, aquatic products cold chain logistics. The main difficulty of transportation lies in the dispatch and distribution of transportation means as well as the optimization of transportation routes, which at the same time is an important approach to cutting the transportation costs. The difficulty in the storage of aquatic products is how to maintain the quality of the products in the storage process. Once the aquatic products are out of the initial habitats, they will easily lose their vigor and taste. In fact, the frozen sea products have completely changed their original flavor, which will seriously affect the demand of the products. Therefore, the storage of sea food calls for more capital investment and higher technology. Packaging is an important approach to improving the added value of aquatic products as well as increasing their sales and protecting their values. The transportation and handling are inevitable activities in the aquatic products logistics. The rationalization in the transportation and handling of aquatic products is also an important approach to improving the sea food logistics. Transportation and handling require professional team and advanced equipments so as to prevent ineffective handling, reduce the loss in the handling by taking full use of gravity and eliminating the influence of gravity as well as realize scale handling through full mechanical utilization. The circulation and processing are also an effective way to realize the added value of aquatic products, mainly including sorting, packaging, segmentation, measurement, classification, price sticking, label attaching and goods inspection.

3.3 Strengthening the information construction of marine fisheries logistics

The aquatic logistic companies should comply with the requirements of information technology revolution, and adopt the e-commerce platform and digital information technology in the production, storage, transportation and distribution, *etc.* The government should actively encourage the establishment of aquatic products public information and logistics

exchange platform, gradually establish and perfect the market quotation prediction system of aquatic products, does a good job in handling and announcing the sea food information, and provide various information and technical services to aquatic products market^[4]. The aquatic logistics information includes the price information, supply and demand information and logistics environment information. The price information involves the collection, collation and analysis of the historical prices and real-time prices of aquatic products as well as the analysis and prediction of price trends; the supply and demand information is mainly to analyze the equilibrium between the supply and demand amounts of certain aquatic products during a certain period of time. To be specific, the common means to distribute the information of aquatic products logistics is to equip an electronic display at the aquatic products wholesale and retail markets so as to constantly report the purchasing price and trading volume of various aquatic products; the retail terminal of sea products should also record the daily price and trading volume of the products. The computer network should be able to connect each logistics links and logistics participants including fishermen, industry associations, wholesalers, packaging processing companies, retail terminals and so on so as to realize information sharing.

3.4 Reinforcing the government roles in developing the logistics industry of aquatic products

The government could promote the development of the logistics in marine fisheries industry through overall planning, policy guidance, laws and regulation and other means. Unified and rational planning and layout of marine fisheries logistics could prevent the blind investment of logistics companies. To enhance the construction of marine fisheries logistics infrastructure could set a good external business environment for aquatic products logistics companies. The government departments could support the companies from the taxation, traffic control, business management, financing, *etc.*, so as to solve various practical problems of the companies, and effectively regulate the activities of marine fisheries logistics companies and maintain the industrial order through perfecting the laws and regulations of aquatic products logistics and relevant industry standards. The government could also build the roads and bridges, increase the investment in the infrastructure construction of national-level highways, railways, waterways and shipping, and rationally plan and construct the national transport network so as to improve the timeliness of seafood logistics.

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