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Research on the model of the rural supply chain of logistics system and its strategies

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ABSTRACT

Industrialized management of agriculture is an effective way of increasing rural incomes. The essay will begin with the concept of supply chain and supply chain of agricultural products, discuss agricultural produces and characteristics of supply chain, analyze the innovation mode of agricultural supply chain based on supply chain management, and then advance the measures for the establishment of China's agricultural supply chain.

KEYWORDS

Agricultural produces; Supply chain; Agricultural industrialization; Measures.



INTRODUCTION

In recent years, the CPC Central Committee and the State Council attached great importance to agriculture, rural areas and farmers and issued annual "three rural issues" as priority. "output increases while income lingers" has become the biggest problem besetting China's farmers, the bottleneck restricting farmers' income has shifted from production to circulation areas., the low level of agricultural industry supply chain restricts the development of agriculture and increase of farmers' income. The industry supply chain of agricultural products played a pivotal role in the development of the rural economy, and promotion of farmers' income. According to statistics, the loss rate of Chinese fruits and vegetables and other agricultural products on the picking, transportation, storage and logistics chain amounts from 26 to 30%, and more than 1/4 of the agricultural products are consumed in the logistics chain, and the loss rate in developed countries is controlled to be below 6%. The development of agro-industry supply chain not only promotes the smooth flow of agricultural products, but also reduces the cost of agricultural production and circulation costs, realize the increase of value in the process of circulation of agricultural and further promote rural economic development and rural incomes.

THE SUPPLY CHAIN AND THE SUPPLY CHAIN OF AGRICULTURAL PRODUCTS

Representative definition of supply chain: supply chain pivots on the core business, and through the control of information flow, logistics, capital flow, make intermediate products and final products starting from the procurement of raw materials, and send final products to consumers by the sales network in the hands of the suppliers, manufacturers, distributors, retailers, and the end-users which together form an overall functional network chain structure. Implementation of the supply chain is to link all suppliers, manufacturers, distributors, retailers and so on, which are in one chain and to optimize it before handing production materials to consumers in need with the fastest speed and through the production and distribution process, which make them value-added products.

Agricultural supply chain is defined as: the interlocking chain from the acquisition, processing, transportation, distribution and eventual delivery of agricultural products to customers. Agricultural supply chain is supply and demand networks involving upstream and downstream farmers, manufacturers, wholesalers, retailers and final consumers who are responsible for providing the final consumers with agricultural products or services. In general, there are mainly three methods to build the supply chain of agricultural products, namely through market, vertical integration and strategic alliances. The core enterprise in the supply chain of agricultural products can be enterprises or organizations in different regions, of different nature and different types with core competitiveness and capacity of management and organization, including agricultural wholesalers, processing enterprises, supermarkets, foreign trade enterprises, logistics enterprises. Only when other businesses deems joining the supply chain as profitable can the supply chain extend and develop. Thus, the structure of the agricultural supply chain can simply be displayed in the model shown in Figure 1.

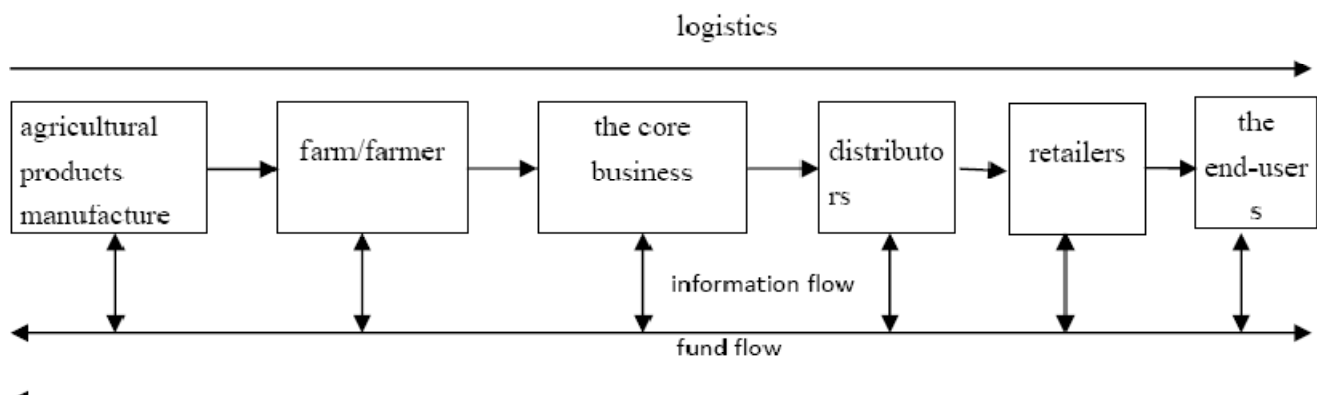


Figure 1 : Agricultural products supply chain structure model
THE SUPPLY CHAIN OF AGRICULTURAL PRODUCTS AND ITS CHARACTERISTICS

Many features of the agricultural products entitle the supply chain of agricultural products with several characteristics different from those of the industrial supply chain:

Perishables of fresh agricultural products

In circulation, certain measures must be taken to ensure the quality of agricultural products to enter consumption. Agricultural products in circulation, for example, require classification, processing, sorting, etc; during the process, part of the agricultural products storage and transportation needs specific containers and equipment, such as the need for dedicated equipment for dairy products logistics. In addition, limited by season, climate and other natural conditions, agricultural products production cycle compared with manufactured goods is much longer, and investment in agricultural production has a longer payback period, firms enter and leave the resistance is bigger, so the circulation of agricultural products is more productive than industrial products circulation and has better asset specificity.

High market uncertainty

Dispersion of the agricultural production and consumption makes the market information very scattered, difficult to fully grasp the market supply and demand information and competitors, and partners' information; strong seasonal agricultural production, agricultural products listed as if in a short time is difficult to adjust, which can make the market price fluctuations bigger, in addition of fresh agricultural products perishables limits the agricultural products between across different regions and seasons timely adjustment, that makes the agricultural products supply chain more risks. Spread in the face of such farmers market is difficult to grasp, often in the market giving the wrong signal and the local government under the guidance of the wrong judgment of the market blind production, resulting in agricultural products difficult to "buy" and "hard sell" phenomenon which occurred alternately. On the one hand, market uncertainty and increasing the transaction cost, and on the other hand they increase the tendency of opportunism in the integration of supply chain.

The disequilibrium of market forces

Farmers in the developed countries, such as the United States, are usually land owners, but our country is based on the household management of small farmers, and most agricultural products are produced by scattered farmers, which is relative to other market main body while scattered farmers market strength is still very weak. In small farmers as the main body of the country, if there is no "leading enterprises or joint self-cultivated farmers in cooperative organizations", the agricultural management integration is just empty talk.

Agricultural products' supply chain of logistics demand is higher

Since the agricultural production is regional, and people's demand is diverse, it is necessary to trade flow between different areas and farms with fresh perishable nature. However, even if adopted the preservation measures, there will be a percentage of the loss, and the proportion will increase rapidly with time and distance increased, make the circulation costs a lot, this limits the agricultural product circulation radius. Especially the fresh agricultural products, the higher request for logistics distribute, and this difference obviously interests the logistics distribution works. To improve the level of agricultural products logistics, we must implement the specialized logistics management, reduce the

supply chain of agricultural products, and the technology integration of the supply chain of agricultural products is also demanded.

BUILDING SUPPLY CHAIN INNOVATION MODE BASED ON SUPPLY CHAIN MANAGEMENT OF AGRICULTURAL PRODUCTS INDUSTRY

Supply chain management and supply chain management of agricultural products

The typical definition of supply chain management: supply chain management refers to the supply chain logistics (include reverse logistics) of network system, information flow and cash flow plan, organize, coordinate, control and optimization, and to maximize the total value of supply chain to produce.

Our agricultural products supply chain management can be defined in a variety of technologies, in particular, which is based on information technology, the establishment of a strategic partnership in supply chain nodes, from raw material suppliers, manufacturers, distributors, retailers until the final customers of business flow, logistics, information flow, cash flow throughout the supply chain on the unobstructed circulation and ultimately achieve a win-win situation. Agricultural products supply chain management ideas in the field of agricultural products from the production, the circulation field to consumption field transfer process, and there are core organizers and managers of enterprise acting as the supply chain, through the core enterprise combining production and consumption of agricultural products.

Agricultural supply chain management focus on strategic alliances, team management, information sharing, core competitiveness and customer-driven, the pursuit of the organic integration within the system, the complementary of interests and optimal allocation of resources, in order to achieve a variety of agricultural products, adapt to maximize the quality, quantity and price market. The implementation of the two-way flow of agricultural products supply chain management, on the one hand can enhance the trust between the various aspects to improve information by the improvement of the level of cooperation between the various aspects, help producers understand the market demand, and the market demand for products, reduce uncertainty and transaction costs and production costs and improve efficiency. On the other hand, the implementation of supply chain management can better meet the needs of consumers, improve the quality and safety of agricultural products, build and enhance the reputation of the brand, product value-added. To create an efficient integrated agricultural supply chain, a well-established supply chain organization mechanism is required, that is, to establish a relationship of mutual trust organizations between the members of the supply chain partners to maximize the overall interests of the supply chain.

Agricultural industry supply chain innovation model based on supply chain management

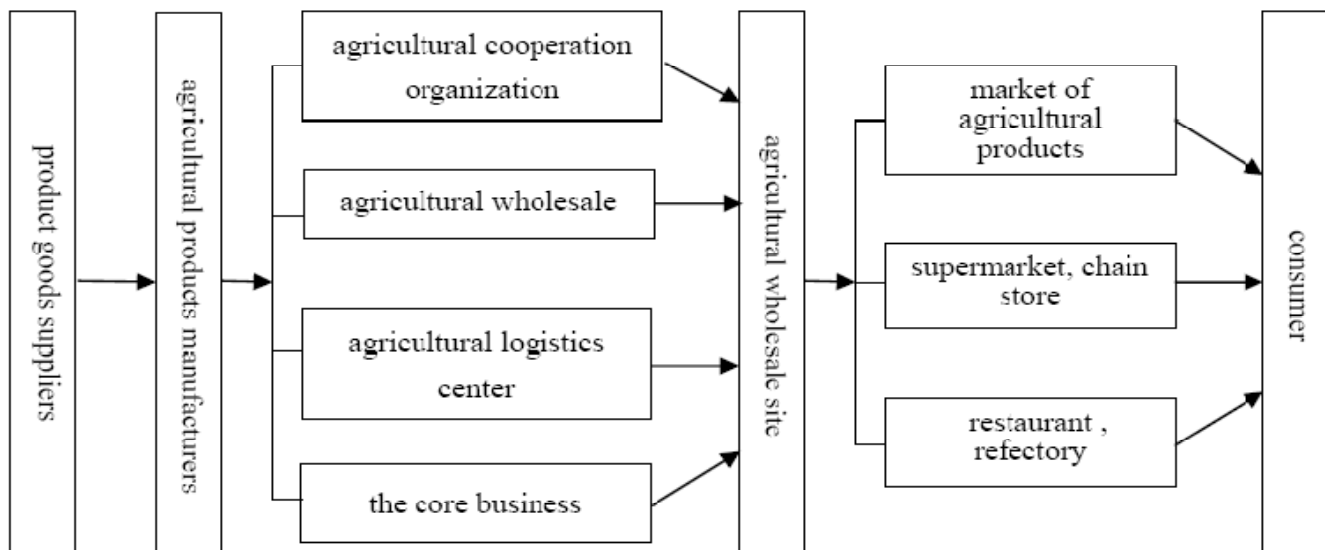


Figure 2 : The model of the rural Supply chain of logistics system

On one hand, only by establishing a rational supply chain of agricultural products, improving the degree of organization of farmers, building a more stable relationship between production and sales can millions of households in small-scale production be connected with the ever-changing market docking, and enhance the ability to respond to market risk; On the other hand, agricultural products after commercial processing will be able to better realize the value of the product, or even on the basis of the original value to a multiple of the value-added, which will largely promote the farmers to increase agricultural production, promote agricultural production, processing and sales of modernization. Therefore the establishment of agricultural products supply chain model based on supply chain management is a top priority.

Rural cooperative organizations as the center of the supply chain model

Rural cooperative organizations are mutual economic organizations, which are based on Household contract management. In this case, farmers produce similar agricultural products for the common economic interests in production technology, capital, buying and selling, processing, storage and transportation and other sectors, in accordance with the voluntary entrance, back to freedom, democratic management principles formed the implementation of independent accounting, self-financing. Purchase of the bulk of agricultural production and the scale of agricultural sales and other services it can offer its members dispersed family-run joint scale operation, thereby reducing the transaction costs of family-run, family-run competitiveness, in order to adapt to the market economy conditions and modernization of agricultural production and social needs. They can also overcome the contradiction between production and big market, big logistics. Agricultural cooperative organizations are of great significance to the development of modern logistics of agricultural products.

Agricultural cooperative organizations in the European Union are well-developed. States through the organizational structure of agricultural cooperatives, agricultural unions, agricultural companies and agricultural expertise Association, for the majority of farmers to provide prenatal, delivery, postpartum associated supporting warehousing, transportation and sale of a wide range of services and economic cooperation, the formation of with a certain capital strength, with considerable operating capacity and scale of operation of market competitors, agricultural logistics integration and economies of scale.

Wholesale market as the center of the supply chain model

This model is dominated by agricultural products wholesale market participants mainly agricultural producers, wholesalers and retailers. Agricultural products wholesale market is established and developed on the basis of fair trade, it has two levels: First, as the wholesale market of agricultural products distribution center located in rural towns, and its main function is to establish a trading platform for agricultural producers and intermediary organizations. Second, as agricultural products wholesale and retail and distribution sales to the wholesale market in the city, its main function is to agricultural wholesalers and distributors, retailers to establish a trading platform. Producers will produce agricultural products shipped to the local wholesale market sales, wholesalers in origin acquisitions, transported to reach a certain number of sales to wholesale distributors and retailers of the city from the wholesale market wholesale back sales in the retail market or other forms of retail terminal.

Logistics Center (logistics parks) as the center of a supply chain model

The integrated circulation patterns logistics center of agricultural products (or logistics park) through the base, farmers or other intermediary distribution organization links, the formation of agricultural production, acquisition, processing, storage, preservation, sales and distribution and the provision of market information.

The logistics center of agricultural products (logistics parks) as the center of the development of agricultural product logistics model is based on intensive agricultural logistics activities, the idea of integration. Supply chain, includes not only the information flow, business flow, capital flow the three basic aspects, but also the processing, packaging, storage, transportation, distribution and many other logistics activities, and to improve and enhance the level of logistics technology and management. Therefore, the expansion of the distribution function of the wholesale market of agricultural products, agricultural intermediary organizations intensive functions, the establishment of agricultural logistics center (or logistics park), intensive agricultural logistics, integration, scale is one of the effective ways to achieve agricultural development of modern logistics

The supply chain model centering leading enterprises.

The circulation of agricultural products meeting the change of modern needs, a group of real strength of the agricultural production and circulation leading enterprises must be cultivated. This model is dominated by leading enterprises (mainly refers to the agricultural products processing enterprises). As part of the agricultural supply chain, it is connected to producers of the agricultural primary raw materials and the agricultural products wholesale and retail enterprises which is ultimately connected to consumers, some leading enterprises of agricultural products even set up their own retail stores, directly facing consumers or foreign imports commercial organizations.

ESTABLISH COUNTERMEASURES OF CHINESE AGRICULTURAL INDUSTRY SUPPLY CHAIN.

Strengthen the government's macro overall planning

Government should strengthen the overall planning, optimize the industrial structure, create a relaxed and modest environment, ensure that the operation of the market gradually move to standardization, legalization, science, and give full play to the advantage of the supply chain. By accelerating the pace of opening to the outside world, the government should encourage the contact and cooperation with the field of international agricultural logistics in the aspect of logistics, distribution technology, education, management consulting and ect, and import advanced agricultural logistics technology and management methods. it should establish modern agricultural logistics technology system based on information technology as the core, agricultural information technology, storage technology, packaging technology as the support. Realize Chinese agricultural products logistics

operations' mechanization, automation and computerization, shoulder the responsibility, guide and manage people in accordance with the law, protect the "three agricultures". Study and make the planning and implementation measures of building agricultural logistics and supply chain management system as soon as possible.

Establish a high level of agricultural products logistics center combined with the actual situation of each region.

Chinese agricultural products distribution market is still in its infancy, and has poor management, poor comprehensive service capabilities, market with storage, processing and the capacity of developing and utilizing of information is few. In addition, due to the vast territory of China, the conditions of different regions vary greatly. So the government, by learning from the experience of Netherlands establishing a comprehensive, professional logistics center, establish a variety of agricultural transit stations and distribution centers according to the actual situation of the, to promote the establishment of agricultural products logistics center.

Give full play to the effect of industry executives and market-oriented.

Operate agriculture as a complete basic industries and competitive industries. all agricultural logistics activities and agricultural supply chain link points (nodes) enterprises (including individual farmers), shall face the market openly, fairly, and operate transparently ; put the information of price, efficiency, effectiveness and market as a guide to action in order to achieve close docking of agricultural production and markets, forming the operation pattern of large-scale production, large companies, big circulation, market integration.

Speed up the process of standardization, improve the logistics of agricultural products preservation technology

First, standardization of logistics. In the link of packaging, transport and handling and other aspects, the government implement the standards which is in line with internation in the aspects of logistics facilities, logistics tools so that to it could achieve the rationalization of logistics activities. The second is the standardization of agricultural products. It needs to establish and improve the standards of agricultural products quality and the standards of control and inspection of agricultural products quality control inspection standards, making preparation for auction of agricultural products and e-commerce. The third is to strengthen the research and development of agricultural products logistics preservation technology, storage and transport agricultural products properly, achieve timely and smooth logistics to ensure fresh agricultural products is on sale

Improve the infrastructure of supply chain operations

Under the influence of the supply chain management, as to the processing of agricultural products, we should not only consider the impact of the internal factors of production, but also consider the impact of the supply chain to the product cost and service ;regard suppliers, vendors, and agricultural enterprises as a whole ; integrate industrial chain based on agricultural production, make great efforts to cultivate agricultural industrialization leading enterprises, forming comparative advantages and core competitive advantages and promoting that it takes timely purchases; establish strategic partnerships with suppliers and vendors, realizing the modern, intensive, enterprising, lean development of modern agricultural.

Cultivate and expand the body of agricultural products logistics.

Transform, nurture and expand the body of agricultural products logistics through institutional innovation, making it play an important role in the development of agricultural products logistics. Third-

party logistics has an enormous social benefit. It can integrate many idle logistics resources in the society and improve the overall efficiency of logistics. The effect is very obvious through the way of third-party logistics enterprises integrating the logistics market of agricultural products. Through Professional operation by the third-party logistics, it can reduce a lot of unnecessary intermediate links in the circulation of agricultural products, reducing circulation costs.

Introducing advanced network technology, establishing the logistics supply chain of agricultural products

Agricultural supply chain management is depend on information technology, information sharing is the key to supply chain management. Create and take full advantage of the Internet information network of agricultural products for farmers and agricultural products to the market to provide an information platform to shorten the supply chain of agricultural products. Information is the nervous system of the logistics of agricultural products, from prenatal, delivery and postpartum storage, transportation, processing and sale of every aspect of logistics information should be dealt with in a timely manner, in order to respond to market changes. Learn from the experience of the Netherlands, suppliers, manufacturers, farmers, wholesalers, retailers, by modern computer Internet connection, the formation of modern agricultural supply chain, logistics companies on all aspects of the supply chain, the virtual and the actual operation, the completion of the customers online order the required logistics activities. Web visitors can share information on the supply chain, information transparency, accuracy and timeliness of improved agricultural supply chain more active and timely manner to improve logistics planning, management, deployment, and preferably, in operation, to the various regions of the country as well as our customers and consumers in many countries around the world to provide quality services.

Keep connection with the international standards actively to strengthen agricultural education and training of logistics personnel

Professionals in the logistics industry in the Netherlands must pass the examination can only get the vocational qualification certificate issued by the state official in the logistics industry, in order to ensure the standard of the Dutch high-quality agricultural products logistics supply chain management and consistent. On the one hand, experience in the Netherlands, should be in tertiary academic settings, give logistics education a certain position to carry out the logistics professional courses; On the other hand, you should also encourage the development of multi-level logistics education and training, implemental logistics professionals professional certification, and develop the agricultural logistics vocational education actively, train existing logistics practitioners.

CONCLUSION

In order to improve China's agricultural supply chain, there must be a modern flow of business, supermarkets, logistics and distribution, transportation, information, warehousing and other aspects of professional management companies. Farmers have the access to various aspects of the supply chain, in order to enable farmers from the processing of agricultural products and trade share interests. Improve the market-oriented business organization, combine agricultural enterprises and supply chain, improve the efficiency of agricultural production, reduce production costs, establish a reasonable agricultural products supply chain system in order to achieve the added value of the agricultural products in the circulation process.

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