

Analysis and Development Countermeasures of Farm Produce Cold- chain Logistical China

Liurui LI

Economics and Management Collage, Chongqing Jiaotong University, Chongqing, CHINA

Abstract: This article through analysis the current situation of farm produce cold-chain logistical in China. According to the background of the times, the development countermeasure of cold chain logistics of Chinese agricultural products has been put forward, hope to be able to provide help for the development and transformation of agricultural and cold chain logistics in China.

Keywords: Farm produce Cold-chain logistical; Current situation analysis; Development countermeasures

1. Introduction

With the development of economy, the people's living standard has been improved, The demand for agricultural products has increased dramatically, and requirements for quality have been improved. Fresh, green, health has become one of the three main factors in the purchase of food. The opportunities will be brought to the transformation and development of agriculture in our country. The development of farm produce Cold-chain logistical in China started late, Logistics network system is not perfect, information level is low, the convergence of every link is not tight, these problems lead to agricultural products loss seriously in circulation process. According to the data displayed, which from National Development and Reform Commission data, the loss of fresh fruits and vegetables in China will cost 100 billion Yuan above every year, accounting for 20% ~ 30% of the total fruit and vegetable, loss of the total amount is highest on the top of the world[1-2],the number has been able to meet the needs of hundreds of millions of people. Because of the perfect cold-chain logistics system, the loss rate of the processing and transportation of fruits and vegetables in the United States accounts for only 1%-2%[3] of the total amount of fruits and vegetables. The development of farm produce cold-chain logistical in Japan is more mature, advanced nature is in the forefront of the world, various types of cold storage to meet the needs of all kinds of agricultural products circulation[4], this provided the guarantee for the development of agriculture. Thus it can be seen there is still a lot of profit space to be excavated in Chinese farm produce cold-chain logistical and the development of it has great significance to the development of agriculture in China

2. The Introduction of Farm Produce Cold-chain Logistical

2.1. The concept of farm produce cold-chain logistical

Farm produce cold-chain logistical refers to fruits, vegetables, meat and other items in the production, storage, transportation and marketing, to the consumption of each link has to been in low temperature environment, it's a system engineering which to ensure the quality of goods and performance[5]. It is made up of four aspects which are frozen processing, frozen storage, cold storage, transport and distribution, refrigeration sales. Cold-chain logistics needs comprehensive consideration of production, transportation, marketing, economic, technicaland some other elements, and coordinate the relationship between the elements to ensure that the perishable and fresh food during the processing, transportation could preserve and increase the value. The applicable range of Cold-chain logistics including vegetables, meat, aquatic products, dairy products, frozen food and so on.

2.2. The characteristics of farm produce cold-chain logistical

(1) The chain of farm produce cold-chain logistical is wide and short. Due to there are multiple participants in the agricultural products supply chain and the space range is large, thus form the more complicated logistics chain. Also because of the fresh agricultural products has strong timeliness, resulting in a short time span during the supply process of farm produce cold-chain logistical. (2) Compared to the traditional logistics, the chain of Agricultural cold chain logistics system has a long return period, large investment, market demand is volatile, low rate for fixed assets and operating costs are relatively

high. Because of the higher requirements of the farm produce cold-chain logistical for every link of technology and facilities, it is difficult for the management and operation. The marketing of fresh agricultural products both dispersed is unbalanced, prices are greatly influenced by external factors, make the supply relationship unstable, these are the causes of agricultural products cold chain logistics cost higher.

(3) With high informatization technical support. Due to farm produce cold-chain logistical requires the lean, responsiveness, also because there are more participation main bodies, which make a high uncertainty of the information on the supply chain, in the process of logistics also need to use modern information technology for JIT monitoring and product tracking[6].

(4) The monitoring involved widely subjects. The cold-chain logistics chain related more disciplines and has a large span. Not only need the storage of the process of traditional logistics, transportation and so on, also the all kinds of cold chain logistics technology such as refrigeration, temperature control, as well as in food fresh-keeping technology as support. So, which is a multidisciplinary also wide range of disciplines.

3. The Present Situation of Farm Produce Cold-chain Logistical in China

3.1. The market of cold-chain logistics is improved, but the development level remains low

With the development of the Electronic Commerce, the rural electronic commerce in our country has also been benign developed, many farmers change the traditional way of sales into selling agricultural products on E-business platform, in this way to save the intermediary link, the agricultural products directly from farmers to consumers' hands. The quality of products and immediacy will be improved in principle, but due to farm produce cold-chain logistical development in China that lags behind the whole agricultural market appears "scattered, disorder and poor". Distribution of scattered, namely logistics provider on the service quality and efficiency cannot meet the demand of customers, the whole farm produce cold-chain logistical market shows chaotic, high cost, eventually led to the agricultural market service quality is poorer.

3.2. Cold-chain logistics network construction is invested, but not tight cohesion

During the process of farm produce cold-chain logistical development in our country, we devoted large investment in the construction of cold-chain logistics network system, but due to the lack of standardization and the normative what makes each link cohesion is not quite close, mainly displays which in the process of agricultural products of circulation should be completely under low

temperature environment strictly, but during the process of loading and unloading, handling, transportation, due to the lack of standardized facilities and to save the cost and make a non-standard operation, caused in the process of circulation of farm produce cold-chain logistical link cohesion is not close, the attrition rate is higher. According to statistics, Chinese agricultural products in the entire history of the circulation loss rate is as high as 25% - 30%, while the developed countries can control the number below 5% [7].

3.3. Cold-chain logistics infrastructure is under construction, but it's still woefully inadequate

The infrastructure construction of Chinese farm produce cold-chain logistical is further improving. According to incomplete statistics, there are nearly 20000 cold storage our country, about 1910 mechanical refrigeration train vehicles, refrigerated ship tonnage of about 100000 tons, about 20000 cars in mechanical refrigeration, container production capacity has reached 1 million units per year at present. But the cold-chain logistics infrastructure is still inadequate, the main reason is that China's cold-chain logistics infrastructure distribution is much too scattered, and the construction of the relatively small size, especially for Midwestern agricultural cold chain logistics infrastructure resources are scarce. At the same time, the key of logistics nodes and the cold storage, cold storage facilities are seriously scarce. That becomes a big obstacle in the development of agriculture in China.

3.4. The situation of cold-chain logistics development is good, but the system is not sound

There are already some core competitiveness of cold-chain logistics enterprises in our country at present, such as COFCO, etc. Some enterprises of the food production and processing which are thorough logistics business restructuring the independent accounting to establish the cold-chain logistics companies, such as Jinmiu, Yili, etc. In addition, some large chain commercial firms are also complete the cold chain management and fresh food distribution services, such as Yurun, etc. All these marked the cold-chain logistics in our country presents shows the good development momentum. But, there is not perfect cold chain logistics system in our country, our country although has issued documents of the law about developing agricultural products cold chain logistics, but there is no perfect legal constraints to agricultural products cold chain logistics, so the logistics market is relatively chaos, separation system needs construction.

4. Development Countermeasures of Farm Produce Cold-chain Logistical in China

4.1. Increase the intensity of E-business and agriculture integration, achieve industrial linkage development

Increase the integration of agricultural and E-business, government establish the cold-chain logistics platform, on the one hand, build the infrastructure of agricultural products cold-chain logistics to the needs of enterprises, by this way, improve the use ratio of cold chain logistics' facilities, standardization the market of farm produce cold-chain logistical, attract E-business enterprises settled in the local business, to achieve a "win-win" situation. On the other hand, government empower to the enterprises, which has special needs, and to encourage the enterprises with sufficient funds to build cold-chain logistics facilities, driving the development of cold-chain logistics and agriculture by E-business, enhance the integration efforts of E-business and agriculture, realizing industrial linkage development.

4.2. Optimize the information network of farm produce Cold-chain logistical, adopt JIT distribution mode

Optimizing logistics and information flow network system, choosing the mode of "base-supermarket" and increasing cooperation between supermarket chain and agricultural products is a method which from the base direct distribution to the chain store could omit intermediate links. This way reduces the intermediate circulation link and consumption[8]. At the same time, it is important to establish information network to realize data sharing and to master the distribution of the logistics center and the chain stores to ensure the timely supply of goods. This method can not only reduce the inventory and cost, but also fulfill JIT distribution, reduce the risk of out of stock, ensure the quality of agricultural products, make the full use of function of data age.

4.3. Improve the convergence ability of cold-chain logistics, construct network system in cold-chain logistics area

Currently, in China, the development of farm produce cold-chain logistical is still not perfect, has not formed a perfect network system, cause the convergence of each link is not close enough, this is an important reason for the serious loss of agricultural products in circulation, the fundamental way to solve this problem is to planning and improving the construction network system of cold chain logistics[9].By this way, eliminate the useless link of cold chain logistics process, step by step, so that the links form a good convergence.

4.4. Accelerate the construction of cold chain logistics facilities, promote the development of cold chain logistics mode

In China the one of the main drawbacks of cold chain logistics is the serious shortage of infrastructure. Strengthen construct the regional cold chain logistics facilities, can standardize the cold chain system and ensure the

agricultural products into the cold chain in the fields. On the one hand ,more investment was needed to in science, improve the modernization level of farm produce Cold-chain logistical equipment, ensure that fresh and cold food can be kept under low temperature, in order to improve the quality of agricultural products[10]. On the other hand, exploit and expand the technology of fruit and vegetable packing and preservation, to reduce the loss rate in circulation of the agriculture products.

5. Summary

Generally, in China under the trend of economic "new normal", the development of logistics will more and more mature, at the same time, cold-chain logistical will step into the high-speed development stage, form the farm produce cold-chain logistical model which suitable for agriculture development. This is a strong driving forces to the economic transformation and upgrading of Chinese agricultural economy under the "new normal". I believe, the development of farm produce cold-chain logistical will lead the road of agricultural more and more wide, driving agriculture on the road of benign development farther and farther. Meanwhile, bring more health and green food to people's life.

References

- [1] Wang Wensheng. Opportunities and challenges the fruit andvegetable cold-chain logistics faces during the twelfth five-year plan in China[J]. Storage and Process, 2011, 11(3) : 1-5.
- [2] Bu Mei. Comparative study onfarm produce Cold-chain logistical in domestic and overseas[J]. Logistic Engineering and Management, 2011, 33(11): 33-35.
- [3] Epperson JE,Estes EA. Fruit and vegetable supply-chain management, innovation and competitivenesscooperative regional research projects. Journal of Food Distribution, 1999,28 (30),38-43.
- [4] Ting P. S,Chung K. J. Inventory replenishment policy for deteriorating items with a linear trend in demand considering Shortages. International Journal of Operations and Production Management, 1994'14(8):102-110.
- [5] Chen Lei, Duan Yali, Hai Feng, et al. Comparison of Development of Farm and Sideline Products Cold Chain Logistics in China and Other Countries [J]. Logistics technology, 2012, 31(2): 9-12.
- [6] Zhao Yingxia.Development Countermeasures offarm produce Cold-chain logistical in China [J].Journal of Harbin University of Commerce, 2010(2).
- [7] Zhang Jianjun,Yang Yanling,et al.Research on the current situation and development trend of farm produce Cold-chain logistical in China[J].Logistics technology, 2013(2):102-105
- [8] Long Liang.Research on the management of fresh agricultural products in supermarket chains [D],Hunan Agricultural University, 2005.
- [9] Sun Chunhua. Analysis on the present situation and development countermeasures offarm produce Cold-chain logistical in China [J]. Jiangsu Agricultural Science, 2013, 41(1):395-399.
- [10] Sun Hongju.Analysis on the farm produce Cold-chain logistical [J]. Logistics technology, 2009, 2(3): 34-35.