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Bottleneck on Supply Chain of Organic Agricultural Products and Countermeasures

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Abstract Organic agriculture is one of successful models of low-carbon agriculture, and plays an important role in alleviating and adapting to climate change. However, the development of supply chain of organic agricultural products lags behind, which seriously restricts development of organic agricultural product market. In this paper, major models and bottleneck of supply chain of organic agricultural products are analyzed, and finally countermeasures are put forward.

Key words Organic agricultural products, Low-carbon agriculture, Supply chain, Cold chain logistics

1 Introduction

Global climate change poses a serious threat and challenge to agricultural development. Low-carbon transition is inherent requirement for sustainable development of China's agriculture. Organic agriculture is one of successful models of low-carbon agriculture, playing an important role in alleviating and adapting to climate change. However, the development of supply chain of organic agricultural products lags behind, which seriously restricts development of organic agricultural product market.

The supply chain of organic agricultural products refers to all sections of organic agricultural products from producers to consumers, including transportation, packaging, circulation, processing, handling, loading and unloading, storage and delivery, *etc.* The division of models of supply chain has different standards. According to position of core enterprises in the supply chain, the structure of supply chain takes on three types: manufacture-oriented, carrier-oriented and retailer-oriented.

According to the existence of intermediate link, the supply chain can be divided into zero-tier supply chain system, one-tier supply chain system and two-tier supply chain system. In the zero-tier supply chain, agricultural product manufacturing enterprises sell products directly to ultimate consumers through their own sales departments and exclusive shop. In other words, production and marketing are integrated, which is favorable for reducing intermediate links, reducing cost and sales price, and making concessions for consumers. One-tier supply chain system includes one-tier intermediate mechanism, such as chain store, supermarket, and other grass-roots retail divisions. Two-tier supply chain system includes two tier intermediate mechanisms, such as wholesaler and retailer, or agent and retailer.

Different tier supply chain system has different advantages. In general, zero-tier supply chain system is favorable to directly facing consumers, guiding consumption demand of organic agricultural products, helping promote organic agricultural products, effectively solving problems of consumers about quality, price and use, avoiding exorbitant charges of intermediate traders, saving circulation cost and making concessions for consumers. The multiple tier supply chain system can effectively solve popularization of organic agricultural products and expand market share.

2 Development model of supply chain of organic agricultural products

In actual life, the classification of China's organic agricultural product marketing channels with supply chain terminal as basis can better reflect current situations of China's organic agricultural product market. The marketing channels of China's organic agricultural products basically have formed four development models. (i) With chain supermarket as supply terminal; (ii) With exclusive shop as supply terminal; (iii) Online (including telephone) marketing; (iv) Direct sales like group purchase and hotel. These four systems have advantages and disadvantages, and complement one another.

2.1 Marketing channel with chain supermarket as supply terminal At present, most large stores and supermarkets, such as Carrefour, Wal Mart, Scitech and Lufthansa, have special counter for organic foods. Organic agricultural products sold in supermarkets are mainly organic vegetables and coarse grain, and some organic fruits. Operation mode is that organic product manufacturers or distributors sell products in stores. In this mode, the operating cost is high. Marketing channel with chain supermarket as supply terminal is the main channel of organic agricultural products. Successful enterprises include organic farms and Liuminying ecological farm, *etc.*

Advantages of supermarkets include large volume of the flow of passengers, most consumers being home shoppers and having high pertinence in buying agricultural products. Besides,

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special counter for organic agricultural products plays a significant role in product propaganda and popularization. Disadvantages of supermarket channel include high shop-entry charges, high consumption of organic vegetable (up to 30%), various promotion fees, festival service fees, and poster fees. In this situation, most organic product counters have difficulty in making profits.

Although the sales volume of organic foods is rising in supermarket, it only takes up a small portion in the total sales volume. For example, in 2009, Wuhan Zhongbai Chain Warehouse Supermarket sold organic vegetables, coarse grain, dry foods and honey for 167 700 yuan in total, 82% over the same period last year. Nevertheless, this only accounts for 0.1% of total sales volume of food products. With such low sales amount, it is difficult to ensure stability of marketing channel of organic foods.

Organic agricultural products belong to credence products, so the brand awareness is of great significance to organic agricultural products. In this marketing model, low sales volume and high shop entry charges lead to difficulty in opening sales channel and realizing profit. Generally speaking, it is difficult to build a brand through supermarket, and it will take a long time to realize the brand effect. The success of Liuminying ecological farm and organic farm is mainly benefited from their higher social popularity.

2.2 Marketing channel with exclusive shop as terminal

In developed countries, exclusive shop of organic products is a major marketing channel of organic agricultural products. However, this channel hasn't become a major channel of organic agricultural products in China. In 2000, domestic market was formally launched. At this time, the production of organic agricultural products has reached certain scale. Some producers always make great effort to explore domestic market. Previously, China's organic agricultural products mainly satisfy the demand of export. Domestic agricultural product market is promoted by the production at first. Therefore, most exclusive shops of organic agricultural products have their own production bases of organic agricultural products, such as Lohao City in Beijing and Planck in Nanjing. Their products come from self production and purchase. There are generally three types of logistic process. Firstly, self production base → transportation → warehousing → exclusive shop; secondly, production base → purchase → transportation → warehousing → distributor → exclusive shop; thirdly, production base → transportation → warehousing → producers go to shops and conduct promotion.

Organic product exclusive shops have the advantage of obtaining trust and approval of consumers. In this situation, through experience of consumers and promotion activities of exclusive shop, it is easier to cultivate loyal consumers. However, when the sales volume is small, operation cost of exclusive shop will be high. At present, most exclusive shops of organic agricultural products have small sales volume, and there is still no scale and benefit.

Organic agricultural products belong to credence products, thus the exclusive shop is the most effective form to gain trust

from customers. Through dealing with exclusive shops for several times, customers will gradually form a sincere "cooperative mechanism". However, for a single exclusive shop, it is difficult to achieve scale and benefit. What's worse, the cost for purchase and logistics is relatively high. The preferred method is to establish chain exclusive shops, to realize scale merit and raise the competitive power. At present, medium and small exclusive shops are appropriate.

China's organic agricultural product market still remains at early stage of development, and the consumer group is small. In sales radius of organic exclusive shops, customers are limited. Therefore, it is difficult to support operation of large exclusive shops, while small ones have difficulty in gaining scale merit due to high cost for logistic delivery and warehousing. In this situation, most organic exclusive shops do not sell solely organic agricultural products. In Beijing Lohao City, for instance, over 30% products are non-organic. In addition, organic exclusive shops need rich commodities, but most organic agricultural products are small in batches and slow in sales. As a result, logistic scale is small but the cost is high. Finally, it is universal that organic exclusive shops have difficulty in operation.

2.3 Online (including telephone) marketing channel of organic agricultural products Online and telephone marketing is low in operating cost and the threshold is relatively low. Therefore, there are a lot of enterprises and individuals engaged in online sales of organic agricultural products. However, most of them fail to achieve scale merit. Such as Tootoo Food, Beyond Organic, Beijing Organic and Beyond Corporation (BOBC), Helekang, Green-collar-commune, and Red Baby, etc.

Pure online organic agricultural product marketing does not have other supporting means, so the development is very slow. Credence attribute of organic agricultural products determines this. In the present market situation where it is chaotic and full of distrust, it is difficult for online organic agricultural products shops to gain approval of consumers, and it is also difficult to realize expansion of online marketing scale. Truly, an individual may realize profit through selling organic agricultural products, because the cost is relatively low. The advantage of online marketing channel lies in saving operating cost and reducing stock pressure. At the same time, the online marketing channel also has obvious disadvantage, *i. e.* a truly sincere organic agricultural product online seller has great difficulty in gaining approval of consumers in a short term.

2.4 Direct sales like group purchase and hotel Large gift and group consumption market in China provides great development space for direct sales of organic agricultural products. Take Beijing as an example, organs and organizations take up a large part in distribution of organic agricultural production bases in suburban areas.

The advantage of group purchase is few intermediate links. Group purchase often occurs in festivals, such as Spring Festival, the Mid-autumn Festival. Thus, the business can be conducted in a relatively concentrated time, and the operation cost is low. Most organic agricultural products are fresh and can not be stored for a long time. In this situation, concentration of supplying goods during festivals will present difficulty for arranging production.

