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Problems and Countermeasures in the Supply Chain Management of Flower Industry in Yunnan Province

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Abstract On the basis the elementary theory of of supply chain management, the features and problems in the supply-chain management of flowers in Yunnan Province are analyzed. The problems include poor image of flowers caused by low-end package, imperfect supply-chain structure, and weak processing section after harvesting flowers, hard to launch the cold chain transportation and inadequate awareness of enterprises on consumers. The countermeasures are put forward, which include perfecting various kinds of supply chain structure; intensifying the information system management of flowers in Yunnan Province; developing the cold chain logistics and cultivating and supporting the third-party logistics of flower industry in Yunnan Province.

Key words Supply chain management, Flower industry, Supply chain, Yunnan Province, China

Supply chain management is a kind of enterprise management mode and management thought pattern emerged with the advent of economic globalization and information times. At present, the world management circle has focused on the supply chain management. Comparing with foreign flower industry in developed countries, the flower industry in Yunnan Province is not mature in terms of supply chain, information chain, capital management chain, so it is imperative to get the theoretical directions. On the basis of elementary theory of supply chain management, the four factors that restrict the effective development of supply chain of flower industry in Yunnan Province are analyzed. In the end, the countermeasures on perfecting the supply chain management of flower industry in Yunnan Province are put forward.

1 The elementary theory of supply chain management

Supply chain management (SCM) first appeared in the primary stage of 1980s and it was put forward by the consulting industry. But until around the year of 1990, the definition of supply chain management from the perspective of theory was put forward. The supply chain management takes consumers' demand as direction, key enterprises as pillar and builds effective alliances among enterprises in the different stages of creating values to smoothen intensive management. The supply chain management involves four fields, which cover supply, schedule plan, logistics and demand (Fig. 1). The four fields are supported by various technologies, the Internet and Intranet in particular. Through the advanced communication technologies, the information share can be realized, and then the intensive management of various fields can be materialized as well^[1].

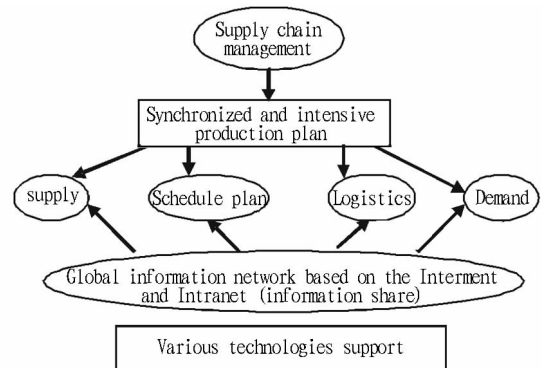


Fig. 1 The involved areas of supply chain management

2 Problems in the supply chain of flower industry in Yunnan Province

At present, the flower industry in Yunnan Province becomes more and more mature in the sections of seed breeding, planting, packaging, transportation, marketing, retailing and so on and the relatively complete industrial chain have been formed primarily. The logistics sections of flower in fresh keeping, freezing, standard processing and packaging and timely transportation become more and more important. However, the logistic sections in flower industry of Yunnan Province still has a long way to go comparing with the flower planting in advanced countries.

2.1 The low-end packaging has seriously affected the quality of flowers

In April, 2003, Yunnan Province issued the "Yunflower", which stipulated the packaging and transportation standard of flowers. In view of the various kinds of followers, Yunnan government stipulated the targeted specific packaging and transportation standards. However, the standards have not been implemented. Because the main bodies of flower production are common rural households, the two factors-costs and labors-restrict the flower farmers to pack the flowers as the standards. Therefore, in the wholesale markets of flowers in

Yunnan Province, the fresh flowers are put in the bamboo basket, land, or on the wagons randomly. Although some flowers are packed, most of them are packed by papers, plastic bags, foam board and coco bottles filled with ice, few of them has standard package. The bad package will inevitably increase the damage in the process of transportation, in the mean time; the whole image of Yunnan flowers will be affected.

2.2 Imperfect supply chain management structure

2.2.1 Indiscrimination of trade and logistics.

Comparing with products in manufactures, flowers are fresh agricultural products, which is easy to wither and go bad, in the mean time, the production of flowers is greatly affected by certain period, biology, season, climate *et al.*, so the supply chain of flower is distinctive. To be specific, although the basis for the development of flower industry is production, the pillar sections are market and transportation. That is to say, the core enterprises of supply chain of flower industry are definitely the transportation-featured enterprises. At present, the transportation system of "Yunnan Flower" which takes the Dounan wholesale market as the core, takes a leading role in the transportation system of Yunnan Province.

Wholesale market is a key section among the major transportation channels of flowers. It collects multiple supply channels of various kinds of products and then sends them to consumers through various channels. Only few flowers are consumed directly without the wholesale market. But, the marketing mode of Dounan flower wholesale market is dominated by spot transaction, which a primitive transportation mode, which confuses the trade and logistics.

2.2.2 The imbalanced sections in supply chain.

The supply chain mode of flower industry in Yunnan Province can be seen on Fig.2. It can be seen from Fig.2 that the flower needs to go through many sections from production to consumption. Among the sections, some of them can not add the value of flower, in contrast, bring many troubles.

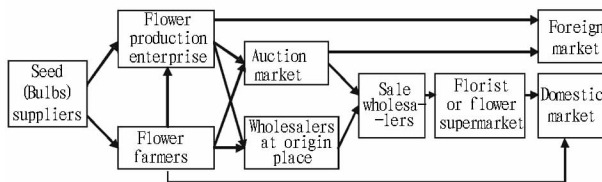


Fig.2 Supply chain mode of flower industry in Yunnan Province

Any industry is a complete industrial chain composed by science and technology research, industrialized production, market circulation and after-sale service, the flower industry has no exception. But the imbalanced sections in the supply chain of flower industry in Yunnan Province likes a spindle with thin two ends and fat middle part. The flower industry in Yunnan province is characterized by advanced middle production sections and weak earlier stage science and technology research and poor later circulation, processing and marketing. If we compare the sections of supply, production, marketing and demand in the flower industry into a circle, the flower industry is

a "chain" that chains together^[2]. Under fierce competitive pressure, the advanced production section only is useless, the fragile other sections will lead to the break of the whole chain.

2.3 The weak after-harvest processing section and the difficult launch of cold-chain transportation

If we suppose the quality of flowers which have come to the hands of consumers are 100%, then the proportion of each section is as follows. Seeds takes about 25%, fertilizer takes about 20%, protection takes about 5%, after harvesting processing and cold-chain takes around 50%, that is to say, the before harvesting sections take 50% of the quality of flower and after harvesting sections take 50% of the quality of flower. It can be seen that the after harvesting section has great impact on the quality of flowers. Generally speaking, after harvesting the fresh flowers, the flowers should be insulated into preservative and put in the cold and damp atmosphere to prevent the sunbeams and cold as soon as possible to get rid of the warm in the fields and enter the cold chain. The process can be seen on Fig.3. However, at present, the rural households insult the fresh flowers to water only, and some even eliminate the process but sell the fresh flowers directly in the flower market, which greatly damages the quality of flowers. What's worse, due to the insufficient of cold-keeping equipments, the cold chain often breaks in the process of transporting flowers.

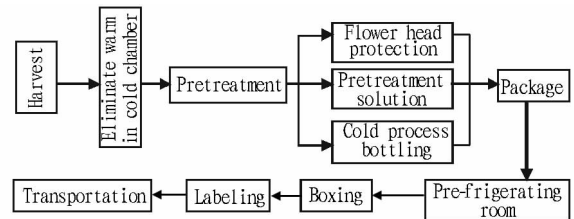


Fig.3 After-harvest handling process

2.4 Enterprises' insufficient awareness on consumers and consumers' demands

The enterprises of flowers did not really produce according to the demands. In Yunnan Province, the unique geographic and climate situations are perfect for planting flowers, but few people conducts deep analysis on where is the market and when is the market. It is caused by the thought pattern of operators, as well as more important reality reasons. In the first place, the flower enterprises seldom trade directly with consumers and their understanding on the market demand mainly relies on the order of sellers. The indirect understanding of consumers' demand leads to the variance of their master on the developmental momentum of terminal market. At present, the supply chain of flower industry in Yunnan Province is a kind of push-based supply chain, that is the production enterprises purchase the seeds from the suppliers according to plan and order, and then they product products, in the end, they send the products to the consumers through various channels such as distributors, wholesalers, retailers. Due to the long distance from manufacturers to consumers, the manufacturers know little about the demands of consumers comparing with wholesalers and distributors in circulation fields. Therefore, the intensive degree of enterprises in supply chain is low

and the reaction is low. The flowers and supply chain direction produced without the enough understanding on the demands of consumers can not match with the demands of consumers.

3 Countermeasures and suggestions

3.1 Intensifying the functions of core industries in supply chain

A supply chain is usually composed by a core enterprise and all the pitch point enterprises allied. The core enterprises can be producers, suppliers and retailers. The supply logistics flows to core enterprises from various suppliers; the marketing logistics flows to consumers from core enterprises. In the process, the core enterprises play the role of allocating logistics processing and logistics distribution to ensure that the products can be delivered to the hands of consumers timely and accurately.

In order to qualify the above work, the core enterprises should be equipped with certain qualities. In the first place, the core enterprises should have certain scale and certain influences in the industry and let other enterprises believe that entering the industry is profitable, thus, the supply chain can be continuously elongated and developed. In the second place, the core enterprises should have strong capability of product development and they should create new products continuously to attract new consuming points to avoid the total fail led by a single product. In the third place, the core enterprises should have high commercial reputation, and it is the indispensable prerequisite for establishing long-term and stable cooperation relations^[3].

3.2 Perfecting various forms of supply chain structure

In view of the reality of "Yunnan Flower", the following three feasible supply chain structures of flower are put forward.

3.2.1 The supply chain structure takes the auction market as core. As for the flowers, it is an effective way for wholesaling them through action. The auctioneers can take the responsibilities of connecting information, examining the quality of suppliers, testing and grading the quality of flowers and making prices. Of course, the transaction costs still exist. The auction market can reduce the trade costs, but it can not eliminate the costs completely. When the management costs formed by the supply chain management is smaller than the trade costs of traditional trade, the supply chain management is still a better choice.

3.2.2 The supply chain structure takes the logistics center as core. As for fresh agricultural products such as flowers, the integrated logistics center is suggested to set up the high efficient distribution of flower, reduce circulation sections and improve the freshness and quality of flowers. The integrated supply chain system of flowers dominated by logistics center is the integrated logistics system dominated by commercial circulation enterprises.

3.2.3 The supply chain structure takes the internet transaction as the core. The functions of internet transaction are to issue the supply and demand information of various flowers; analyze and predict the market and provide services including on-line negotiation, on-line purchase and on-line payment for the

suppliers and demanders. The supply chain of flower which takes internet transaction as core is conducive to reducing the unnecessary intermediary sections and lowering the transaction costs of enterprises.

3.3 Strengthening the management on information system of flower industry in Yunnan Province

3.3.1 Realizing the informing communication and integration among members by using e-commerce. By establishing the information net of supply chain based on Internet, the information system of each enterprise in the supply chain can be connected to share the supply and demand information and complete each business in the supply chain on the information basis. In the supply chain, which takes flower wholesalers as the core, the wholesalers establish effective Intranet by adopting ERP to ensure the smooth communication of information within the enterprises; and then establish Extranet with suppliers, retailers, transporters, banks, final users and so on through the Internet to realize the aim of e-commerce, synchronous work and resource share. Between the Extranet and the Internet, the enterprises control the usage rights of information through professional software and hardware.

3.3.2 Enriching the flower marketing modes by using e-commerce supply chain management. The operation mode of flowers in Yunnan Province still follows the traditional way, and the auction and internet trade only take a small proportion. Therefore, the on-line auction, on-line flower shops, on-line flower transaction mode should be established to perfect the marketing modes.

3.4 Developing cold chain logistics In order to ensure the freshness and quality of flowers, the flowers should be processed in low temperature in the whole process from production, processing, distributing, transporting and marketing. That is the "cold chain logistics" we often said. But the cold chain logistics is the weakest part in the supply chain of Yunnan Province, as well as the most important part.

3.5 Cultivating and supporting the third-party logistics At present, although many flower producing and marketing enterprises have their own transportation logistics companies, which guarantee the transportation of the products of their own enterprises, the high costs will distract the enterprises' energy on improving their own businesses. At the same time, the different logistics system owned by each economic main body in the circulation channels will inevitably lead to the conflicts and contrasts of major economic main bodies. The supply chain management focuses on the enterprises in each joint point of the supply chain can focus their energy on improving its core competitiveness and transferring other businesses to other enterprises, as well as an integrated marketing logistics activities. Therefore, the flower industry in Yunnan Province should exert to development the third-party logistics. Through transferring the logistics to the third party logistics, the enterprises can focus their energies and time on their major businesses, and then the efficiency of supply chain management and operation can be improved.

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ues of the fixed assets investment and science and technology application in 2003 were lower than the previous year, the two weights ranks the first and the eighth in the whole evaluation system. Therefore, it can be predicted that under the situation that the basic index is stable or with stable change rate, the fixed assets investment and agricultural science and technology application has great influence on the development of Sichuan ecological agriculture. To be specific, perfecting the diversified agricultural input mechanism and optimizing agricultural expenditure structure are the crucial points for further increasing the input on agriculture.

Besides, the agricultural science and technology can enhance the replace rate of resources and use return rate of resource to accelerate the pace of ecological agricultural development. Although the contribution rate of agricultural science and technology in Sichuan Province has improved, the growth is slow^[2]. Therefore, it is necessary for creating favorable agricultural science and technology investment environment; establish diversified collecting channels of agricultural science and technology; promote the organization and application of "production, studying and research" and facilitate the enterprises to become the main body of agricultural science and technology.

The third stage was from 2005 to 2008, it is the stage of rapid growth. In the stage, each index will grow with large rate; the following five indexes have come to the maximum value. The popularity rate of toilets (43.90%), per capita net income of rural households (4 121.21 yuan), labor productivity rate (1 785.5 yuan/people), land productivity (1 634.5 yuan/hm²), investment of fixed investment (28.171 billion yuan), among them the labor productivity had the highest growth. In 2008, the labor productivity is the 1.759 times of than in 2005. It can be deduced that the index has the similar growth tend with the relational degree of ecological agricultural development. At the same time, the weight of labor productivity rate ranked the second in the whole ecological agricultural system in Sichuan Province. It can be inferred that agricultural labor productivity rate played a promotion role in the development of ecological agriculture. Ecological agriculture is three dimensional agricultural developmental mode which collects sustainable agriculture, agricultural industrialization and agricultural modernization. In China, in order to realize the above aim, the industrialized development of agriculture should be paid much attention to and the labor productivity rate should be improved. It is also one of the important measures for securing food safety.

3 Conclusions

In the first place, the evaluation index system of ecological agricultural development in Sichuan Province is established. The developmental momentum of ecological agriculture in Sichuan Province is analyzed by using grey relational analysis.

According to the comprehensive relational degree of ecological agricultural development in Sichuan Province, the historical development level of ecological agriculture in Sichuan Province is low but in recent years, it has great improvement. The developmental process of ecological agricultural development in Sichuan Province is divided into three stages. The first stage is from 1997 to 2000, with the shape of reverted "U"; the second stage is from 2001 to 2004, and it is the development and transitional stage; the third stage is from 2005 to 2008 and it is the rapid growth stage.

In the second place, the food safety is closely connected with ecological agricultural construction. Per capita grain production is an important element for evaluating ecological agricultural construction. But resource consumption, especially the per unit yield consumption of agriculture, forestry, animal husbandry and sideline production and fishery are contradictive to ecological agricultural construction. The application of science and technology fruits plays a promoting role in ecological agricultural development. At the same time, the investment of basic construction plays an important role in ecological agriculture. The two are both the engines for ecological agricultural development of Sichuan Province. The stimulation functions of labor productivity rate to ecological agricultural development demands the ecological agricultural to realize industrialized development.

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