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SWOT Analysis of Agricultural Producers in the Supply Chain of Chinese Agro-products

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Abstract On the basis of defining the producers in the supply chain of agricultural products, the SWOT analysis is adopted to analyze the advantages, disadvantages, opportunities and threats of producers in the supply chain of Chinese agricultural products. The paper analyzes the advantages of producers in the supply chain of agricultural products from three aspects including land resources, technology level of producers and input costs. The disadvantages of producers in the supply chain of agricultural products are analyzed from three aspects including scale level, mechanization and technology level and profit level. The opportunities of producers in the supply chain of agricultural products are analyzed from the aspects of laws, policies, capitals and technologies. The threats confronted by the producers in the supply chain of agricultural products are analyzed from foreign producers, negotiation control of supply chain of agricultural chain, environment protection and quality safety standard. On the basis of the analysis, the relevant suggestions on facilitating the interests of producers in the supply chain of Chinese agricultural products are put forward, including fully displaying the advantages of land resources; improving the knowledge and technology level of supply chain of agricultural production; establishing the alliances of producers of agricultural products to expand production scale; improving the quality of agricultural products to satisfy the relevant safety quality standard and environmental protection standard.

Key words Supply chain of agricultural products, Producers, SWOT analysis, China

With the development of global economy, many competition relations are no longer the competition among individual enterprises but the competition among different supply chains. At present, the commercialization degree of Chinese major grain production bases is improving. As an important part in the supply chain of Chinese agricultural products, the grain production bases play a crucial role in Chinese agricultural development and ensuring food safety, so how to clarify the position and function of producers in the supply chain of Chinese agricultural products has become a major subject in academic circle. But in the current research, the control of supply chain of agricultural products transfers gradually from processing and marketing sections to the terminal part of the supply chain. The core strength dominated in the supply chain is usually the agency and processing enterprises of agricultural products rather than producers. Relying on the SWOT analysis, the paper analyzes the producers in the supply chain of Chinese agricultural products and puts forward countermeasures to provide references for improving the interests of agricultural products producers and the interests of the whole supply chain of agricultural products.

1 Definition of producers in the supply chain agricultural products

Producers in the supply chain of agricultural products refer to the organizations and individuals in Chinese major grain production bases (including mainly Jiangsu Province, Jiangxi Prov-

ince, Hunan Province, Hubei Province, Henan Province, Hebei Province, Sichuan Province, Anhui Province, Liaoning Province, Jilin Province and Heilongjiang Province in middle-lower Yangtze River Plain, North China Plain, Northeast Plain), which undertake agricultural products and the commercialized degree is high and has achieved certain scale. These organizations and talents can fully participate in the supply chain of agricultural products and have great impact on market, so the paper mainly analyzes the strength, weakness, opportunities and threats faced by the organizations and individuals which undertake agricultural products, to find out the countermeasures for the development. From Fig. 1 below, it can be seen that the research subjects are mainly the producers of agricultural products in the chain of producers to processors; producers to logistic operators and produces to merchant. In the chain of producers to consumers, producers sell products to consumers directly. Generally, it is dispersed direct sale with small amount of agricultural products and small impact on the market, so the section is excluded from the research.

2 SWOT analysis of producers in the supply chain of Chinese agricultural products

SWOT analysis is a strategic analysis method, which is short for strengths, weaknesses, opportunities and threats respectively. Through the comprehensive analysis and evaluation on the strengths, weaknesses, opportunities and threats of the subjects to be analyzed the conclusions can be drawn. Through the organic combination of internal and external resources, the strengths and weaknesses of the subjected resources can be clearly defined to explore the opportunities and threats faced by the producers, and then adjust the approaches and resources

in the two layers of strategy and tactics to make relevant countermeasures to realize the target made by the analysis subjects. The SWOT analysis figure of supply chain in Chinese agricultural products is as follows.

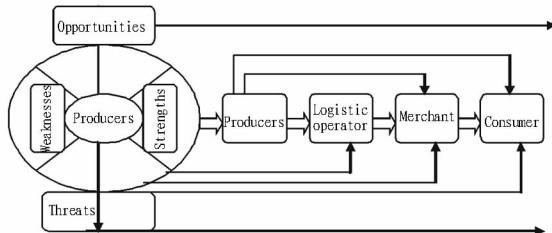


Fig. 1 The SWOT analysis of producers in the supply chain of Chinese agricultural products

2.1 Strengths analysis

2.1.1 Land resource strengths. The producers in Chinese major grain production area have land resource strengths. According to relevant data, in the end of 2008, the total area of Chinese farmland was 8 114 393 hm² and the area of Chinese farmland per capita was 0.091 333 hm². But the proportion taken by the area of farmland in the major grain production area and per capita farmland area is relatively larger. The specific data can be seen as follows:

Table 1 The farmland situation of grain production area in the end of 2008

Name	The total volume of farmland	Area of per capita farmland
Liaoning Province	272 352.2	0.094 667
Jilin Province	368 976.3	0.202 667
Heilongjiang Province	788 674.7	0.309 333
Henan Province	528 424.9	0.084
Henan Province	421 153.1	0.090 667
Jiangsu Province	317 586.2	0.062
Jiangxi Province	188 472.4	0.064
Anhui Province	382 012.6	0.093 333
Hubei Province	310 941.4	0.082
Hunan Province	252 624.9	0.059 333
Sichuan Province	396 493.3	0.073 333
The whole nation	8 114 393	0.091 333

Note: the data come from the National Bureau of Statistics.

It can be seen from Table 1 that the producers in Chinese major grain production bases have land resource. For example, three provinces in northeast China have small population and the area of farmland per capita is higher than the area of national per capita farmland, especially in Heilongjiang Province, in which the area of per capita farmland has achieved 0.309 333 hm². Land resource is a great strength for grain production. Besides, land in Chinese major grain production area is fertile, for example, the area of black earth in the middle Song-nen Plain is 8.15 million hm², accounting for 32.5% of the total area of farmland in Northeast China.

2.1.2 Improved technology level of producers. With the amounting input on improving Chinese agricultural products producers' technology skills the Chinese education and technology skills of Chinese agricultural products producers have been improved greatly. According to the relevant data of Chinese

population census: in 2000, the producers who have accepted the primary school education or below accounted for 54.17%; middle school education accounted for 50.2%; high school education accounted for 7.1%; junior college education accounted for 0.3% and vocational college education or above accounted for 6.79%. In 2005, among Chinese rural labors who have accepted primary school education or below accounted for 51.32%; middle school education accounted for 40.6%; high school education accounted for 7.6%; junior college education accounted for 0.4% and vocational college education or above accounted for 6.98%^[1]. It can be seen that the continuously increased technology level of producers of Chinese agricultural products is an increasingly improved advantage of Chinese agricultural products producers.

2.1.3 Low input allows easy change of products. Comparing with the processors and merchants in the supply chain of agricultural products, the producers have smaller scale and lower costs, so they can adjust their products according to their prediction on market. The producers do not need to bear great sunk costs like processors and merchants (for example the factory buildings and equipments). Besides the sunk costs, the producers of agricultural products do not have great upfront investment, so it is easy and relatively cheap for them to change the products they cultivated. It is one of the strengths of producers of agricultural products.

2.2 Weakness analysis

2.2.1 The scale is small and dispersed. Even in the grain production bases with high commercialization degree and large relative scale, the production of Chinese agricultural products is still dispersed and scale is small comparing with other main bodies in the supply chain or foreign agricultural products producers. The small and dispersed scale leads to the weak position of agricultural products producers in supply chain of agricultural products. In the strong circulation section, due to the small yield of products, the producers stay in the weak position of negotiation. In the supply chain of agricultural products, many processors and logistic operators get most profits in the circulation process. When the market slumps, they will transfer the risks to producers. Even in the bad market, the profits obtained by the producers still far less than that obtained by processors and logistic operators. Some enterprises and administration departments squeeze the producers' profits by their monopoly position. Due to the small scale and dispersed operation of Chinese agricultural products producers, they have to confront with large risks and their capabilities on resisting natural risks are low.

2.2.2 Low mechanization and technology level. Comparing with other sections in the supply chain of agricultural products and the producers of agricultural products in developed countries, the mechanization and technology level of Chinese agricultural products are relatively low. The experiences in the developed countries demonstrate that only the dearth of labors caused by the transfer from agricultural labors to non-agricultural labors, the agricultural mechanization can be promoted. But China has a large agricultural population, the transfer from agricultural labors to non-agricultural labor is slow and farmers' income is still low. The data issued by the State Statistics Bureau

in January 20, 2011 showed that in 2010, the per capita income of urban and rural residents has increased 7.8% and 10.9% respectively comparing with the previous year. But in 2010, the aggregate per capita income of Chinese urban and rural residents is 21 033 yuan, but the per capita net income of rural residents is 5 919 yuan. The per capita income of farmers is still low. The backward rural infrastructure and low technology skill of farmers lead to the low mechanization and technology level of Chinese agricultural production.

2.2.3 Low profit of the production section in the supply chain of agricultural products. Due to the dispersion of production scale of Chinese agricultural products, downshift of negotiation rights of agricultural products supply chain^[2] and imperfect market system, the profits of producers of Chinese agricultural products are low. The investigation conducted by the Ministry of Agriculture in 2008 on the processes of production, purchasing, processing, transportation, wholesaling and retailing of nine kinds of agricultural products including grain, livestock and vegetables in Beijing, Shandong, Hebei, Heilongjiang, Jilin, Hunan, Guangdong, Hainan *et al.*, demonstrates that taking rape as an example, the profits in the production section is 0.049 yuan, the profits in the purchasing section is 0.01 yuan, the profits in the wholesale section is 0.077 yuan and the profits in the supermarket chain is 0.911 yuan^[3]. It can be seen that most profits in the supply chain of agricultural products are obtained by logistic section and marketing section, the producers of agricultural products in the supply chain can only get a small part of the profits.

2.3 Opportunity analysis Comparing with other main bodies in sections of processing, wholesaling and retailing in the supply chain of agricultural products, the opportunities of producers in the supply chain of agricultural products are various preferential policies and supporting policies provided by the government. In the fifth chapter of *Agriculture Law*, the central government supports the major grain production bases in terms of policy, capital and technology; constructs stable grain production bases; improves the storage and processing equipments of grain; enhances the grain production, processing level and economic interests of grain; establishes cooperative relations between the major grain production base and the major grain selling bases. When the prices of grain are excessively low, the state council should implement the price protection system on part of the grain. The protection price should follow the principle of protecting the interests of farmers and stabilizing grain production. The purchasing units should not refuse the grain sold by farmers at the protection price. The governments at the county level or above should organize the fiscal department, financial departments and purchasing units entrusted by the central government to collect capital to purchase grain, any department, unit and individual is allowed to use the capital. The nation will establish the grain risk fund to support grain storage, stabilize grain market and protect farmers' interests^[4]. It can be seen that no matter in legislation or in revenue and subsidies, the producers of agricultural products can enjoy the preferences and support from the government. The preferential policies and support provide favorable opportunities for producers of agricultural products.

2.4 Threats analysis

2.4.1 Threats come from foreign producers in the supply chain of agricultural products. Producers in the supply chain of Chinese agricultural products are confronted with the threats of foreign producers. With the development of economic globalization and the open of Chinese agricultural products after entering the WTO, substantial cheap but good foreign agricultural products enter Chinese agricultural products market, which makes the competition in the Chinese agricultural products market fiercer. Many developed countries have high level of mechanization, professionalization and technology. Besides, America, Australia, Canada and some other countries have large agricultural operation scale. The average agricultural production area taken charge by each agricultural labor is high, for example, in Canada, the area is 109.17 hm²; in America, the area is 66.81 hm². Although the operation scale of French rural households is relatively small, the operation scale is expanding continuously due to the promotion of the government. The foreign producer in the supply chain of agricultural products is a big threat for domestic producers.

2.4.2 The negotiation control in the supply chain of agricultural products transfers from the production section to processing and marketing section. With the continuous development of Chinese economy, Chinese agricultural products market gradually transfers to the buyers' market, the marketing section, which plays a determining role in the value of the whole supply chain. Only by sold the products, the profits in the whole supply chain can be realized^[5]. The transfer of market provides a favorable negotiation advantages for sellers in the supply chain of agricultural products, as well as a bad negotiation position of producers. Besides, the major producers of Chinese agricultural products are farmers. They do not have enough knowledge on market, risks and negotiation skill. That is the reason that leads to the disadvantaged position of producers in the negotiation.

2.4.3 More and more stricter green and environmental protection standard and quality safety standard. For one thing, countries around the world pay more and more attention to sustainable development, human health and ecological environment protection and natural resources protection. For another thing, out of protecting the interests of their own country and protecting their domestic industries, some countries stipulate stricter regulations on green, environmental protection and safety standard. Meanwhile, China also improved its relevant regulations on green standard, environmental protection and safety standard. The improved standard is another challenge for the producers of agricultural products. Only the products which are in accordance with the green, can environmental protection and safety standard enter the market. The Chinese exported agricultural products need to improve their quality to avoid green and technology barriers and realize the interests of producers of agricultural products.

3 Countermeasures and suggestions

3.1 Fully displaying the advantages of land resources

Due to the land resources owned by Chinese agricultural products, especially the obvious land resources in the main grain production base. So the producers of agricultural products spend low costs on land, the producers of agricultural products should make full use of the advantages, for example, selecting

improved seeds with high quality, high production, high efficiency, anti-diseases and anti-cold and drought. According to different situation of various places, the producers should use more advanced equipments and production modes, for example selecting advanced harvest equipments, seed machine, farmland machine, and cultivation machine; adopting excellent cultivation, seed and management technology; developing ecological agriculture, tourism agriculture so as to form advanced, developed and high effective modern agriculture.

3.2 Improving the knowledge technology of producers in the supply chain of agricultural products The relevant scholars have researched the labor productivity. Taking the illiterate labor productivity as 1 to calculate, the conclusion can be drawn. The labor productivity of people with primary school education is 1.43; the labor productivity of people with middle school education is 2.08 and labor productivity of people with college education is 4. so the knowledge level of producers in the supply chain of agricultural products should be improved. Many measures can be adopted to improve farmers' skills. In the first place, the government should organize the skill training. The government should invite experts to instruct farmers in the fields. The experts can provide agricultural knowledge and relevant skills for farmers and promote the development of agriculture and local economy. In the second place, the government can build spare time training schools and launch skill training school and improve the recognition and application modern communication skills of producers of agricultural products. Through providing training for farmers, the government can not only improve the knowledge level of producers in the supply chain of agricultural products, but also improve the negotiation capability of producers of agricultural products to improve the production interests of Chinese agricultural products.

3.3 Establishing the alliance and cooperation with other producers of agricultural products to expand scale The dispersed and small scale of producers of Chinese agricultural products lead to the weak negotiation capability in the supply chain^[6]. So the production scale of agricultural products should be improved, and the organizations including alliances of agricultural products and farmers' cooperative economic organizations should be established to reinforce the negotiation rights of producers of agricultural products to let the producers master more information. Only by combining the producers, then the interests of them can be protected when facing processors, wholesalers and retailers. From the past experiences, many

developed countries adopted the method and made good results. Although, in recent years, China has established many local agricultural cooperative organizations, their actual functions should be displayed. The government should also display its supervision and supporting functions to protect the interests of producers of agricultural products.

3.4 Improving the quality of agricultural products, satisfying the relevant safety standard and enhancing the competitiveness of products As for the quality of Chinese agricultural products, three measures can be adopted. In the first place, the government should intensify the stipulation on laws, regulations and standard to be in line with international standard and reinforce the evaluation and supervision on agricultural products. Besides, the government should combine the demonstration work of standardized base to launch the integrated service of agricultural standardization. The government should stipulate relevant stimulation measures to improve the enthusiasm of producers on enhancing the quality of agricultural products. In the second place, the service and supervision functions of social intermediary institutions should be well displayed. In the third place, the producers should increase their quality and law awareness, because in the future, only by relying on high quality, the products can get success in the market. Therefore, the producers should adopt targeted actions to improve the quality of agricultural products.

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3.4 Vigorously applying multiple modern marketing means

On the basis of innovating the traditional marketing, the third-party logistics companies should boldly explore and apply the modern marketing and encourage the pillar industries or marketing companies to establish marketing network in big and mid-sized cities, especially, to build circulation, processing and marketing networks in coastal cities. Besides, the third-party logistics companies should develop agents and establish the direct-marketing markets; develop the chain operation and distribution of agricultural products; vigorously apply the modern transaction way of auction and agent; adopt to the information-

based and network-based development; accelerate the development of e-commerce and promote the on-line transaction^[3].

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