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Impact of Small-scale Production Mode on Citrus Industry of Hunan Province, China

—Based on the Investigation on Citrus Industry in Shimen County

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Abstract Small-scale farmer is defined by the domestic and foreign experts and scholars. They point out that since the fragmentation of production and the diseconomy of scale in small-scale farmer is inconsistent with the characteristics of scale and technology of modern agricultural production, it is necessary to eliminate the adverse effects of existing mode in order to provide theoretical references for the relevant researches. Citrus industry in Shimen County, Hunan Province, China is introduced from the aspects of natural geographical condition and socio-economic benefit. Impact of small-scale production mode on citrus production in Shimen County is discussed. Firstly, blindness of small-scale production is the main reason leading to overproduction of citrus. Secondly, small-scale production mode has limitation on the acceptance of new technologies, restricts the operation of geographical trademark, and constraints the enthusiasm of enterprises in entering the agricultural field. Finally, suggestions are put forward, such as encouraging the circulation of rural land, improving the organization degree of farmers, changing the work function of grass-roots government and perfecting the agricultural financial credit system.

Key words Small-scale production mode, Citrus industry, Geographical trademark, Land circulation, China

1 Concept of small farmer

Friedrick Engels in his book of *The Problems of French and German Peasants* points out that small farmer is the tenant or the owner of a small piece of land, the area of which is usually not only smaller than the land beyond the cultivation power of their own family, but also bigger than the land enough to feed his family. This mode of production is the remnants of the past^[1]. Huang Zongzhi divides the traditional small-farmer theory into three classical schools according to the standards of "conversion of small farmer" and the "behavior and motivation of small farmer", such as the Chayanov School, the Schultz Small-Farmer School, and the Adam · Smith and Marx Small – Farmer School. Chinese scholar Deng Dacai classifies the small-farmer theory into four schools according to the behavior and motivation of small farmers, including the the Chayanov School, the Marx Small – Farmer School, the Schultz Small – Farmer School, and the Huang Zongzhi Small – Farmer School. Among them, the Schultz Small – Farmer School includes Adam · Smith, Schultz and Popkin. They argue that just like the capitalist enterprise, small farmer is rational and pursues the maximization of profit. Thus, small farmer is the "rational small farmer". The Chayanov School includes Chayanov, Scott and Polanyi, who argue that production of small-farmer family is to meet the needs of survival and consumption based on the principle of "Safety First, Survival First, Rather Than Profit First". Therefore, small farmer is "existing small farmer". The Marx Small – Farmer School includes Marx, Engels, Lenin, and Mao Zedong, which does not discuss the mo-

tivation and behavior problem of small farmer. It only discusses the tenancy relationship from the views of exploitation, class and revolution; it also researches on how to change the rural area, the peasant, and the small farmer in order to reduce exploitation, to fight for the maximum right, and to reform the peasant society by the minimum cost. Thus, small farmer is also known as "vulnerable small farmer". Huang Zongzhi Small – Farmer School synthesizes the three theories of small farmer, and researches on the behavior and objective of small farmer. He argues that small farmer is not only a profit hunter, but also a producer who earns a living. And certainly, small farmer is an exploited cultivator. Huang Zongzhi suggests investigating the behavior and objective of small farmer from the aspects of household production function and consumption function. Producers want to maximize profits, while consumers try to maximize the effectiveness. Finally, the "production target" and "consumption target" are integrated together. Thus, small farmer is also the "utility small farmer"^[2].

Based on the analysis of the concept and nature of small farmer, we can use these theories to study on the agricultural development status under the small-scale production mode in China. China has a typical small-scale farming mode with family as the unit, which is of obvious political feature and is also a path exploration suitable for the situation of China. However, this farming mode with family as the unit only achieves a periodical success, whether it can provide a pre-condition for the development of modern agriculture or not is a question worth considering. There are problems, such as the fragmentation of production and the weakness of technology acceptance, in the small-scale production mode with family as the unit, which has no consistency with the large-scale and technology-based modern agricultural production. Therefore, how to eliminate the ad-

verse effects under the existing mode in order to develop modern agriculture has become the focus of research. Taking citrus industry in Shimen County, Hunan Province, China as an example, effects of small-scale production mode on the development of the whole industry is discussed.

2 Present situation of citrus production in Shimen County, Hunan Province, China

Shimen County, located in the northwest of Hunan Province, has the lowest land in the junction of Caijia River and Lishui River, an altitude of 42.5 meters, and the highest land in Huping Mountain, an altitude of 2 098.7 meters. The county has an average altitude of 500.0 meters, average annual temperature of 16.7 degrees centigrade, the coldest 5.0 degrees centigrade in January, the hottest 28.6 degrees centigrade in July, the annual frostless season of 282 days, the annual sunshine of 1 646.9 hours, and the average annual precipitation of 1 540 millimeters. The total cultivated land is 48.0 thousand hectares and the total population is 700 thousands, among which, 600 thousands are agricultural population and 300 thousand people live on citrus. Citrus has been grown in Shimen County for over 1 800 years and the planting area of citrus reaches about 29.0 thousand hectares. There are a total of 19 citrus specialized cooperatives, whose major varieties are early mandarin orange, Bingtang orange, Ponkan, and Newhall navel orange. Total annual production of Shimen County reaches 400 thousand tons in the year 2009, among which early mandarin orange, medium-maturity mandarin orange, Ponkan, navel orange and Bingtang orange are 270 thousand tons, 50 thousand tons, 20 thousand tons, 40 thousand tons and 20 thousand tons, respectively. In the year 2008, sales revenue of fresh fruits in Shimen County has totaled 415 billion yuan and the composite output has broken through 700 billion yuan. Shimen County, famous for the geographical trademark of "Shimen Citrus" and known as the "Hometown of Chinese citrus" in the world, sells its products well in Russia, EU, USA, Hong Kong, Macao and other areas and countries.

3 Effects of small-scale production mode on the citrus production in Shimen County

3.1 Blindness in small-scale production, the main reason for the market surplus of citrus production

After the 1970s, Shimen County began to promote citrus planting widely. In the early and mid-90s, citrus is mainly grown in hilly areas and the plain still grows rice, cotton and other crops. This is mainly because of the high price of cotton, the low yield of citrus, and the farmers' lack of confidence in citrus planting. However, in the late 90s, demand of citrus exceeded the supply in Chinese market. At that time, market price of citrus was 1.0 yuan per kilogram, while the price of cotton fell. Thus, farmers changed the rice and cotton field into citrus field; and citrus was grown widely in the Three Gorges area, which is in the north of the Yangtze River. The normal production period of citrus is more than seven years after cultivated. Therefore, in the year

2006, there were a large amount of citrus in the market. Since the supply exceeded demand, the price of citrus fell, which seriously dampened the enthusiasm of farmers. Blindness in small-scale production leads to the oversupply, the sluggish sale of citrus and the heavy economic losses.

3.2 Limitation of small-scale production mode in accepting new technologies

There are two major constraints for the limitation of small-scale production mode in accepting new technologies. One is that the small-scale management land of a family affects the investment capability of new technologies. The other is that the traditional cultivation habits influences the absorptency of new technologies. Land area greatly determines the proportion of agricultural output in annual family income. Schultz argues that the farmer is rational in economy and their production configuration is effective. Thus, the farmer can allocate the input in each industry according to the source of income^[3]. In recent years, with the growth of migrant workers, concurrent business household has taken the place of pure agricultural household; and wage income has become the main source of rural household income. When farmers do not rely on agriculture, they are unwilling to invest in the field of agricultural production, which constraints the application of new technologies. At the same time, both large household and horticultural farm are more dependant on citrus production than small household, which is the main source of the overall income. They have paid more attention on new technologies and are more willing to adopt new technologies. Traditional cultivation habit is an important hidden factor affecting the extension of new technology. The concept of "satisfying with being well off" has led to the heavy reliance on traditional habits. Farmers are content with the status quo, and are unwilling to adopt new technologies.

3.3 Restraint of small-scale production mode on operation of geographical trademark

There are two basic problems in the operation of geographical trademark, including the quality and characteristics of commodity. The geographical trademark of "Shimen Citrus" has significantly improved the popularity and market effect of citrus industry in Shimen County. Price of citrus with trademark of "Shimen Citrus" is 0.2 – 0.3 yuan higher than the general orange in retail market, which is the release effect of geographical trademark. Maintaining the durability of the release effect or enlarging this release effect is the key to the sustainable development of a brand. At present, China has registered more than 560 geographic labeled products, the prices of which have increased by 20% – 30%. In the operation of geographical trademark, how to regulate the behavior of producer is the most important factor to ensure the quality of products. During the operation of the brand "Shimen Citrus", Shimen Citrus Association has selected some horticultural farms to produce the "Shimen Citrus" according to the situation of producing areas, and has marked the producing area on the citrus in order to reduce the affected areas of sales problem within the geographical trademarks. However, this mode has not won the support of most of the retail sellers. They believe that "Shimen Citrus" is the trademark of the whole Shi-

men County and they have the right to use this brand as local growers. At present there is no strict standard restriction, and the quality of citrus produced by each peasant household varies. Besides, pesticide residue of citrus has not met market requirements at home and abroad. All these have serious negative impact on the products with geographical brand.

3.4 Discouragement of enterprises from entering the field of agriculture due to small-scale production mode Enterprises take the maximization of profit as their fundamental objective. Agriculture, as a weak industry, has significant insufficient absorptive capability for enterprises. And small-scale production mode is an important reason for this phenomenon. Firstly, enterprises entered the agricultural production have to face thousands of peasant households, which inevitably increases the negotiation costs. Secondly, the competitiveness of enterprises is mainly from the quality of the product. The decentralized operation mode has increased the risk of production and the cost of product recalls. Thirdly, enterprises entered the agricultural production should ensure the large-scale supply of products, and the price should be made based on the contract between two parties. The scattered unorganized farmers are in a weak position during price negotiation due to the capital inequality and the information asymmetry. Deep processing of citrus has less demand for the appearance of fruits, but requires adequate supply and low price. Therefore, when the fruits are ripe, fruit farmers and enterprises usually haggle over price. But the two can hardly reach an agreement, which affects the enthusiasm of enterprises.

4 Policy suggestion

4.1 Encouraging the circulation of rural land use right It is an important measure for the transformation from small-scale production mode to large-scale production. Therefore, government should actively guide the land use circulation, adhere to the principle of equality and voluntariness, encourage peasant household to carry out land circulation, effectively amend the efficiency of local resources allocation, let farmers share the achievements of urbanization and industrialization, and make farmers obtain property income. Due to the lack of rural social security system, land has already become an important carrier of rural social security, which is also an important reason why China does not fall into the "Trap in Latin America" during rapid development. Therefore, when accelerating the circulation scale of rural land, rural social security system must be also improved and the old-age insurance and unemployment insurance in rural areas must be brought into the social insurance system.

4.2 Improving the organization degree of farmers Dispersion feature of small-scale production mode, on the one hand, leads to the high transaction cost, low negotiation status, and the lack of protection of basic interests for producers and other participants in product circulation^[4]. On the other hand, it causes the disunion of production standard for geographic brand products and reduces the competitive advantage of agricultural products. Therefore, we should enhance the or-

ganization degree of farmers, formulate strict production standards, improve product characteristics within a certain region, and highlight the differences of the similar products in order to enhance the cohesion and the competitiveness of the primary producers of agricultural products.

4.3 Changing the functions of the grassroots government

Small farmers usually cause the blindness of market when implementing rational behavior, which is greatly due to the regulation error of government. Therefore, service system should be offered for the rational behavior of small farmer through transformation of government functions. Firstly, government should increase support for cooperative economic organizations from the aspects of tax, credit and technology, and formulate and implement preferential policy for rural cooperative economic organization^[5]. Secondly, government should strengthen the early warning control system for agricultural products and, regularly publish market information of agriculture, offer correct information guidance for farmers' investment. Thirdly, we should continue to implement the rural professional education and enhance the young farmers' quality in agricultural production. And agricultural research sector should carry out in-depth technical training in rural areas.

4.4 Improving agricultural financial credit system After restructuring, state-owned banks have left the field of "Three Agriculture". Thus, loan for agricultural production is severely limited; the income of migrant workers flows into the urban consumption; and the "microcredit", which is successful in South Asia, is not suitable for China, which restricts the inflow of capital to agriculture. Adequate flow of funds is a prerequisite to land circulation. The long periodicity of agricultural production requires a substantial upfront investment. Thus, large-scale transition of small-scale production mode can not be realized directly due to the funding constraint. A large amount of agricultural funds are invested in agricultural infrastructure construction; and few are in the soft environment of agricultural production mode, which can create a good environment for the change of agricultural production mode. Therefore, government should improve the modern financial and credit mechanism in rural areas, and set up special capital loan for land circulation, in order to offer financial support for the farmers having advanced ideas about agricultural production.

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