Research on the Moderate Scale Operation of Food

Junying WEI*, Qing YU

School of Economics, Yangtze University, Jingzhou 434023, China

Abstract Ensuring food security has always been an important and enduring strategic project. However, the contradiction between a large population and little land, the shortcomings of the household contract responsibility system and the current rapid development of industrialization and urbanization, make problems concerning farming increasingly prominent. To build a new agriculture business entity, the development of agricultural moderate scale operation is imperative. Based on this, this paper analyzes the insecure moderate scale of food and the impact of moderate scale operation of food, and puts forth recommendations for promoting moderate scale operation of food.

Key words Food, Moderate scale operation, Recommendations

1 Introduction

For China as a populous country, food is undoubtedly fundamental to us. Food security has always been the top priority of the work of Chinese government, but the key to food security is food production. Since 30 years of reform and opening up, China's agricultural production and operation has been dominated by household contract responsibility system, and farmers have been the main food producers. Under certain conditions, this system increased food production and stimulated farmers' enthusiasm for production, but in terms of the shortage of arable land, coupled with the recent rapid development of industrialization and urbanization, the phenomenon of migrant rural labor force is increasingly prominent. Rural land abandonment and shortage of agricultural workers not only present an enormous challenge to China's agricultural development, but also bring an important opportunity for the transformation of agricultural development to modern intensive agriculture. So, it is necessary to build new agricultural operation entities, and develop moderate scale agricultural operation.

2 The impact of inappropriate food scale

The term returns to scale arises in the context of a firm's production function. It explains the behavior of the rate of increase in output (production) relative to the associated increase in the inputs (the factors of production) in the long run. In the long run all factors of production are variable and subject to change due to a given increase in size (scale). Returns to scale focus only on the relation between input and output quantities. The laws of returns to scale are a set of three interrelated and sequential laws: Law of Increasing Returns to Scale, Law of Constant Returns to Scale, and Law of Diminishing returns to Scale. If output increases by that same proportional change as all inputs change then there are constant returns to scale (CRS). If output increases by less than that proportional change in inputs, there are decreasing returns to scale (DRS). If output increases by more than that proportional change in inputs, there are increasing returns to scale (IRS). The so-called moderate scale means that in certain social and economic environment, land, labor, capital, equipment, management, information and other factors of production achieve the best combination and efficient operation, and get the best economic benefits. Experts believe that under the current conditions of large-scale farming and appropriate scale operation, about 120 acres of land and 60 acres of land can be better in the northern and southern regions, respectively.

2.1 The impact of small-scale food production First of all, the operation scale is too small and scattered; large advanced machinery and equipment cannot be used, and farmers can just use the manual labor for cultivation; the degree of the modernization of agriculture is low; food production technology content is not high and the capacity is limited. Secondly, too small scale makes it hard to increase food output, so the unit product cost is higher, low profit margins are unfavorable to increasing farmers' income, and the income gap between urban and rural areas will expand. Thirdly, most small operators are farmers with low level of knowledge, and it is difficult for them to effectively grasp the market information, leading to the blind production decisions and extremely unstable agricultural production, which is not conducive to agricultural informatization. Fourthly, small`scale operation makes food production low, and after deducting rations, farmers can just be self-sufficient, not to mention having spare products to enter the market for sales. The rate of commercialization and industrialization of food is low. Fifthly, from the point of anti-risk ability, small operators are very fragile, and the ability to resist natural disasters, diseases, pests and market risk, is poor. Finally, small-scale agricultural production efficiency is low, so most of farmers give up farming and become migrant workers, causing abandoned land, which is very bad for food security.

2.2 The impact of large-scale food production Firstly, too large scale could easily make some farmers landless and unemployed. Optimal scale requires a lot of labor transferred from food production, and if the scale is bigger, the labor accommodated

Received: June 15, 2015 Accepted: August 4, 2015

* Corresponding author. E-mail: hepuming0806@163.com

will be much less, which will cause more farmers to lose the opportunity to get land income. Secondly, too large scale is likely to cause extensive operation. Moderate scale produces the highest yields, effective arable land management and higher management costs, easily leading to extensive management and production decline. Thirdly, cost expenditure will greatly increase. Too big scale will pose higher demands for supporting infrastructure, machinery and equipment, agricultural science and technology. It will inevitably increase the government fiscal subsidies, and increase the cost of production, leading to diseconomy of scale. Finally, management risk will increase. The larger scale means greater investment, and it will also pose higher requirements on the enterprise management and management decision making. Under improper decisions and bad management, once the market is volatile, the enterprise loss will be immeasurable. Therefore, we must stick to the moderate scale operation according to the law of diminishing returns, and gradually expand the scale until it reaches maximum production efficiency under the constant condition of other production. Moderate scale operation is to achieve the lowest production cost, the highest factor utilization rates, and the best combination of labor, economic and technical benefits. In general, the moderate scale is dynamic, and we should adjust measures to local conditions and time.

3 The impact of moderate scale operation of food

3.1 Improving land use efficiency Moderate scale operation of food will help improve land productivity and efficiency of resource allocation. Moderate scale operation can eliminate the ridge, change the original fragmentation of farmland, make the land concentrated, increase growing area of food, reduce the phenomenon of abandoned farmland, and improve the efficiency of land use. In addition, land after the concentration can be used for large-scale mechanized operation and improve agricultural production conditions.

3.2 Improving economic benefits Scale operators subcontract land from decentralized farmers, and through the efforts and careful cultivation of operators, the economic benefit is much higher than that of ordinary farmers. Scale dealers have negotiation skills in the purchase and sales of the products due to a large number, thereby reducing cost and improving efficiency. This economic benefit is the contractor's excess profit from the land use and land productivity increase, and the spillover effects of agriculture significantly improve agricultural efficiency.

3.3 Easing structural shortage of rural labor With the acceleration of industrialization and urbanization, coupled with the relatively low earnings in agriculture, most of young adults choose to be migrant workers, and the elderly are left behind to be farmers. Most of these people use little land for the production of food rations, and the rest of land is idle, leading to more and more abandoned rural land. In recent years, after implementation of food moderate scale operation, the young labor forces in rural areas go into the city, and they can transfer the arable land to the new agricultural business entities, cooperatives and family farms, thereby eliminating the worry, and can make up for the adverse effects of transfer of rural labor on agricultural production, and make up for the adverse effects of urbanization on agricultural production.

3.4 Ensuring food security To solve the food supply problems, the first thing is to make full use of existing land resources and do everything possible to improve land utilization. According to the survey of Chinese Academy of Social Sciences by Dang Guoying in 2013, food growers reached moderate scale operation, utilization rate will be increased by 10%. If the country is to achieve a scale of operation, it is likely to increase 100 million acres of land, and at least to increase food production more than 8%. Further, since the scale operation enhances the producers' pursuit of agricultural science and technology, the scale farmers have more power to pursue science and technology, and have the ability to apply science and technology. Depending on the application and promotion of improved varieties, cultivation techniques, pesticide, fertilizer use and other new technologies, scale farmers are more effective in agricultural production. The average land productivity is generally higher than 10% of farmers.

4 Recommendations

4.1 Improving the rural land contract management system and promoting effective land transfer and concentration Firstly, it is necessary to strengthen the propaganda, and make the farmers realize the necessity of land circulation, so that they can use land to increase income. At the same time, the grassroots cadres should enhance typical demonstration to drive farmers to be the "leader" of scale operation. Secondly, it is necessary to standardize the land circulation behavior, regulate the contract of land circulation, complete the transfer registration, timely release information, provide policy advice, and create good environment for moderate scale operation of food. Thirdly, it is necessary to make policy to stimulate the land circulation, further improve the system of land approval, allow land to move freely in accordance with the law, encourage the development of rural cooperatives, establish the land circulation support funds, offer certain subsidy to farmers, support the rural migrant entrepreneurship, and give more help from the financial support, tax policy and technical guidance,

4.2 Innovating upon employment service system and perfecting the rural social security system First of all, it is necessary to focus on the development of service industry and breeding industry to provide more access to rural labor transfer, reduce farmers' dependence on farmland, and promote rural labor transfer to non-agricultural industries and city. Secondly, it is necessary to increase the intensity of training for farmers to gradually change their employment concept, improve their educational level and employment skills, and broaden employment. Thirdly, it is necessary to loosen the restrictions of the household registration system, break the barriers between urban and rural areas, establish a uni-

fied, open, competitive and orderly integrated urban and rural labor market, safeguard the rights and interests of urban migrant workers, and make them get the same jobs and employment rights as urban workers. Finally, it is necessary to gradually establish and perfect the system of rural social security, such as unemployment insurance, endowment insurance and cooperative medical care, and expand its coverage, dispel the concerns of farmers, and build a sound environment advantageous to the rural labor transfer and and moderate scale land operation.

4.3 Fostering new agricultural operators and intensifying policy support First of all, it is necessary to provide special loans for new agricultural operators to reduce the financing cost and operating cost, and enhance the ability of scale operators to withstand market risks and major natural disasters. There is a need to further improve the system of policy-oriented agricultural insurance. Secondly, it is necessary to adjust the form of food subsidies, and give the direct subsidies according to the sowing area, food production and food sales. Thirdly, it is necessary to improve agricultural infrastructure to a certain extent, and provide a certain amount of direct subsidies to those who buy large agricultural machinery and irrigation facilities. Finally, it is necessary to further improve the comprehensive agricultural development, small water conservancy construction, land arrangement and management, commodity food base construction project management, strengthen overall coordination of the use of the funds for supporting agriculture, carry out the comprehensive improvement of farmland, construction of high standard farmland, and create conditions for the agricultural scale operation.

4.4 Building agricultural socialized service system and striving to improve service levels It is necessary to make full use of public service, strive to build a new type of agricultural socialized service system, and promote the public welfare and business services. Government departments at all levels should accelerate the construction of agricultural service facilities, improve basic public welfare service environment, increase financial support and improve the public service organizations to enhance the level of agricultural services and achieve specialized services from planting to harvesting.

4.5 Deepening reform of the rural financial system and optimizing the agricultural financing environment It is necessary to give full play to the role of commercial banks, simplify loan procedures, increase agriculture credit, and give loans discount to scale operators, in order to reduce the cost of borrowing. For rural financial institution innovation, we should encourage and develop new types of agricultural financial institutions such as small loan companies, increase farmers' capital support to meet the needs of agriculture, farmers and village, build diversified rural financial system, and make efforts to improve the level of financial services. There is also a need to further improve the system of agricultural policy insurance to provide a strong guarantee to scale operators by increasing the coverage and premium subsidies.

References

[1] SUN JF. Basic economics[J]. Dongbei University of Finance and Economics Press, 2003.
[2] LI BL. The ideas and initiatives to promote moderate scale operation of grain [M]. Chinese Village Found, 2013: 21 -27.
[3] WANG HL. Ideas on problems and countermeasures on moderate scale management and land circulation[J]. Industrial Economy, 2011(2):225.
[4] XU YX. Discussion on promoting rural land moderate scale management [J]. Anhui Agriculture Bulletin, 2009, 15 (23): 12 -13.
[5] LI CG. The present situation, problems and countermeasures of agriculture moderate scale operation in Henan Province[J]. 2013, 35 (1): 37 -42.

(From page 5)

6 Conclusions

The mutual cooperation between logistics industry and financial industry, and the implementation of the logistics finance business of agricultural products, is a good way to achieve all-win among logistics companies, small and medium-sized agricultural enterprises and financial institutions. The combination of logistics and finance can not only bring new profit growth point for the modern logistics enterprises, but also solve financing problems for the small and medium-sized agricultural enterprises, and promote the development of China's rural financial services. In this study, we build a risk evaluation indicator system for the logistics finance of agricultural products, use Fuzzy-AHP model to evaluate the logistics finance risk of agricultural products, and find the key factors that affect the implementation of the logistics finance business of agricultural products, to help logistics finance business entities to develop more effective risk prevention measures.

References

[1] Editorial. Collaboration in logistics[J]. European Journal of Operational Research, 2003:144.
[2] Martin Christopher. Martin Christopher Logistics and Supply Chain Management – Strategies for Reducing Cost and Improving Service[M]. Beijing: Publishing House of Electronics Industry, 2003.
[3] XU HL. The discussion summary of the foreign agricultural products green logistics development[J]. China Business and Market, 2012, 26(1): 27 – 28. (in Chinese).
[4] T. E. Gradel & B. R. Allenby. Industrial symbiosis[M]. SHI H(Translator). Beijing: Tsinghua university Press, 2004. (in Chinese).
[5] PANG Y, YI JL. Study on risk prevention in developing agricultural produce logistics finance[J]. Logistics Technology, 2012, 31(8): 7 – 9. (in Chinese).
[6] PANG Y, XIA YK. Evaluation of green logistics level of Chang – zhu – tan City Cluster[J]. Logistics Technology, 2014(11): 227 – 228.
[7] TAO YH. How to make fuzzy consistent judgment matrix of the FAHP? [J]. Journal of Sichuan Normal University(Natural Science), 2003, 23(3): 282 – 285. (in Chinese).
[8] XU SB. An applied decision making method and the principle of analytic hierarchy process[M]. Tianjin: Tianjin University Press, 1988. (in Chinese).
[9] GUI L. Discussion on financial backing and innovation of logistics development[J]. Shanghai Finance, 2006(2): 70 – 71. (in Chinese).