

Significance of cultivation of new agricultural management subjects for the development goal of modern agriculture: a perspective review

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Abstract: Along with the industrialization, urbanization and globalization deepening, China's agriculture faced with the development bottleneck of "who farming and how farming". Back to the founding of new China era, the traditional agricultural organizations are difficult to achieve agricultural modernization, such as farmers' mutual aid group, agricultural cooperatives, the people's Commune and family contract management. Therefore, it is imperative to cultivate and develop new agricultural management subjects for the goal of Rural Revitalization and agricultural modernization in China. A review combined with related literatures, the paper combs and refines the mechanism of different types of new agricultural management subjects to promote modern agriculture. This is of great significance for eliminating misunderstandings of new agricultural management subjects and allowing full play to their driving roles in China. The paper elaborates and proposes to vigorously promote the development of new agricultural management subjects such as professional households, family farms, farmers' professional cooperatives, farmer' shareholding cooperation and agricultural enterprises, which can promote the specialization, institutionalization, organization and marketization of agriculture, and effectively overcome the problems of low efficiency, high cost and weak effectiveness of traditional agricultural operation organization, so as to speed up the process of agricultural modernization in China.

1. Introduction

Since the twenty-first Century, with the rapid development of industrialization, urbanization, marketization and internationalization, the rural areas have undergone profound changes, and agricultural production is facing severe challenges. First, the transfer of rural labor force to cities and



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towns. The structural contradiction of rural labor is prominent. Agriculture is facing the problem of no successor. Second, the constraints of agricultural resources and environment are aggravated, and the contradiction between the rigid demand growth of agricultural products and the traditional agricultural development way, which is driven by resources and labor input, is unsustainable. Third, the market risk of agriculture and the pressure of international competition are increasing, as well as the increasing demand for food quality and safety of urban and rural residents, which poses a severe challenge to the traditional agricultural development mode, which is mainly characterized by small farmers. These challenges inhibit the future development of China's agricultural operation. How to further break through all bottlenecks restricting the operation of agriculture and effectively solve the problem of "who will cultivate land" and "how to cultivate land"?

The Report of the nineteenth National Congress of the Communist Party of China clearly put forward the "cultivation of new agricultural management subjects"; "Opinions of the CPC Central Committee and the State Council on implementing the strategy of Rural Revitalization" further proposed that "to give consideration to the cultivation of new agricultural management subjects and support small farmers", "pay attention to the driving effects of the new agricultural management subjects". To cultivate and develop new agricultural management subjects is imperative [1-2]. The basic viewpoints of the scholars are: on the basis of the household contract management, we should speed up the cultivation of the new agricultural management subjects, and focus on the development of professional households, family farms, farmers' professional cooperative organizations and agricultural leading enterprises, and actively develop a variety of forms of moderate scale management, and build a combination of intensive, specialized, organized and socialized agricultural management system.

2. The professional households promote the efficiency agriculture by deepening the rural labor socialization division

Professional households were grown up under the background of Chinese government supporting the development of grain production and curbing land abandonment. Compared with the traditional mode of management of decentralized peasant households, the level of the scale, mechanization and intensification of agricultural production are increasing by professional households, which is significant in improving the production of agricultural specialization and promoting the increase of farmers' income and the progress of agricultural technology.

Firstly, the development of large professional households will help to reduce farmers' concurrent business behavior and improve the comprehensive benefits of agriculture. Previous research showed that, compared with the pure non-agricultural households and pure agricultural households, per capita income of households with combined occupations is lowest [3]. The long-term existence of farmers' concurrent business behavior is the main reason leading to the marginalization of agriculture and the low efficiency of agriculture. The data of Longwen District of Zhangzhou city in Fujian Province showed that the development of large agricultural households can increase agricultural output value, increase agricultural labor productivity and the commodity rate and the income level [4].

Secondly, the professional household has more favorable conditions for agricultural mechanization and technological progress. Under the support of the government, a large-scale grain-production household in Yueyang city not only realized mechanization of rice planting, but also

provides mechanical operation services for other farmers around the areas [5]. Wang Xiaoping [6] investigated 520 households in Jingzhou city. The results showed that the technological progress of the professional households was significantly higher than that of the general farmers.

Thirdly, the development of professional households is more likely to evolve or generate other forms of agricultural organization. The professional households of the Guanyun County in Northern Jiangsu Province were observed, and some of the first wealthy professional households were invested in setting up a new type of joint stock cooperative private enterprise [7]. It was found that farmers' demand for professional co-operatives was stronger with the increase of the cultural level of the household and the enhancement of cooperation consciousness [8].

3. The family farms achieve agricultural Reducing cost and efficiency increasing by means of the institutional innovation in agricultural production organization

The institutesl change from family contract to family farm is a result of the potential profits induced by scale management, technological progress, and specialty division and so on. Zhu Xuexin [9] defines family farm as a modern agricultural organization form, which is characterized by modern technology, scale management and enterprise management. Compared with the traditional family contract system, family farm system has the superior advantage.

On the one hand, family farms not only inherit the advantages of family management, but also overcome the drawbacks of family management. The family farm, based on Farmers' families, can adapt well to nature of agriculture and also meet the requirements of high flexibility, consciousness and sense of responsibility for agricultural production. Family members have strong self-motivation, so as to ensure the enthusiasm of agricultural production. From retail farmers to family farms, scale of agricultural operation and capital investment are increasing continuously, and management and operation level is continuously improving. The family farm, characterized by the market-oriented orientation, the intervention of the modern production factors, the specialization of the division of labor and the mechanized scale economy, is free from the traditional household contract responsibility system to divide equally the land usage power, which is caused by the cultivated land broken bits, concurrent behavior and low efficiency in agriculture.

On the other hand, family farms can effectively reduce market transaction costs, and have obvious comparative institutional advantages. The research results of Wu Kaiqun [10] showed that family farms can use cooperatives to reduce the price of the agricultural means of production and the transaction costs of agricultural products market, and reduce the cost of financing by credit cooperatives. The effective labor incentive and constraint mechanism can reduce the transaction of the labor market. The improvement and implementation of China's national policies and policies will also help to reduce transaction costs in land market. It can be seen that the development of family farms will effectively overcome the problems of high cost, low efficiency in agriculture.

Moreover, family farms are more advantageous to ally with and cooperate with other agricultural organizations. Compared with the strength of capital, the family farm is relatively weak. With the help of technological innovation, the system innovation of the agricultural cooperative organization should be adopted to promote the development and expansion of family farms. For example, family farms and farmers' professional cooperatives can cooperate effectively through the integration, contract formation, and establishment of company farms [11].

4. The farmers' professional cooperatives promote the modernization of agriculture by improving farmers' organizational level

Before the implementation of the household contract responsibility system, the farmer mutual aid and cooperation organization was the main form of agricultural operation organization in China. However, no matter the farmer mutual aid group or the farmer cooperatives in 50s and 60s twentieth Century, they failed to make farmers rich, agricultural development and rural prosperity. The cause of the failure of the traditional cooperative economy lies not in the invalidity of the form of the cooperative organization, but in the cooperative system in the planned economy, which separates the labor and remuneration, the farmers and the market, and erased the enthusiasm of the farmers, and eventually leads to the loss of the agricultural cooperation. The fact is that after the reform and opening up, when a single peasant family faces unavoidable natural risks and market risks, farmers' demand for mutual aid and cooperation is more and more intense. In 2006, the government promulgated the law on farmers' professional cooperatives to comply with the needs of developing cooperative economy. Compared with the traditional cooperative organizations, the farmers' professional cooperatives will better build a bridge between the farmers and the market, stabilize the agricultural income and promote the development of agricultural industrialization.

For one thing, the development of professional cooperatives can effectively alleviate the contradiction between small production and big market. With the advancement of China's agricultural marketization process, facing the market environment of frequent fluctuation of agricultural products prices, small-scale farmers are in a weak position in the aspects of agricultural purchase and agricultural products sales, and the cost of market transaction leading to high, and difficulty to guarantee the stable agricultural income. This means that under the condition of lack of effective market intermediary, millions of households are not able to effectively connect with ever-changing market. As a mutual aid economic organization voluntarily participated by farmers and professional cooperatives have increased the income of farmers and reduced the expenditure of farmers by participating in centralized sales of agricultural products and the centralized purchase of agricultural means of production. With professional cooperatives, farmers have enhanced the ability of farmers to resist natural and market risks, and better achieve the effective docking with the market.

For another thing, professional cooperatives are the carriers of agricultural industrial organization suitable for the transfer of surplus labor. "Farmers' Professional Cooperative Law" clearly points out that "farmers' professional cooperatives, with their members as the main service object, provide the purchase of agricultural means of production, the sale, processing, transportation, storage of agricultural products, technology and information related to agricultural production and management". It can be seen that the professional cooperatives will turn the external transaction relationship into the internal transaction relationship in the various links of the agricultural chain, and share the risks with the farmers and reduce the transaction cost. The study of Lian [12] showed that the development of farmers' professional cooperatives can not only promote the development of the integrated agricultural industry, but also effectively absorb the employment of agricultural surplus labor.

5. The farmers' shareholding cooperation accelerates agricultural modernization through reforming property rights of collective assets

Rural collective economy is an important part of China's economic development. China has experienced profound lessons about how to manage rural collective assets and how to arrange the property rights of rural collective assets. The people's commune is a failed attempt to manage rural collective assets in China. The system arrangement of the people's commune is a form of public property right, that is, collective assets belong to the whole community, and "the Co-ownership is not and cannot be objectified on each member" [13]. "Since the common property rights are not exclusive within the community, the cost is shared by the members of the community, which leads to the congestion of the use of resources and reduces the efficiency of the long-term utilization of resources" [14]. Therefore, in order to develop the rural collective economy, it is necessary to change the form of public property rights, introduce the shareholding system into the cooperative system, and promote the reform of the collective ownership cooperative system in rural areas.

The farmers' joint stock cooperation quantifies the shares of collective assets through the agglomeration of land and capital, and changes the common property rights system of farmers to create a system innovation for farmers to enjoy the income of collective assets in accordance with their shared property rights system. This kind of property right system has reduced or cancelled collective shares, and has realized the "Pareto improvement" through folding shares to farmers to complete the individual property rights of them. Therefore, the development of farmers' shareholding cooperative system is not only conducive to safeguarding the material interests of farmers, but also of great significance for promoting rural urbanization and the development of collective economy.

In the first place, the farmer shareholding cooperative system effectively liberated the dependence of farmers on collective assets and promoted the transfer of rural labor force to urban areas. In the process of promoting industrialization and urbanization, it is inevitable for a large number of agricultural population to flow to cities and towns. However, many farmers do worry that when land is expropriated or transferred to the public, they will lose the right to enjoy the rights of collective assets, which will further obstruct the expansion of cities and towns. In order to eliminate these concerns, joint stock cooperation, by converting collective assets into stock and converting the ownership of asset into equity, and "transforms from physical form to value form", which guarantees the farmers' rights to the income of collective assets, and brings economic benefits by holding or transferring shares after being transferred to the public. This has formed a huge push for farmers to leave the countryside and effectively promoted the transfer of agricultural population to urban areas. For example, Nanhai District in Foshan City of Guangdong Province [15] and Jiangdong District in Ningbo City of Zhejiang Province [16] is the beneficiary area that implements farmer share cooperation system.

In the next place, the implementation of farmer share cooperation can better allocate all agricultural production factors and develop modern agriculture through advanced management. Zhang Yunhua [17] took Jiangsu Province as an example to introduce the cooperative farm formed by the village collective and the land share cooperative on the basis of the land share cooperation, and carry out the specialized contracting, which not only effectively uses the capital and organizational advantages of the village collective, but also makes full use of the land, the machinery and the labor force. As a

result, the efficiency of agricultural production has been improved. Moreover, the innovative management system of “land share cooperation and production professional contract” adopted modern management methods such as professional contract, clear responsibility and performance appraisal to solve the outstanding supervision and incentive problems in agricultural production, and thus promoted the development of agricultural modernization.

6. The agricultural enterprises allocate agricultural resources in a market-oriented way to lead the modernization of agriculture

In ancient China or before the reform and opening up, there were few agricultural enterprises in China because enterprises evolved in the market competition, and they are the outcomes of market economy development. When the market subject allocates resources by the means of market with higher transaction costs, it will make the administrative arrangements of the bureaucratic organization and the internal organization of the organization to configure the resources. Thus, the market subject is inclined to replace the external market mechanism with the internal organization. In this way, the market subject will participate in the market transactions in the form of enterprise. Compared with the administrative plan of the co-operatives and the people's communes, the agricultural enterprises are engaged in intensive management in the way of clear property rights, independent management and equal contracts. Therefore, the organizational form of agricultural enterprises will optimize the allocation of capital, technology, labor and other production factors, and promote the farmers' specialization, scale and intensive production to improve the efficiency and competitiveness of agricultural production in an all-round way.

First of all, the successful experience of developing the large capitalistic companies and large enterprises to realize the agricultural scale benefit [18] can be the important reference for the development of agriculture in China. For example, in 1950s, American agriculture absorbed a large amount of social capital and established a vertical integrated agricultural company of production and marketing. It operated through internal integration, contract, and material service and so on. It had the characteristics of specialization, mechanization and socialization, which greatly improved the productivity of labor and the efficiency of social service. After World War II, the agricultural enterprises in Germany mainly participated in the process of agricultural industrialization through the way of cooperation with cooperatives. Since 1990s, France has made great efforts to develop companies or enterprises in the form of contract. By signing a contract for production and marketing with agricultural workers, companies or enterprises provide farm workers with seedlings or seeds, feed and mechanical equipment to preserve and develop the form of family labor. Despite the different forms, the advanced experience of developed countries in developing modern agriculture is inseparable from the successful operation of agricultural enterprises.

Secondly, according to the theory of Growth Pole, the development of agricultural leading enterprises can not only promote the growth of agricultural economy, but also benefit the other agricultural industrialization links because of the “Expansion Effect” [19]. Under the expansion effect, agricultural industrialization links with low development gradients will benefit from the spillover effects of agricultural leading enterprises. For example, Zhang Yongqiang [20], taking Heilongjiang Province as an example, found that the agricultural leading enterprises have a knowledge spillover effect on family farms. It is suggested that the “agricultural leading enterprises + family farm” or

“leading enterprises + cooperatives + family farm” should be used to improve the market advantage of family farms.

Finally, by innovating with the operation mode of agricultural industrialization and avoiding the “Backwash Effect” of agricultural leading enterprises, we can earnestly safeguard the interests of farmers. The theory of Growth Pole enlightens us that the agricultural leading enterprises will increase their competitiveness and influence increasingly because of their continuous enhancement of self-ability and the continuous improvement of their investment environment, which compels the “low gradient” link to be in a relative disadvantage. In reality, the agricultural leading enterprises can take advantage of their own capital, technology, price monopoly and other advantages to buy agricultural products from the farmers at low prices, and then sell high value-added products at high prices after processing, and make the enterprises develop rapidly by partially depriving agricultural profits. Therefore, “leading enterprises + farmers” is not the best development mode, it is easy to generate “Backwash Effect”, which will damage farmers’ interests. In order to avoid the “Backwash Effect”, we must innovate the organization mode of agricultural industrialization operation— “agricultural leading enterprise+ cooperative + peasant household” mode. By combining the retail groups to build up the cooperatives that represent their own interests, the co-operatives will negotiate with the enterprises and sign the contract, which can not only reduce the transaction costs of the enterprises and farmers, but also enhance the farmers’ right of discourse and management, so as to better protect the farmers’ interests.

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