

Study on the Development Model of Family Farms in Hilly Areas of Sichuan Province

Hongyu Lian^{1, a}, Haoyuanyu Huang^{2, b}

¹School of Tourism and Cultural Industry, Chengdu University, Chengdu 610100, China

²School of Business, Chengdu University, Chengdu 610100, China

^a754353405@qq.com, ^b124175001@qq.com

Abstract. In 2013, the concept of "family farm" appeared for the first time in "No.1 Central Document". The Central Committee proposed that "encourage and support the transfer of contracted land to large professional households and family farms". The development of family farms can provide a new development direction for realizing agricultural modernization and promoting the transformation and upgrading of agricultural industry. It is also the key to solve the "three rural issues". This paper examines the current situation and existing problems of family farms in hilly areas of Sichuan Province, and puts forward the innovative mode of improving the level of diversified mechanization of agriculture and the efficiency of family farm cultivation, increasing financial support and financial innovation under the guidance of the government, and combining diversified mechanization with financial innovation to develop family farms.

Keywords: Hilly area, Family Farm, Development mode, Sichuan Province.

1. Introduction

Family farm is a new type of agricultural management subject, which is engaged in large-scale, intensive and commercialized production and operation of agriculture and takes agricultural income as the main income source of the family. The characteristics of moderate-scale operation of family farms break through the limitations of small-scale land management, difficult to build rural infrastructure, high long-term cost of agricultural production and difficult to improve the level of agricultural science and technology brought about by the household contract responsibility system, which effectively improves the land use efficiency, promotes the socialization of agricultural production and increases the efficiency of farmers' operation. At present, the development of family farms in China is gradually transiting from the initial stage to the middle stage. Domestic experts' research on family farms mainly focuses on conceptual connotation, operational mechanism and path selection. For example, Huang Shiwei and Wang Yu (2014) proposed that the connotation of family farms should be understood from five aspects: labor force, land nature, scale of operation, mode of capital accumulation and type of main body of operation. [1] Liao Yi and Lan Yong (2017) proposed that in order to speed up the cultivation and development of family farms in the future, we should start with perfecting the relevant legal system, improving the comprehensive quality of farmers and optimizing the service system of agricultural socialization by studying the identification mechanism, interest linkage mechanism, power mechanism and restraint mechanism of family farms and analyzing their operation results. [2] Wang Jianhua, Yang Chenchen and Xu Lingling (2016) summarized the external driving forces and realistic development dilemmas of family farm development, pointed out that the development path of family farm in the future should follow deepening technical assistance, standardizing the process of agricultural land use, effectively constructing Farm Security system, strengthening the supervision of agricultural product quality and establishing "demonstration farm" to play a demonstration effect. [3] Sichuan Province has a large area of hilly areas. Because of the unique topographic conditions and water and soil resources in Hilly areas, there are many restrictions on the development of family farms. Current research has not been able to put forward a suitable development model for family farms in hilly areas according to the characteristics of hilly areas. Taking the hilly areas of Sichuan as an example, exploring the

development path of family farms and gradually promoting the new development model of family farms to the hilly areas of the whole country are of great practical significance for solving the problems of "agriculture, countryside and farmers" and implementing the national strategy of "rural revitalization".

2. Characteristics and Current Situation of Agricultural Production in Hilly Areas of Sichuan Province

2.1 Insufficient Investment in Infrastructure and Low Efficiency of Agricultural Production in Hilly Areas of Sichuan Province

In 2016, Sichuan Province realized 111.51 billion yuan in investment in agricultural fixed assets, the overall growth rate is relatively fast, but still less than 4% of the total fixed investment in the province. Compared with plain areas in the province, the construction of road transportation, water supply and power supply, Information Engineering and other infrastructure in hilly areas are lagging behind, and the cost of agricultural investment is higher. In the process of reforming agricultural infrastructure, because of the scattered terrain and the dispersed land distribution, the cost of manpower and material resources and time is relatively high, which greatly restricts the adjustment of agricultural production structure and the improvement of land output. [4]

2.2 The Cost of Land Transfer in Hilly Areas of Sichuan Province is Lower, but the Scale of Land Management is More Difficult.

According to the Guidelines of the Office of the Sichuan Provincial People's Government on Vigorously Cultivating Family Farms to Promote Appropriate Scale Agricultural Management in 2017, the cost of land transfer in hilly areas of Sichuan Province is relatively low, and the average cost of land transfer per mu is between 300-800 yuan. However, due to the existence of slopes, valleys and hills in Sichuan hilly areas, the overlapping topography, the small proportion of agricultural land and the large slope, the various elements and endowments needed for local agricultural production, the spatial distribution and geographical combination do not match the balanced planning required by agricultural industry, coupled with less local precipitation, soil resources, water resources and other ecological resources. Pollution and destruction, consolidation of soil and water, adjustment of climate, and weakening of the function of improving ecological environment make it difficult to carry out land intensive and moderate scale management, which hinders the development of agricultural modernization. [5]

2.3 Agricultural Products Processing Industry in Hilly Areas of Sichuan is Underdeveloped and the Degree of Agricultural Products Organized Production is Low.

Sichuan hilly area has abundant quantity and variety of agricultural products. In recent years, the local government has accelerated the development of agricultural industrialization in Hilly area, and vigorously built local leading enterprises, which has promoted the development of local agricultural products processing industry to a certain extent. [6] But there are still some common problems, such as small scale, scattered distribution, excessive low-level competition, prominent homogeneity contradiction, large base of primary products, lack of famous brand products, difficulty in forming interest community between farms and enterprises, and weak industrial driving function.

3. The Current Development Model and Restrictive Factors of Family Farm in Hilly Areas of Sichuan Province

3.1 Combination Model of Planting and Breeding

The mode of combination of cultivation and breeding is the mode of family farm development, which combines cultivation with aquaculture. However, due to the need to divide part of the land for the cultivation of feed, the number of livestock produced is often difficult to meet the requirements of high-profit retailers such as supermarkets, only to supply low-profit sales channels such as slaughterhouses, with a low profit margin. Moreover, large-scale livestock breeding cycle is longer, the payback period of investment is longer (about 10 years), and the market risk is higher. It is difficult for farms to expand production scale solely by accumulated funds for their own development. It is difficult for production and operation activities to continue to circulate, and it is difficult to form economies of scale.

3.2 Interest Linkage Model

The mode of interest linkage mainly adopts the form of "branch + professional cooperative + poor household", with subsidies for household industrial development, industrial support funds, micro-credit, superior financial exclusive funds as starting funds, while absorbing household poverty alleviation funds and farmers' free funds as equity, quantifying farm income and poor household interests according to the proportion of funds allocated by each household. Benefits are linked organically. This model should not only solve the employment and basic income problems of some villagers, but also achieve sustainable profits, which requires a higher level of management and operation of the company. However, the leadership mode of village cadres such as branch secretaries and village branch books as the main responsible persons of the company lacks professional agricultural managers to participate in the decision-making process of the company, which easily leads to problems such as poor management or wrong decision-making, resulting in loss of the company. Moreover, because the source of funds mainly depends on the government, the influence of policy environment is greater, and the ability of the farm to resist risks is weaker.

3.3 Precise Poverty Alleviation Model

The operation mechanism of the precise poverty alleviation model is to support local agricultural industry and agricultural personnel, such as group support, sale and profit concession, employment, skills training and so on, so as to promote the economic development of home towns through the development of farms. Such farmers often have little information about subsidy policies for family farms, and it is difficult to find relevant consultation channels to know the application process, which often leads to the failure to apply for any operational and supportive subsidies, and also difficult to obtain professional advice on weeding and fertilization from relevant agricultural technicians. The socialized service system around the farm is not perfect, and the biogas engineering equipment and infrastructure construction such as transportation and water conservancy are not perfect. At the same time, as an advanced demonstration unit of precise poverty alleviation, such farms often provide obligatory assistance to local nursing homes and five-insurance households by giving away and selling agricultural products at low prices, which causes difficulties in operation under bilateral pressure.

4. Suggestions on the Development Model of Family Farms in Hilly Areas of Sichuan Province in the Future

According to the present situation and existing contradictions of family farms in hilly areas of Sichuan Province, we must combine the characteristics of local land resources and natural environment, solve the shortcomings of the development of local family farms, design a dual-drive family farm development model combining diversified mechanical farming and financial support and

innovation, and strengthen the training of local agricultural and economic talents, and speed up the development of local families. The implementation of relevant farm policies, regulations and systems ensures its sound and steady development, and promotes it to provide support for the "improvement of modern agricultural industry system, acceleration of agricultural science and technology innovation to ensure national food security and food safety" proposed in the 13th Five-Year Plan.

4.1 Improving the Level of Agricultural Diversification and Mechanization and Raising the Farming Efficiency of Family Farms

4.1.1 Strengthen Infrastructure Construction and Promote Moderate Scale Operation.

Peasant households in hilly areas of Sichuan should actively learn from the relevant experience of modern agricultural production and operation leading areas such as Taiwan and Japan, make rational regional planning in terms of farmland planning, land improvement and other aspects, and combine the local regional characteristics, and implement agricultural mechanization according to local conditions. According to the factors such as terrain conditions, natural environment, agricultural system and economic development level, considering the feasibility of agricultural mechanization development direction comprehensively, speeding up the research and development process of new agricultural machinery, rationally utilizing labor force, natural conditions, economic resources and policy environment, this paper sums up the feasible mode of diversified agricultural mechanization development in Sichuan hilly area, and combines with the requirements of moderate scale operation. We should make concrete and long-term plans for development strategies and paths.

4.1.2 Based on Standardized Production, Agricultural Machinery and Agronomy are Effectively Combined.

Based on the specific conditions of soil type, temperature and humidity, and agricultural management system in hilly areas of Sichuan, we should focus on investigating the cultivation and breeding of various cash crops, rice, wheat and other major crops, and summarize the high-standard and diversified mechanized agronomic normative measures with both yield and efficiency, so as to enrich agronomic types and promote agronomic development for the local area. In the future, the research and development of agricultural machinery and the application of modern agronomy will provide effective guidance. To tap all potential and actively promote the effective integration of agricultural machinery and Agronomy and the development of standardized production in hilly areas of Sichuan Province. [7]

4.1.3 To Intensify Research and Development of New Agricultural Machinery to Ensure the Supply of Technology.

In view of the current situation of shortage or incomplete application of small agricultural machinery in hilly areas of Sichuan Province, we should increase the input of scientific research forces in this area, effectively guarantee the supply of mechanized technology, intensify the development of new products and new machines, and develop small and medium-sized portable operation machinery suitable for local areas, at the same time, strengthen the test demonstration and popularization of new products and new machines, so as to promote the development of new products and tools. The development of agricultural diversification and mechanization in hilly areas of Sichuan Province.

4.2 Strengthen Financial Support and Financial Innovation to Enhance the Financing Capacity of Family Farms

4.2.1 Financial Institutions Should Accelerate the Innovation of Farm Mortgage Model.

At present, most of the family farms in hilly areas of Sichuan Province can't provide the traditional collateral needed by financial institutions. It is suggested that local financial institutions increase the research on the innovation of the mortgage model of family farms. We should start with accelerating the establishment of the registration of the right to confirm the agricultural mortgage, innovating the

mortgage and improving the land credit system. We should try to open up the rural residential mortgage loan, allow the farmers' right to land circulation and operation to become the security mortgage, and expand the farmers' right to dispose of assets. We should also carry out the mortgage innovation of the means of production of family farms, so that vegetable greenhouses and agricultural instruments can enter the scope of loans, and establish a reasonable mortgage evaluation mechanism for agricultural means of production, and improve its mortgage procedures. In addition, the right to land management or the foreseeable future interests of family farms can be mortgaged, and the right to benefit from production products can be mortgaged. In order to change the mentality of "free rider" in the innovation of mortgage mode, the government should also subsidize the "pioneering" cost of mortgage innovation of financial institutions, and encourage financial institutions to effectively carry out the innovation of mortgage mode of family farms.

4.2.2 Strengthening the Legal Person Status of Family Farm and Developing Various Forms of Agricultural Loans

Under the guidance of the national "Blue Sea" strategy, it is suggested that Sichuan financial institutions take the initiative to open up and explore the local agricultural loan market, increase business innovation, and develop diversified credit support schemes according to the development types and operating characteristics of local family farms, and adopt more adaptable loan terms and interest rates, especially for some production. Family farms with longer periods should extend the loan period appropriately. We should recognize the legal status of family farm enterprises, strengthen the legal status of family farmer, treat their legal personality fairly, allow them to apply for credit loans, help them get special loans different from those engaged in traditional small-scale peasant production, and facilitate their application for loans.

4.2.3 The Sichuan Government Should Vigorously Support Financial Institutions to Innovate Insurance for Family Farms in Local Hilly Areas.

Under the background of double risks in agricultural production, it is difficult for commercial insurance to carry out agricultural business, and the level of marketization of agricultural insurance is often not high. It is suggested that the Sichuan Municipal Government should make rational use of its administrative functions and give reasonable guidance through policy orientation. Firstly, it should reduce and exempt part of the tax on the related branches of agricultural business with high risk, adjust or reduce the insurance premium rate according to the actual situation, and support the agricultural insurance company to establish insurance reserve. Secondly, financial institutions should be encouraged to control the loan quota and, within a reasonable range, give appropriate financial support to the main agricultural operators who have difficulties in developing, so as to reduce the risk of developing agricultural insurance products. Thirdly, we should strengthen policy publicity to make financial institutions truly realize the importance of agricultural insurance to modern agricultural production, especially large-scale agricultural production. The government should take the initiative to promote rural financial development, avoid the occurrence of government vacancies, rationally guide the financial industry to carry out agricultural insurance work and open up the agricultural insurance market.

Acknowledgments

The paper is the result of the phased research of the "Study on the Development Model of Family Farms in the Hilly Region of Sichuan" (No. SC16XK078) in "the 13th Five-Year Plan" of the Social Science Research of Sichuan Province.

References

- [1]. Shiwei Huang, Yu Wang. Family Farm with Chinese Characteristics: Conceptual Connotation and Phase Characteristics [J]. Rural Economy, 2014 (10): 20-21.

- [2]. Ji Liao, Yong Lan. Operation mechanism and effectiveness analysis of family farms in China [J]. *Agricultural economy*, 2017 (05): 19-20.
- [3]. Jianhua Wang, Chenchen Yang, Lingling Xu. External Drive, Realistic Dilemma and Path Choice of Family Farm Development --- Based on the Realistic Investigation of 363 Family Farms in Southern Jiangsu [J]. *Rural Economy*, 2016 (03): 25-26.
- [4]. Yiqiang Zhou, Pifu Hu. Investigation and Countermeasures of financial support for family farm development --- Consideration based on the present situation of family farm development in Zhenjiang City, Jiangsu Province [J]. *Longitudinal and horizontal finance*, 2014 (01): 93-98.
- [5]. Jianjun Ding, Xuebing Wu. Analysis of the factors influencing the scale of family farm operation and its benefits based on the survey of 66 demonstration family farms in Jingmen City, Hubei Province [J]. *Agricultural Economy*, 2016 (10): 9-11.
- [6]. Chuanqi Fan, Jing Tan, Junzhong Lei. Some Thoughts on Cultivating and Developing Family Farm [J]. *Rural Economy*, 2013 (08): 91-93.
- [7]. Jinyao Zong. Accelerating the Scientific Development Strategy of Agricultural Mechanization [J]. *Agricultural Machinery Market*, 2009 (11): 22-26.