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Land Circulation and Increase of Farmers' Income: A Case Study of Dazhou City

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Abstract With adjustment of rural industrial structure, development of rural secondary and tertiary industries, and transfer of rural labor, rural land circulation is accelerating. However, due to ideas, household contract responsibility system, and lack of well-established market mechanism and effective management organizations, land circulation in Dazhou is still very slow and its contribution to increase of farmers' income is to be improved. Through survey on increase of farmers' income after land circulation in Dazhou, it analyzed plight of land circulation, in the hope of seeking feasible paths for increasing farmers' income.

Key words Land circulation, Increase of farmers' income, Dazhou

1 Introduction

Healthy and orderly land circulation is favorable for promoting agricultural production efficiency, increasing farmers' income, and boosting rural development, and it is also a core idea of 2013 No. 1 document of central government. It is recommended to guide orderly circulation of rural land contractual management right, encourage and support contractual land to flow to large specialized households, family farms, and farmers' cooperatives, develop various types of operation at moderate scale, and build a new agricultural management system. Dazhou City is situated in mountain area around Sichuan basin. Large population, little land, serious scarcity of per capita farmland, and single industrial structure lead to numerous surplus labor. Therefore, it is badly needed to walk in the front of deepening land reform, to further promote orderly implementation of land circulation in Dazhou City, establish and improve land contractual management right circulation management and service, and promote agricultural management at moderate scale and realize increase of farmers' income.

2 Rural land circulation in Dazhou City

Dazhou is a prefecture-level city in north-eastern Sichuan Province. Under the jurisdiction of Dazhou, there are 4 counties, one city and 2 districts. Dazhou City covers an area of 16600 km². Main terrains are mountains and hills, accounting for 70.70% and 28.1% respectively. Complicated terrain determines different distribution, per capita area, utilization degree, and circulation level of rural land in counties and districts of Dazhou City.

2.1 Current situation of rural land circulation in Dazhou City According to latest survey data, total area of household contractual rural land is 4.4352 million mu, there are 1.2625 mil-

lion households, 1.385 land contracts have been signed, and 1.3062 certificates of management right were handled in Dazhou City. Currently, total land circulation area is 0.5632 million mu, 0.2345 million households transferred out their land, and 0.1885 million land circulation contracts were signed. In 2009, total circulation area of rural land was 0.4213 million mu, accounting for 9.66%; in 2010, total circulation area of rural land was 0.4652 million mu, accounting for 10.58%; in 2011, total circulation area of rural land was 0.4902 million mu, accounting for 11.07%; in 2012, total circulation area of rural land was 0.5207 million mu, accounting for 11.74%; in 2013, total circulation area of rural land was 0.5632 million mu, accounting for 12.85%. These show that land circulation area increases about 0.03 million mu annually and total land circulation area will further increase.

2.2 Characteristics of land circulation in Dazhou City

2.2.1 Diversified land circulation types. Land circulation types in Dazhou include subcontracting, transfer, exchange, granting, joint shares, farming for others, leaseback and inverse contract, etc.^[2]. Major types are still subcontracting and granting, up to 0.2559 million mu and 0.1292 million mu, accounting for 49% and 25% respectively.

2.2.2 Diversified land circulation entities. Large specialized households, joint households, family farms, and specialized cooperatives are four essential organizations of rural land circulation^[1]. Rural land of Dazhou City is mainly transferred to large specialized households, specialized cooperatives, enterprises, and other entities. By the end of 2012, 0.3289 million mu land had been circulated to households, accounting for 63%, 0.1143 million mu circulated to specialized cooperatives, accounting for 22%; 0.0603 million mu circulated to enterprises, accounting for 12%; 0.0171 million mu circulated to other social entities, accounting for 3%, showing that large specialized households and specialized cooperatives are major entities of rural land circulation in Dazhou City. Taking Dazhou County as an example, there are 565 new agricultural management households; 484 large specialized households, accounting for 85.7% of new agricultural management households;

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24 joint households, accounting for 4.2% ; 9 family farms, accounting for 1.7% ; 48 specialized cooperatives, accounting for 8.5% .

2.2.3 Large scale management system. In recent years, with agricultural labor flowing to secondary and tertiary industries, the scale of rural land circulation is larger and larger^[4]. The scale of land circulation is varied in Dazhou City. On the whole, land circulation gradually forms large scale management. For example, large scale management with area larger than 10 mu is up to 55% , and small scale management with circulation area of 10 mu to 49 mu accounts for 30% . These indicate that rural land management system in Dazhou is transforming to intensive, specialized, organizational, and socialized types. Taking Dazhu County as an example, rural land circulation in 2012 reached 0.0873 million mu, accounting for 9.6% of total farmland; area of land circulated between households and large specialized households reached 0.0411 million mu, accounting for 47.1% of total circulation area; area of land circulated between households and joint households reached 0.0027 million mu, accounting for 3.1% of total circulation area; area of land circulated between households and family farms reached 0.0046 million mu, accounting for 5.3% of total circulation area; area of land circulated between households and specialized cooperatives reached 0.0389 million mu, accounting for 44.6% of total circulation area.

2.2.4 Specialized purpose of land use. Land circulated with area larger than 10 mu is mainly used for development of edible fungus, fruit, vegetable, breeding, and forestry. Developing grain crop planting area is 0.2897 million mu, accounting for 56% ; developing vegetable planting area is 0.0078 million mu, accounting for 15% ; developing fruit planting area is 0.0624 million mu, accounting for 12% ; developing animal husbandry is 0.0416 million mu, accounting for 8% ; developing other industries 0.0558 million mu, accounting for 9% . Circulated land gradually forms land use type with planting as primary, breeding as auxiliary, and other industries as supplement.

2.2.5 Standardized land circulation. In the past, land circulation is mainly completed by farmers spontaneously, and the participation of local government and social intermediaries is little. It is mainly manifested as exchange of contractual land between farmer households, farming for others, and subcontracting. They determine land circulation relationship mainly in the manner of verbal agreement, so the circulation relationship is not stable. With increase of total land circulation area, extension of land circulation period, and increasing active circulation, intermediaries participate in circulation in decentralized households^[3]. At present, 7 counties (city and districts) of Dazhou have established 6 arbitration authorities for land circulation, competent authorities also have printed uniform land circulation contract, so the land circulation model and procedure become more standardized.

3 Land circulation in Dazhou City promotes increase of farmers' income

3.1 Farmland circulation promotes increase of farmers' income Farmland circulation in Dazhou City is mainly reflected in expanding large scale circulation and changing management model. For example, Tongchuan District establishes harmless vegetable base in "company + specialized organization + farmer household". Apart from obtaining land rent up to 800 yuan/mu annually, farmers become workers of such company and can obtain monthly wage of 1000 yuan. In busy farming season, some farmers can obtain 80 yuan/day wage through working in bases. Increase of income stimulates farmers to welcome rural land circulation, and realization of profit lifts enthusiasm of enterprises. Farm owners become share holders and can share bonus. Such model is share holding circulation. In realizing overall land circulation and expanding management scale, Dazhu County promotes increase of farmers' income. Net income per capita of households transferring out their land increased from 10495 yuan/person to 12161 yuan/person, growing about 15.9% . On the contrary, due to great increase of farmland, on the one hand, households with land transferred would partly return to agricultural field. On the other hand, through employment management, they could make up shortage of self labor, and they have realized increase of net income from 10526 yuan/person to 76170 yuan/person, growing nearly 6 times. Through land circulation, it expands area of management land, so the scale management benefit of land circulation is significant. Before land circulation, per capita area of farmland operation is only 0.6 mu, the net income per capita is only 10526 yuan; after land circulation, the per capita area of farmland operation reaches 28.9 mu, and the net income per capita is up to 76170 yuan, of which 65644 yuan comes from land circulation, accounting for 86.2% .

3.2 Forest land circulation promotes increase of farmers' income In the new collective forest tenure reform, Wanyuan City took the manner of exchanging road right with forest ownership. Through this, forest farmers in this city obtained 8.317 million yuan from circulating 0.077 million mu forest land. Wanyuan City explored a new approach of forest land circulation. Without changing nature of collective land ownership, land use purpose for agriculture, and not harming contractual rights and interests of farmers, it is required to establish "share + cooperation" land circulation mode and "base capital + bonus + labor income" land circulation distribution mode, and buy shares through taking land as certain amount in accordance with certain criterion, to reasonably promote circulation of rural waste land and energetically develop rural land stock cooperatives. For various funds and projects related to agriculture and farmers, it is required to make overall arrangement, decentralized distribution, focus on suburban promotion type, tourism compound type, and planting and breeding processing to make classified building, develop 88 joint share cooperatives, register 16 cooperatives, 5129 households become shareholders, promote 12236 households, finance 12.85 million yuan, and circulate 22508 mu land.

3.3 Waste land circulation promotes increase of farmers' income

Qu County develops high quality *Carya Cathayensis* Sarg, apple, *Zanthoxylum bungeanum* Maxim, and goat planting and breeding industries through renting waste mountains and barren hills to owners. Farmers transferring out land obtain stable land rent and also can obtain wage through working nearby, while owners obtaining waste land can plant various fruits, high quality forage grass, develop ecological breeding like big ear sheep, to realize increase of farmers' income, improvement of environment, and owners gaining profit. Qu County greened more than 10000 mu deserted mountains and hills. 10 leading enterprises participated in circulation of deserted mountains and hills, and more than 3000 households realized circulation of deserted mountains and hills. Only this project helped farmers increase income about 20 million yuan.

4 Plight of land circulation in Dazhou City

Dazhou City has made considerable achievements in land circulation, but there are still some obstacles restricting expansion of land circulation, including following aspects^[3]:

4.1 Unclear property right and subject According to provisions of existing rural land system, apart from state owned land, rural land is owned by villager collective, farmer collective, and rural collective economic organizations. However, the definition of three collectives is unclear. It is not clear about the relationship between collectives and farmers in rights and interests. And it is not clear about how farmers to exercise right of collective owned land. As a result, the status of individual farmers as ownership subjects is rejected in actual situation. In fact, subjects exercising rights are always village committees or village level groups. It is difficult to safeguard rights and interests of farmers. They are often injured parties, and forced to circulate farmland, join in cooperatives, and adjust land, and their compensation for land requisition is intercepted. Wu Manman pointed that existing land contractual management right is only the creditor's right. China's farmers do not have right to pledge or sell their land, and have to obtain approval of the collective before circulating land. Therefore, farmers' rights of land are damaged time and time again.

4.2 Not uniform land circulation willingness Zhang Dongping, President of International Education College of Henan Agricultural University, pointed that three factors should be considered for promoting rural land circulation. Firstly, farmers completely depending on land are not willing to circulate land. Secondly, farmers with major family labor working in cities have short time of farming and become part-time farmers. They will still highly rely on land. Thus, they are willing to circulate their land. Thirdly, farmers with major family members working outside for a long time have stable income source or have become urban residents, will rely less on land, and will be highly willing to circulate land management right. Difference of land circulation willingness in Dazhou City is mainly manifested in mountain areas, rivers and basins, remote areas, suburban areas, per capita land area, and purpose

of use in transferred land. According to latest statistics of farmland in Sichuan, per capita farmland area of Dazhou is 1.12 mu, ranking the 6th position in Sichuan Province. However, the difference of per capita area is great. The highest one is in Dazhu County, up to 1.18 mu, while the lowest one is in Tongchuan District, as low as 0.53 mu. The different reliance of people in different areas on the same area of land also directly influences circulation results.

4.3 Difficult large scale farmland circulation A distinctive characteristic of rural land circulation is easy circulation for forest land and waste land, but difficult circulation in large scale farmland. In Wanyuan City, one-time circulation of forest land reached 0.077 million mu, realizing income of more than 8 million yuan, and circulation of deserted mountain up to 8000 mu, realizing income of 0.8 million yuan. However, in the whole Dazhou City, except several model villages where several thousand mu farmland is circulated, it is difficult to circulate farmland in other areas. Reasons for this mainly include (i) limitation of state capital farmland protection policy; (ii) separate distribution of farmland, involving a lot of farmer households, and different reliance of farmland; (iii) natural condition of Dazhou, such as mountains and hills.

4.4 Relative low income from land circulation Although farmers increased income after circulating land, such income takes up a small portion. According to survey, land circulation income mainly comes from land rent and wage obtained after liberating from land. The total income increased, but it does not come from added value of land circulation. Low income of land circulation is mainly due to the fact that land circulated is still used for planting staple crops. As a result, it greatly dampens enthusiasm of farmers for circulating land. In future, it is recommended to incorporate farmers into scope of subjects of benefits of land circulation appreciation.

4.5 Limit safeguard of farmers' benefits Firstly, some local areas take land circulation as image projects for increasing revenue of village collectives or giving prominence to local political achievements, and intervene against land circulation by administrative means, and harm farmers' benefits. Secondly, there is a high risk in farmers' circulation income. (i) Owners fail to promptly deliver rent due to investment failure and market changes. (ii) Some owners wait opportunities to circulate land again after renting waste land and forest land, to obtain price difference, but they do not deliver rent to farmers and collectives. For example, Tubao Village and Dahegou Village in Changling Town of Kaijiang County circulated 2000 mu land, but the actual utilization of land is less than 200 mu, and the land is waste for as long as three years. Finally, after expiration of land circulation, rehabilitation of the same area is difficult. No matter for short term or long term land circulation, owners will build certain infrastructure and temporary buildings and make land consolidation. This will reduce farmland area and upset boundary of farmer's original contractual farmland. In this situation, farmers will doubt about

whether they can receive their original land after expiration of land circulation period.

5 Recommendations for safeguarding farmers' income in land circulation

5.1 Making clear property right of farmland and implementing subject status of farmer households The issue of property right of farmland is a widespread issue. Therefore, it is required to make clear property right of farmland, implement subject status of farmer households, and grant farmers with complete land contractual management right. In the opinion of Shao Jian, to implement subject status of farmer households, it is required to formulate Land Property Law, change contractual property or creditor right of land right, replace land contractual right with land use right with strict sense of property right law. In other words, it is to make contractual right become property right, to safeguard land property right of farmers in independence and certainty. Li Pinglong believed that it is recommended to improve existing organization structure of village committees, so as to solve vacancy problem of subject status of collective land ownership. Zhong Wei stated that it is recommended to further stabilize land contractual right of farmers, grant definite land disposition right on the basis of sticking to the household contractual responsibility system, exercise rights of transference, renting, buying shares, and pledge, and implement the permanent tenancy in areas where condition permits.

5.2 Increasing benefits of land circulation and stabilizing land circulation relationship Only through increasing benefits of land circulation, may the parties of land circulation obtain more benefits from land circulation and may it be able to attract more farmer households to participate in land circulation. Land circulation relationship without economic benefits is not stable. Local government should make effort to increase output of land circulation and help land operators to increase economic benefits. Firstly, it is recommended to focus on benefit, establish land circulation market price system with local characteristics relying on science and technology and industrialized operation, and stimulate more farmers to transfer out their land to land operators with higher output level. Secondly, it is recommended to further promote land operation at moderate scale, help farmers to reduce production cost, and stabilize land circulation relationship with scale benefits. Thirdly, it is recommended to urge contractors to perform contractual obligations and implement contractual price, and establish mutual trust mechanism between the parties of land circulation.

5.3 Accelerating promoting agricultural industrialization and increasing land circulation benefits Promoting rural land circulation and implementing operation at moderate scale largely depend on local economic development level and agricultural industrialization. Without promotion of large-scale, high level, and high efficient agricultural industrialized leading enterprises and large breeding and planting households, it is difficult to make

breakthrough in land circulation and large scale operation of Dazhou City. Therefore, it is required to accelerate promoting agricultural industrialized operation on the basis of agricultural resources, technology and industry advantages of Dazhou City. In the first place, it is recommended to carry out centralized, intensive and large scale operation in the planning. In the second place, it is recommended to increase input, energetically develop facility agriculture, and ensure material demand of project construction. Besides, it is recommended to greatly extend new agricultural varieties and technologies, implement standardized production and famous brand strategy, and boost agricultural competitive power of Dazhou City. Finally, it is recommended to adopt the "company (or cooperative or large household) + base + farmer household" industrialized operation model, give into full play radiation of cooperatives or large households in agricultural industrialized operation, expand scale of land circulation, increase comprehensive benefits of large scale land operation, and ultimately reach the objective of increasing farmers' income, increasing agricultural efficiency, and enhancing rural stability.

5.4 Increasing support for land flow-in subjects Firstly, it is recommended to circulate rural land relying on projects. The sequence is as follows: project promotion, government guidance, determination of development projects, land circulation, and large-scale operation according to project demand. Land circulation funds of farmers are mainly assumed by project investors, and properly subsidized by county and township finance.

Secondly, Dazhou City should accelerate development of socialized services. (i) Speeding up construction of public welfare agricultural service system. Especially in construction of public welfare agricultural infrastructure such as water conservancy and roads, it is recommended to increase government input to provide necessary services and conditions for operators. (ii) Actively promoting development of specialized farmers cooperative economic organizations and family farms. Through specialized farmers cooperative economic organizations and family farms, it is expected to provide development force for large scale operation and raise the organizational degree of agricultural production. (iii) Supporting development of specialized households and operation companies through providing services for supply, production, and sales of large-scale operation, so as to raise the service level.

Thirdly, it is recommended to improve supporting policies. Development of large scale land operation changes original operation organization. Compared with present laws and regulations, and management rules, there are some blank points which need further improvement. Examples include implementation methods and support objects of financial support, use and management methods of agricultural resources, and agricultural insurance. It is recommended to make proper adjustment of existing policies and management methods from the perspective of active adaptation and support, to promote rapid and healthy development of large scale operation of rural land.

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grain production of 8 provinces shows increasing returns to scale. These provinces are mainly distributed in eastern areas, while returns to scale of central and western areas are mainly decreasing. Average drop of TFP of grain production is up to 4%, more than 50% provinces have TFP lower than 1. TFP of eastern areas is higher than central and western areas. The implementation of urbanization is helpful for promoting increase of grain production technology efficiency in central and eastern areas, but it will exert negative influence on western areas. Therefore, in the serious situation of grain production, it is recommended to properly determine urbanization rate according to local situations, enhance raising grain production technology level, and increase grain production technology efficiency and total factor productivity, to ensure safe grain production.

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5.5 Establishing and improving land circulation security mechanism Firstly, establishing and improving rural land circulation service system. It is recommended to set up land circulation service center with fixed personnel, fixed post and fixed funds, to collect and issue land circulation information, and carry out land circulation registration management, and guide land circulation contract signature, and urge the implementation of land circulation contract. Secondly, making positive exploration to establish long-term mechanism for land circulation through market adjustment. It is recommended to take full advantage of achievements of land assessment, collect and issue land circulation market price and information, determine proper land price according to market supply and demand relationship, and circulate rural land on a large scale. Ultimately, it is expected to realize legal, standardized and programmed land circulation. Thirdly, enhancing training of rural labor, especially in agricultural practical skills, producing vegetable, planting technologies, and animal husbandry skills, and providing labor export

guidance and service, to promote liberation of more farmers from land. Finally, it is recommended to establish and improve coordination, mediation, correspondence and visitation, arbitration, and judicial channels to solve problems of disputes of rural land contract, to properly settle disputes arising out of land, and to safeguard rural land circulation.

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