INSTITUTO
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Institutional Innovation of the “Agricultural Co-Operation System”: An Examination of Chongzhou, China

ZHAO Haoyu

Doctor of Management

Supervisors:
PhD Nelson Santos António, Professor
ISCTE University Institute of Lisbon
PhD Xiao Wen, Professor
University of Electronic Science and Technology of China

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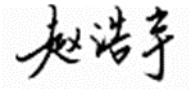
Signed:  Date: 2022.3.6

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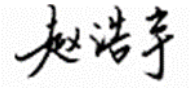
作者签名：  日期：2022.3.6

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Abstract

Located in southwest China, Chongzhou is a major agricultural county and grain producing area. The rural population accounts for 47 percent of the total population, however, the percentage of rural migrant labor is as high as 85 percent. It is a typical area facing four constraints of "fragmented land, fragile labor, dispersed capital and shortage of services" and a challenge to national food security brought by non-agriculturalization and non-grain production. Through a grassroots innovative experiment and further promotion, Chongzhou has successfully solved the dilemma and became a "national case" for China's agricultural operation. How a grassroots innovative practice was "institutionalized" to a national modern agricultural operation system innovative practice has great research values.

This study adopts the grounded theory method, and conducts field work on main participants in the "Agricultural Co-Operation System". On the principles of "constant comparison" and "theoretical sampling", through open coding, axial coding, selective coding and the theoretical saturation test, a theoretical model is developed, then a dialogue with the literature is conducted. The theoretical analysis focuses on the property rights foundation, the environment, the driving forces and the performance of the institutional innovation. The process of institutional change is discussed. This study expands the application of institutional research in Chinese managerial context and develops the theory constructing. This thesis has theoretical innovation and practical implication which can be generalized and replicated nationwide in China.

Keywords: "Agricultural Co-Operation System"; Institutional innovation; Institutional change; Chongzhou; Grounded theory

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Resumo

Localizada no Sudoeste da China, Chongzhou é um grande municipio agrícola e uma área produtora de cereais. A população rural representa 47% da população total, contudo a percentagem do trabalho rural migrante é de cerca de 85%.Trata-se de uma área típica que enfrenta quatro constrangimentos: "terreno fragmentada, trabalho frágil, capital disperso e escassez de serviços" e é um desafio à segurança national alimentar trazido pelo abandono das terras e a falta de produção de cereais. Através de uma experiência inovadora ao nível das bases e posterior divulgação, Chongzhou resolveu o problema e transformou-se num "caso nacional" para as operações agrícolas chinesas. Como uma prática inovativa das massas foi "institucionalizada" num sistema nacional inovador da agricultura moderna tem grande valor de pesquisa. Este estudo adota o método da "*grounded theory"* e conduz o trabalho de campo junto dos principais participantes do "Sistema Agrícola de Co-Operação". Seguindo os princípios de "comparação constante" e "amostragem teórica", através dos "códigos abertos", "códigos axiais", "códigos seletivos" e do teste da saturação teórica, desenvolvemos um modelo teórico e seguidamente estabelecemos um diálogo com a literatura. A análise teórica foca-se nas fundações dos direitos de propriedade, na envolvente, nas forças condutoras e no desmpenho da inovação institucional. Discutimos também o processo de mudança institucional. Este estudo estende a aplicação da pesquisa institucional ao contexto gerencial e desenvolve uma teoria. Esta tese tem inoção teórica e implicações práticas que podem ser generalizadas e replicadas em toda a China.

Palavras-chave: "Sistema Agrícola de Co-operação"; Inovação institucional; Mudança institucional; Chongzhou; *Grounded Theory*
JEL: P21; P48

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摘要

位于中国西南的崇州市为中国农业大县和粮食主产区，农村人口占总人口的 47%，而农村外出劳动力高达 85%，是面临农业经营“地碎、人少、钱散、缺服务”四大困境和非农化非粮化带来国家粮食安全挑战的典型地区。该地区通过杨柳土地股份合作社的创新试验、扩面推广，破解了难题，进而上升为中国农业经营的“国家方案”。一项来自基层的创新实践如何“制度化”为一项中国现代农业经营制度值得研究。

本研究采用扎根理论的研究方法，对“农业共营制”制度创新的主要参与者开展了实地研究，按照“持续比较”和“理论抽样”的原则，通过开放性编码、主轴性编码、选择性编码及饱和度检验，构建理论模型，并与文献对话。理论分析聚焦于制度创新的产权基础、制度创新的环境、制度创新的推动者/力、制度变迁的过程以及制度创新的绩效。本研究基于中国的管理情景，拓展了制度研究在中国的应用及理论的完善，具有理论的创新性和现实实践的可复制、可推广性。

关键词：“农业共营制”；制度创新；制度变迁；崇州；扎根理论

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Acknowledgements

How time flies. After five years' hard work with I been transferred to three different cities for job reasons, my pursuit for a doctor degree is finally coming to an end. The idea of applying for the doctor program came from the systematic exploration of agricultural operation in Chongzhou, a city where I had served for nine years. The grassroots-level practice of agricultural operation there was later developed into a "national case", thanks to the support of the state, the wisdom of the masses and the joint efforts of the team. For me, if I have just gone through the practical process without theoretical research and development, it will be like giving up halfway. With the help of my supervisors, the research adopts the grounded theory method, and conducts field work. On the principles of "constant comparison" and "theoretical sampling", through open coding, axial coding, selective coding and theoretical saturation test, the theoretical model is constructed, then a dialogue with the literature is conducted. After years' writing and rounds of revising, I have finally completed my thesis. At this special moment, there are mixed feelings. As Alfred Adler once said: What defines us is not the past experience, but the meaning we give to the experience. Looking back on the hardships along the way, it has now all condensed into ambition and firmness, and turned into unspeakable gratitude.

The pursuit of a doctor degree leads me to a bigger world with more freedom. But it is a long and tough journey. No one can walk alone. Along the way, undoubtably, there are guidance, assistance, help, and companionship from others.

First of all, I would like to extend my most sincere respect and heartfelt thanks to my supervisor, Prof. Xiao Wen from UESTC. It is easy to meet a teacher with knowledge and expertise, but it is difficult to have a mentor with charisma. During my doctoral study, Prof. Xiao has given me so much theoretical guidance and spiritual support. The thesis is full of painstaking efforts and wisdom of my supervisor starting from the topic selection, structure design to thesis writing and revision. Her rigorous scholarly attitude, profound knowledge, innovative thinking and wholehearted pursuit of the true meaning of academia have a great impact on me and continuously shape my firmer pursuit of knowledge and truth. Although she has already made great achievements in her career, she still gets up early, sleeps late and works hard. She has set a very good example for me and inspires me to keep working on my own thesis when facing with tremendous pressure from work.

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To all those who have inspired me and enlightened me. It is a great honor to have friends like you in my life. I hope I will always have the luck, being bathed in the light of wisdom and hope under the brilliant starry sky.

To this great era. To those who fight as hard as I do.

To myself: dare to dream and never give up!

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光阴荏苒，岁月如梭。辗转三个城市，历时五载春秋，攻读博士历程终于接近尾声。读博之念，缘起我曾经工作过九年的崇州对土地现实问题的制度探索。这次实践成果上升为农业经营的“国家方案”，得益于国家支持、群众智慧、团队合力。对我而言，如果仅仅走过了实践路程，而没有走完理论探索的路程，那将是“半途而废”的遗憾。欣喜的是在导师的帮助下，采用扎根理论的研究方法，通过实地研究，按照“持续比较”和“理论抽样”的原则，通过开放性编码、主轴性编码、选择性编码及饱和度检验，构建了理论模型，并与文献对话，经历长达数年的构思与撰写，几易其稿，终于完成了这篇论文。付梓之际，百感交集。阿德勒曾言：决定我们自身的不是过去的经历，而是我们自己赋予经历的意义。回首一路走来的艰辛，此刻都已凝结成志与坚的淬炼，化为难以言表的感恩与感激。

读博求学，这是一条通向更广阔更自由世界的道路。但是无比艰难，十分漫长。没有人能够完全独自一人走完这条路。这一路上，需要他人的指点、引导、帮助，还有鼓励，还有陪伴。

首先向我的导师电子科大肖文教授致以最诚挚的敬意和谢意。经师易遇，人师难求。读博期间，老师给与我太多的理论指导、精神支持与思想传递。博士论文从选题立题、框架设计直至文章撰写和论文的修改，都凝结了导师太多心血和智慧结晶。她严谨的治学态度、渊博的知识、创新的思维以及对学术真谛全身心的追求，使我受益匪浅的同时，耳濡目染，持续塑造了我对求知与求是更加坚定的追求。导师虽已著作等身，却依然早起晚睡，勤于耕耘。其言传身教，教诲之恩，使得兼顾繁重工作与巨大学业压力的我，倍感激励与鞭策，不敢丝毫松懈。

感谢我的外籍指导老师 Nelson 教授，他以广阔的国际视野、深邃的思维，造就了我能纵享里斯本大学和电子科技大学强强相加的资源。其治学之道，尤其是其跨越中西文明冲突带来的务实启迪与引领，令我受益终身。Nelson 教授和夫人 Virginia 教授克服新冠肺炎疫情肆虐的种种艰辛与不便，漂洋过海到成都悉心指导，诲人不倦，令我尤为感佩！

学贵得师，亦贵得友。幸获众良师提携，得诸益友相助。兰正秋博士、孙平教授、刘海燕教授，以及罗巍、贵川、龙江等同事，在此一并致谢！

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Chapter 1: Introduction

1.1 Research background

William Petty, founder of British classical economics and the earliest macroeconomist, put forward in his Tax Theory that “land is the mother of wealth” (Petty, 1662). Land is the foundation of all factors of production. Without land, the creation of social wealth is impossible.

1.1.1 The realistic background of China’s agricultural production and operation

The dual operation system, basing itself on the household contractual operation is the main achievement of China’s rural economic institutional reform and innovation, and has played an important role in promoting China’s agricultural and rural development. With the deepening of industrialization and urbanization, the rapid flow of rural land and labor force, coupled with historical institutional heritage and agricultural characteristics, the actual pattern of agricultural operation in China has undergone tremendous changes and faces the following constrains and practical challenges (B. Luo, 2015).

(1) Land fragmentation

According to the data from China’s Ministry of Agriculture, the average farmland operated by Chinese peasants dropped from 9.2 mu (0.6 hectares) and 8.4 lots in 1986 to 7.4 mu (0.5 hectares) and 5.7 lots in 2008. In 2013, China’s 230 million households contracted 1.327 billion mu (88.47 million hectares) of farmland, with an average contracted area of only 5.77 mu (0.38 hectares). The scale economy of China's agricultural household operation is weakening.

The fragmentation of land causes a lot of labor time being wasted on the transportation between land lots, and at the same time causes the waste of the effective area of farmland, which has a negative impact on improving the efficiency of agricultural operation and increasing peasants’ income. The fragmentation of rural land results in high farming costs and low output profits, which seriously restricts the development of modern agriculture and the increase of peasants’ income, and is increasingly unsuitable for the new requirements of agricultural transformation and development. At present, China's per capita farmland area is small, the degree of land fragmentation is high, and per capita agricultural resources are in short supply. It is urgent to improve the scale economy.

(2) Part-time agricultural production and labor fragility

According to China's agricultural census data, in 1996, the proportion of pure peasants in China's agricultural households was 62.8%, and in 1999 the figure dropped to 40%. In 2008, the proportion of Jilin, Heilongjiang, Anhui, Sichuan and Zhejiang provinces was only 25.3%. According to a sample survey of 2,704 peasants in 9 provinces of China conducted by the research group of “Research on China's New Agricultural Operation System” in 2015, the proportion of pure agricultural households is only 8.54%, which shows that most peasants no longer live on farming.

In 2011, the research group of “Research on China's New Agricultural Operation System” conducted a sample survey of 931 villages in China. The data show that the number of employees in the primary industry has dropped to 38.1% of the total employed labor force. The labor force in left-behind agriculture is characterized by aging and feminization, with 39.8% of the labor force over 51 years old and 69.9% of the women. It shows that peasants tend not to give priority to agriculture anymore and the rural labor force is fragile.

The realization of agricultural modernization requires the participation of peasants. Under the social background of accelerated flow of urban and rural factors, the problems of part-time employment of peasants, fragile labor force and deserted rural areas are becoming increasingly prominent. Chongzhou is facing the problems of aging population, shortage of labor force and shortage of new labor force supply. “Who will farm” has become the primary problem in building a new agricultural operation system.

(3) Agricultural sideline production and non-grain production

According to the data from the Ministry of Agriculture, the proportion of peasants' net income from agriculture dropped from 75% in 1985 to 26.3% in 2013. As a result, peasants no longer live on agriculture, and agriculture has become “sideline”.

Statistics show that the proportion of grain planting area in the total crop sowing area was 80.34% in 1978 and dropped to 68.01% in 2013. With the transfer of peasants' contractual operation rights, grain planting has a significant downward trend. According to the results of a questionnaire survey of peasants nationwide in 2011, the grain planting area of peasants who did not participate in the transfer of agricultural land was 74.32%, and the proportion of peasants who transferred to agricultural land decreased to 60.19%. According to a sample survey conducted by the research group of “Research on China’s New Agricultural Operation System” in 2015, the results show that the proportion of rice planting area of peasants who did not participate in agricultural land transfer was 55.8%, and the proportion of peasants who transferred to agricultural land was reduced to 45.10%. As a result, the phenomenon of “non-

grain planting” is serious.

Whether from the perspective of peasants’ income structure or peasants’ production system, peasants’ input in agriculture has gradually weakened. The traditional family production mode does not meet the needs of the development of modern agriculture. Innovating agricultural production and operation methods has become the key to the development of modern agriculture.

(4) Lack of agricultural socialized service system

Agricultural socialized service system refers to a network system formed by agricultural-related economic organizations to meet the needs of agricultural production development and provide various services to operation entities directly engaged in agricultural production. Including agricultural professional services (agricultural machinery, drying and storage), agricultural brand marketing, rural e-commerce, agricultural informatization and related financial services (rural property mortgage loans and agricultural insurance). The development of these industries is crucial to the development of agriculture, but the series of agricultural supporting services in China are not dynamic enough, and have not had much incentive and influence on peasants, nor have they played a strong role in promoting agricultural development. Improving the socialized service system of agriculture is the guarantee for the effective implantation of modern production factors such as science and technology, information, capital and talents into the agricultural industry chain, and is an important breakthrough for the development of efficient agriculture, green agriculture and quality agriculture. How to improve the socialized service system of agriculture, make up for the shortage, and keep small peasants up with the pace of agricultural modernization is worthy of our attention.

The progress of agricultural science and technology is slow and there is a lack of influential agricultural products brands. Compared with the extensive and in-depth application of science and technology in the industrial field and daily life, the application of science and technology in the agricultural field is much less, the innovation of agricultural science and technology is weak, and the promotion of new technologies and new products is difficult. Compared with other developed regions in China and agricultural developed countries in the world, Chongzhou has low application of agricultural science and technology, lack of agricultural science and technology talents, weak agricultural infrastructure, low overall agricultural production efficiency and low economic benefits. In addition, agriculture in Chongzhou is also facing the problems of lack of socialized service system such as lack of funds and lack of professional organizations/teams due to low brand valuation, low market awareness and insufficient agricultural products enterprises.

To sum up, the fragmentation of land (family operation lacks scale), the weak quality of agricultural labor force (peasants no longer farm), the part-time agricultural operation (peasants do not take farming as their main business), the sideline operation of agriculture (peasants do not make a living by farming), the non-grain agricultural production, and the lack of capital and services have become the constraints on China’s agricultural production and operation. The above problems together explain the continuous “marginalization” of China’s agriculture. The phenomena of “the weak do the farming” and “the poor farmland is used for farming” have been widespread, and these constraints are bound to become important hidden dangers of national agricultural security, especially food security. With the continuous expansion of the scale of rural labor transfer, the tendency of “agricultural marginalization” will become more and more serious. This means that agricultural development face not only the realistic problem of “who will farm”, but also the deeper problems of “what kind of land to farm” and “how to farm”.

The bottlenecks and obstacles encountered by China’s agricultural development show that if the quality of China’s agricultural labor force, the capacity of peasants, and the scale of agricultural operations cannot meet the basic needs of modern agricultural development, then the related services like agricultural science and technology bank applications, modern facilities and equipment, product quality, market access, agricultural income, and farming enthusiasm from peasants may become unsustainable, and modern agriculture will therefore become an unattainable extravagant hope (He , 2009), which will eventually endanger the entire agriculture modernization and national food security. On the premise of adhering to the basic position of family operation in agriculture, how to truly innovate agricultural operation methods and accelerate the development of a new agricultural operation system is the most difficult problem facing China’s agricultural modernization process.

1.1.2 Innovation background of agricultural production and operation system

Faced with the decentralized and small-scale operation pattern under the background of household contracting, China’s current policies have been focusing on promoting the transformation of agricultural operation methods: on the one hand, through the circulation and concentration of agricultural land, improve the scale of land operation, and strive to reduce agricultural production costs and improve production efficiency; on the other hand, through the organization of agriculture, promote the socialized service of agriculture, strive to reduce transaction costs and improve organizational efficiency. In this background, all localities have encouraged practical innovations such as the transfer of agricultural land operation rights and

the concentration of large producers, the establishment of professional cooperative organizations for peasants, the connection of leading enterprises with peasants, and contract farming. However, are the trials tests feasible? Is the existing model the direction of future development? Where is the room for future innovation and development? To answer these questions, it is necessary to assess the performance of the existing representative model and its development trend.

1.1.2.1 Proposal and characteristics of new agricultural operation system

The new agricultural operation system is the integration of all kinds of agricultural product production, processing, sales and productive service entities and their relationships formed spontaneously or under the guidance of the government on the basis of adhering to the basic rural operation system and conforming to the changes in the agriculture development in rural areas. It is the general name of traditional peasants and new agricultural operation subjects under various interest relationships. It is an intensive, specialized, organized and socialized agricultural production and operation mode, and network system formed on the basis of household contracting operation. Obviously, the new agricultural operation system is proposed in contrast to the traditional small-scale peasant economy, and the characteristics of the small-scale peasant economy are as follows:

First, the main body of operation is single. More than 90% of agricultural production is carried out on a household basis.

Second, the scale of operation is small. It is mainly based on families, with a small area of farmland per household (only 1.4 mu/0.09 hectare of farmland per capita) and a small number of agricultural machineries per household. It is mainly cultivated by manpower, animal power and a small part of agricultural machinery and does not have scale effect.

Third, the natural risks are great. “High dependence on the weather”. Agriculture is highly dependent on the natural environment and its ability to resist natural disasters by adopting new technologies and new processes is weak. Facility agriculture and equipment agriculture are of low level. Agriculture is weak in nature.

Fourth, the degree of marketization is low. In view of the prominent problems of “sideline farming” and “part-time farming” of peasants, most households engaged in agricultural production basically meet the level of self-sufficiency and semi-self-sufficiency, and only a small number of farming experts, family farms and agricultural enterprises provide surplus products for the market.

Fifth, the speed of agricultural development is slow. The popularization and application of

new varieties and technologies are insufficient, and agricultural development is still largely at the stage of relying on experience guidance.

Different from the traditional agriculture mentioned above, the main characteristics of the new agricultural operation system are “‘1’ + ‘4’ (‘one basis’+ ‘intensification, specialization, organization, socialization’)”:

“One basis” refers to ensuring that the basic position of the rural operation system, that is, the “Household Responsibility System”. The ownership of land remains to the collective and the contractual right belongs to peasants.

“Intensification” refers to the operation mode of improving the output per unit area and the quality of output agricultural products through the reorganization of production factors, operation improvement and technical input on a certain scale of land. Intensification focuses on solving the problems of low quality of production factors, extensive production activities, insufficient utilization of factor resources, insufficient investment in science and technology, and “its weakness in nature” to resist natural risks. The main purpose of intensification is to improve the land output rate and labor productivity per unit area.

“Specialization” refers to the continuous strengthening of social division of labor so that people who are willing to engage in agricultural production and have the ability to engage in agricultural production can specialize in agricultural production and obtain the expected benefits that can ensure their decent life. With the continuous advancement of urbanization, the problem of agricultural labor force engaged in non-agricultural industries has become more and more prominent. Most peasants no longer take agricultural production as a profession for their survival. The phenomenon of abandoned land and lazy farming is constantly emerging, which has greatly affected food security.

“Organization”, in contrast to decentralization, refers to the organization of peasants and the production process, and the docking with the large market through the combination of peasants to solve the problem of insufficient market docking for individual peasants, including the organization of peasants and the integration of the production process. The organization of peasants is through modes like establishing cooperatives, company + base + peasant. The organization of the production process is to integrate the agricultural production process by using industrial production methods, such as the organization method of “one-stop production, sales and service; integration of agriculture, industry, trade and tourism”.

“Socialization”, in contrast to self-sufficiency, refers to the effective integration of various professional services involved in agricultural production by purchasing services and other means. For example, agricultural production requires large one-time investment in agricultural

machinery and seasonal use. Not all peasants have the ability and willingness to invest. By means of socialization and marketization, the contradiction between supply and demand can be effectively solved, and the problem of weak self-sufficiency of supporting services in agricultural production can be solved as well.

To sum up, the new agricultural operation system is a systematic collection of new agricultural operation systems formed by new agricultural operation entities through new operation methods and organizational methods on the basis of ensuring that the rural economic system remains stable and on the premise of separating rural land ownership, contractual right and operation right.

1.1.2.2 Background of institutional innovation

With the development of the times, the input and output of family agricultural production under the “Household Responsibility System” have almost reached the limit. How to achieve sustainable growth and ensure national food security is extremely urgent. With the development of urbanization, a large number of rural labor forces flow to the industry, service sectors in cities, and the phenomenon of no one farming is becoming more and more prominent; small-scale decentralized operation, the room for peasants’ income increase is gradually disappearing, and it is urgent to expand channels for peasants to increase their income. With the rapid development of the market economy, the external environment for agricultural operation has undergone major changes. Under the circumstances, decentralized operation not only faces problems such as high cost, low efficiency and poor quality, but also cannot effectively meet the market needs, let alone to cope with international market competition. It is urgent to rely on modern scale operation to improve agricultural competitiveness. It can be said that the benefits brought by the reform of the “Household Responsibility System” have been fully released, and the phenomenon of agricultural production reaching its “ceiling” has become increasingly obvious. Therefore, it is imperative to build a new agricultural operation system and further adjust the rural relations of production.

From a macro perspective, the construction of an intensive, professional, socialized and organized new agricultural operation system is conducive to solving the realistic problems of abandoned farmland, aging agricultural labor force, peasants’ part-time farming and agricultural inefficiency, ensuring national food security, promoting agricultural development, rural prosperity, and increasing peasants’ income. It helps to reach the targets proposed by General Secretary Xi Jinping that “Chinese people’s rice bowl should be in our own hands, and it should mainly be filled with Chinese food” and “the initial prosperity of a society greatly depends on

the well-off of peasants”. From the micro level, it is conducive to attracting industrial and commercial capital to the rural development of the “sixth industries” like modern planting and breeding industry, characteristic rural tourism by implanting the development concept and operation mode of modern industry and commerce into the agricultural industry to solve the problems of lack of rural capital, technology, talents and operation. It is conducive to promoting the “separation of three rights” of rural land ownership, contractual right and operation right, tackling the situation of independent household operation in agricultural development, and promoting land scale operation and agricultural industrialization operation to improve the comprehensive benefits of agriculture; it is conducive to activating the property rights attached to the rural land, liberating peasants from the land, promoting the free flow of factors between urban and rural areas, realizing the specialization of division of labor, and allowing peasants to “leave the land without losing the land”. It increases not only peasants’ property income, but also the productive income by participating in the farming industry, and the wage income by entrepreneurship and employment in other sectors, thus accelerating the urbanization process as a whole.

1.1.2.3 Agricultural production modes in developed countries

Different countries have different natural conditions, endowments and economic development levels, and agricultural operation systems are also different from country to country. However, agricultural operation systems of developed agricultural countries are still very similar in terms of property rights, social service systems, agricultural science and technology, peasants’ vocational education and government subsidies (J. Wang et al., 2016).

(1) Agricultural operation system in the United States

The United States is one of countries with the most developed agriculture in the world, the world’s largest exporter of agricultural products, and half of the world’s total food imports come from the United States. The reason why the United States has become a world agricultural power in a short period of over 200 years since its founding is due to not only its unique natural conditions, but also its agricultural operation system suitable for its national conditions. In 2000, there were 2.172 million family farms in the United States, with an average land area of 175.6 hectares (2,634 mu) per farm. American agriculture is highly mechanized and technologically advanced. The vast territory, sparsely populated terrain and the shortage of agricultural labor force have led to large-scale mechanized operations in agriculture to improve labor productivity and land productivity. According to statistics, in 2000, the agricultural economically active population in the United States was 3.04 million, and the labor force per farm was only 1.4.

One agricultural labor force could support 146 people, with an average grain yield of 5,974 kilograms per hectare, 96% higher than the world average. Thirdly, agriculture in the United States is highly market-oriented, and the goal of agricultural production is not household consumption and survival needs, but income and net profit. Peasants are a profession, agricultural products are commodities, the commodity rate of agricultural products reaches more than 98%, and two thirds is used for export. In addition, the government heavily subsidizes agricultural production. Agricultural subsidies in 2001 amounted to US $95.3 billion, accounting for 11 per cent of total farm income and 42% of net farm agricultural income, with an average subsidy of more than US $10,000 per household.

(2) Japan’s agricultural operation system

Small land area, large population with small farmland, and lack of resources have always been constraints restricting Japan’s agricultural development. In 2011, Japan’s farmland area was 4.561 million hectares, with a per capita farmland of 0.036 hectares. In 1990s, Japan encountered the same problems as China’s current agriculture, namely, abandoned farmland, aging population, and part-time agriculture. Under the dual constraints of natural and social conditions, Japan has successfully realized the transformation from decentralized operation to intensive and large-scale operation of modern agriculture through a series of system designs to improve the efficiency of land production and operation. Japan has become an agricultural power even with some world leading agricultural production technologies. Japan’s agricultural operation system mainly includes the following aspects: First, a complete legal system is formulated to promote the concentration of agricultural land, adjust the original “agricultural structure policy” to “operation structure policy”, and vigorously develop new operation entities such as agricultural cooperatives, legal persons and village operation. Through the promulgation of laws, the compulsory and semi-compulsory promotion of land to realize various forms of concentration has laid foundation for large-scale operation. The average farmland of Japan’s agricultural-economic population increased from 1.6 hectares in 2000 to 2.5 hectares in 2007. Second, the developed agricultural science and technology popularization system has boosted Japan’s intensive agricultural operation. Japan attaches great importance to the application of science and technology in agricultural production. At the central level, a popularization department will be set up in the Ministry of Agriculture, Forestry and Fisheries, an agricultural improvement popularization center will be set up at the prefecture and county levels, and an agricultural improvement popularization institute will be set up in cities, towns and villages. The three-level agricultural popularization institutions will respectively formulate agricultural science and technology popularization plans, promote and apply agricultural

science and technology achievements, train and assess agricultural science and technology talents, and coordinate scientific research institutions to conduct research on specific issues according to their service scope and service subjects. In particular, the agricultural improvement and popularization institute, which contacts peasants and agricultural enterprises, directly provides peasants with agricultural technology and livelihood improvement services. This is similar to China’s grassroots agricultural technology service stations.

(3) German agricultural operation system

Germany is a major agricultural producer and exporter in the world. The development of German agriculture benefits from its sound agricultural operation system. Germany’s agricultural operation system mainly includes two parts, one is the main body of agricultural operation, and the other is the socialized agricultural service system. German agricultural operators are mainly family farms. According to statistics, there were 290,000 family farms in Germany in 2014. The German government mainly supports the development of family farms from three aspects. First, it promotes land circulation and the expansion of family farms with a sound legal system. The second is to use the “Agricultural Pension Bank” to solve the problem of financial needs of family farms. The third is to implement tax concessions in different categories to promote the development of family farms. Agricultural socialization services in Germany are mainly provided by cooperative unions, agricultural professional federations and agricultural associations. These three types of organizations are self-organized by non-governmental organizations, and the government is responsible for supervising them in accordance with relevant laws. The cooperative alliance mainly solves the problems of agricultural product production, sales and loans. Through the cooperative alliance, the conflict between “small production” and “big market” is effectively solved, which greatly improves the operating efficiency and actual income of the members of the cooperative alliance and can effectively avoid market risks. The Agricultural Association is a non-governmental organization spontaneously established by peasants, farm owners, agricultural enterprises and other operation entities. Its main purpose is to carry out self-management and self-service. It uses the Agricultural Association as a platform to coordinate the relationship between members internally to realize the rationalization of production and marketing among members, represent the interests of all members externally, be responsible for interactive communication with government departments and all sectors of society, and put forward various suggestions to the government and legitimize them through lobbying and other means. The Agricultural Professional Federation was established through judicial procedures. It is responsible for cooperating with parliament and state organs to devote itself to agricultural development in the

production, sales, inspection and exchange of their respective industries. Such associations are organized through the judicial process and are supported by lower-level federations. They are not part of the government, but perform some functions of the government agricultural operation department. It is a semi-official and semi-civil organization. In addition, the German government also supports agricultural development by providing subsidies, improving the agricultural vocational education system, encouraging the use of new technologies, rural social security policies, and supporting the development of new energy sources.

To sum up, although agricultural operation systems of the United States, Japan and Germany vary with different resource endowments and agricultural foundations, agricultural development benefits from several similar factors: first, the property right system is complete and the legal system is perfect, which is conducive to promoting the scale operation; second, the socialized service system is perfect, which can be easily obtained through market channels before, during and after agricultural production; third, it is important to enhance agricultural science and technology investment and the popularization and application of scientific and technological achievements; fourth, it is essential to emphasize the training of professional peasants, regarding peasants as a profession rather than an identity; fifth, the government supports agricultural production, including low taxes, agricultural subsidies, scientific and technological services.

1.1.3 Innovative practice of Chongzhou agriculture

Chongzhou is located in Chengdu, Sichuan Province (see Figure 1.1). It is a county-level city under the jurisdiction of Chengdu. It is the nearest suburban new town to Tianfu Square in the center of Chengdu. Chongzhou’s geography is distributed as “40% of mountains, 10% of waters and 50% of farmlands”, covering an area of 1090 square kilometers and governing 25 townships (towns and streets). Chongzhou has a long history and an organizational history of 4,300 years. It is a famous historical and cultural city in China. According to the data of Chongzhou Bureau of Statistics, the resident population in Chongzhou is 750, 000 in 2019.

Figure 1.1 Geographical location of Chongzhou in China

Chongzhou is a major agricultural county and a major grain producing area in China. In 2019, Chongzhou achieved GDP of 37 billion yuan (5.125 billion euros), and agricultural added value 3.9 billion yuan (0.53 billion euros), accounting for 10.6% of GDP. Chongzhou is the newly added 100 billion catties of grain capacity county, commercial pig breeding county, new professional peasants cultivation demonstration county, pilot county of land operation rights as shares in agricultural industrialization operation, national modern agriculture demonstration area of awarding instead of supplement pilot county, Sichuan rape base county, rural property rights mortgage financing pilot county, forest rights mortgage loan reform county, modern animal husbandry construction key county, agricultural mechanization demonstration county, large-scale new rural construction demonstration county, peasant property income increase pilot county. As a main grain and oil producing area in Chengdu, Chongzhou bears the important duty of ensuring the basic self-sufficiency of grains of Chengdu, a mega-central city with a 20 million population. At the same time, as the gateway to Chengdu’s main urban area, Chongzhou also bears the responsibility of protecting the rural scenery and building ecological barriers.

Chongzhou, a major agricultural county, had a rural population of 586,000 in 2017, accounting for 87% of the total population. In 2019, the agricultural population was 450,000, accounting for 60% of the total population. Agricultural population accounted for a high proportion, but the education level was relatively low. In 2017, a majority of the rural population in Chongzhou was of primary school and junior high school education, and only a small part had high school education or above.

Chongzhou is a large county exporting rural labor force. In 2012, the rural labor force transferred to cities reached 73.4%, and in recent years it has risen to 85%. Compared with the income of migrant workers, agricultural income is quite low. In Chongzhou, many young and

middle-aged rural laborers with knowledge and skills choose to go out to work or start their own business. The labor force is transferred to non-agricultural industries. Agricultural production activities are mainly undertaken by the elderly, the weak, women and children. Young and middle-aged people only return to their hometowns during the busy farming season. The aging, shortage of labor force and overall low educational quality of the labor force hinder the development of Chongzhou and the development of a new agricultural operation system.

With the deepening of industrialization and urbanization, the rapid flow of rural land and labor force, Chongzhou’s agricultural operation mode has undergone major changes, mainly manifested as:

(1) The post-80s and post-90s agricultural labors do not want to farm, do not know how to farm, and are unwilling to learn how to farm. In some places, they do not take farming seriously, they ask others to farm on their behalf, and even abandon some lands.

(2) The labor force left behind in rural areas to engage in agricultural production is becoming smaller and weaker, most of which are over 50 or 60 years old. There might be a missing of farming labor in 10 or 20 years.

(3) The income of secondary and tertiary industries accounts for more than 90% of the household income, the income from farming (the annual net income of grain planted in 1 mu is about 600 yuan, or 1,236 euros/hectare) only accounts for less than 5%, and the extensive planting even accounts for only about 1% of the household income.

(4) With the accelerated development of the construction of new countryside, peasants live together, the production and lifestyle has undergone a great change, and the distance between the living place and fields has been extended, which is not conducive to single-household farming.

The problems of “fragmentation of land, part-time agriculture, weak quality of labor force, sideline agriculture, non-grain production, and low level of agricultural modernization” are becoming more and more noticeable, and the development of agriculture in Chongzhou is facing increasingly severe challenges. The 4 constrains of “fragmented land, shortage of labor force, dispersed capital and lack of services” are intensifying, and the dilemma of “agricultural marginalization” is becoming more and more serious. Chongzhou has undertaken various forms of exploration and practice to solve the practical problem of “who will farm” and the deeper problems of “what kind of land to farm” and “how to farm” in agricultural development. Since 1998, large producers have been encouraged to transfer farmlands. Due to the lack of funds, information, services and other factors, coupled with high transfer fees of leading agricultural enterprises, the transfer scale of large producers has been slow, and the scale of transferred large

producers to grain planting was less than 10,000 mu (667 hectares) in 2008. Later, leading agricultural enterprises were brought in to lease farmland for scale operation, however, due to lack of production technology and operation experience, operation was still difficult. Some agricultural enterprises transformed to “non-grain” and “non-agricultural” operation, some enterprises even broke the contract and caused the loss of peasants. Since 2003, Chongzhou has begun to develop professional cooperatives. Due to the lack of a close interest connection mechanism, peasants made choices favorable to their own interests. They worked on their own instead of scale economy. The degree of organization of cooperatives was still low. Some cooperatives were just names without actual cooperation. In 2005, Chongzhou encouraged agricultural enterprises to connect peasants and develop the “company + peasant household” contract farming mode. In this mode, when the market is low, enterprises are likely to break their promises and withdraw their investment. When the market price of agricultural products is higher than the contracted price, peasants often choose to sell by themselves. There is a lack of effective constraints.

In May 2010, to tackle the four constraints and resolve the three dilemmas, Chongzhou, following the reform of rural property rights system, guided peasants to voluntarily convert their land contractual operation rights into shares and set up the first land shareholding cooperative, Yangliu Land Shareholding Cooperative, in Liba Village, Longxing Town, to hire skilled and capable peasants to serve as professional agriculture manager (agricultural CEO) to be responsible for the production, operation and management of the cooperative land. In 2010, the land shareholding cooperative was successful, and its operating performance improved significantly, which was welcomed by peasants. Since then, Chongzhou has gradually promoted this mode to 25 villages and towns (streets), and in 2011 this mode was refined as “Chongzhou 1 + 4 modern agricultural development mode”, that is, a modern agricultural development mode with land shareholding cooperative as the core and agricultural science and technology, agricultural socialization, agricultural brand and rural finance as the support. At the end of 2012, Yangliu cooperative has attracted 281.7 mu (18.78 hectares) of land to join in, influencing an area of more than 1,000 mu (66.67 hectares). This has better solved the problems of “who will farm” and “how to farm”, promoted large-scale grain production, promoted the transformation of agricultural development mode, and created a new situation in grain and agricultural production. On August 27, 2012, CCTV’s “Focus Interview” column gave a special report on Chongzhou’s innovative practice of a “1 + 4” modern agricultural development mode and its practical application with “Professional Managers in Farmland”, which was fully affirmed by leaders and experts such as Minister of Agriculture Han Changfu.

With the continuous improvement of large-scale, professional and organized operation mechanisms such as land cooperatives, professional agriculture managers and agricultural comprehensive services, Chongzhou’s innovative practice has been recognized by more and more senior leaders, experts and scholars and news media. On April 27, 2014, the China Agricultural Operation System Innovation Practice Seminar, hosted by the Rural Economic Research Department of the Development Research Center of the State Council, the Coordination and Innovation Center for Rural Economic Transformation and Development of South China Agricultural University, and the Sichuan Academy of Social Sciences, was held in Chongzhou. Top agricultural economic experts and scholars gathered in Chongzhou to summarize and upgrade the “1 + 4” modern agricultural development mode in Chongzhou to “Agricultural Co-Operation System”, that is, peasants as the main body to voluntarily form land shareholding cooperatives to promote agricultural scale operation, training professional agriculture managers to promote specialized agricultural production, strengthening the modern agricultural service system to promote specialized agricultural services and forming a trinity of agricultural operation mode of “land shareholding cooperative + professional agriculture managers + modern agricultural service” to realize the “co-construction and co-operation” of operation entities, “co-operation and sharing” of operation revenues and “co-operation and multi-win” of operation objectives, as shown in Figure 1.2.

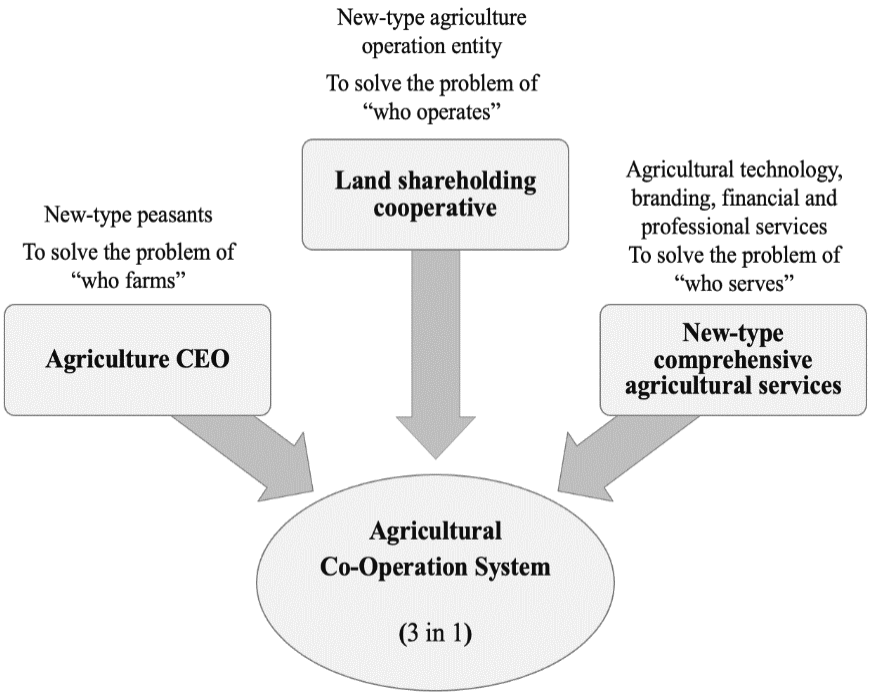

Figure 1.2 The “3 in 1” Chongzhou “Agricultural Co-Operation System”

Since 2013, there have been many policy generalizations based on Chongzhou practice in the “No.1 central document”. The new agricultural operation mode “Agricultural Co-Operation

System” innovatively explored by Chongzhou has gradually “institutionalized” from a grassroots innovative practice to the first document of 2019 (“Several Opinions of the CPC Central Committee and the State Council on Adhering to the Priority Development of Agriculture and Rural Areas and Working on ‘three rural issues’”) Article 5 “ Fifth, deepen rural reform in an all-round way to stimulate the vitality of rural development”. “Agricultural Co-Operation System” as a major national agricultural policy has been implemented nationwide.

1.1.4 Theoretical background

Contemporary Chinese sociologist Fei Xiaotong points out in his famous social society book “Rural China” (Fei, 1948) that the land issue is by no means an independent issue. The form of land system is the performance of the whole economic situation on one hand. The economic situation is linked with political power, social culture and historical evolution, so it is not hard to find that the land system in a specific period can actually be used as an entry point and cross-section to examine the macro-characteristics of specific geopolitics, economy, culture and history. The change of land system is affected by the superposition of multiple factors and the compound shaping of multiple forces.

Institution is the most basic variable that affects human economic behavior, resource allocation and economic performance. In institutional research, the research on land system is the core issue of common concern of many disciplines. Land system is studied from different perspectives in disciplines like political science, sociology, economics, management, and the interdisciplinary integration of these disciplines. China has made great achievements in the past 40-year economic reform. China’s reform started from the rural reform, and the rural reform started from the rural land reform. The land system has made important contributions to the historical achievements of China’s economic development. The change of land system also reflects the course of China’s economic and social development.

As a basic institutional arrangement, rural land system is related to the country’s food security, agricultural development, peasants’ income increase and rural stability, as well as a country’s sustainable and healthy economic development and social fairness and justice. Since 1949, China’s rural land system has gone through several stages such as land reform, cooperative movement, people’s commune and the “Household Responsibility System”. Rural land ownership and operation right have undergone changes of “privately owned and private use”, “privately owned but public use” and “publicly owned and public use”. The academia has incorporated the research of rural land system into the analysis framework of new institutional economics. Under the analysis paradigm of property rights theory, transaction cost theory,

national theory, institutional supply and demand analysis, institutional equilibrium, and path dependence, it studies the way and process of institutional change and the performance of institutional change.

Chinese scholars have conducted a multi-perspective analysis of China’s rural land institutional changes based on social changes and institutional changes. The research paradigms include the use of new institutional economics analysis paradigm, historical institutionalism analysis paradigm and economic analysis paradigm. J. Lin (1989) proposes two types of institutional changes: induced changes and imposed changes, and uses these two types of changes to analyze China’s agricultural development. He uses modern economic methods to elaborate on the impact of rapid changes in China’s economic system and technology on agricultural development, and profoundly analyzes the internal reasons for institutional changes and technological changes. Kong (1993) conducts empirical analysis of the process, types and constraints of rural land institutional changes in China. Based on macro perspective, J. Han (1999) studies the development of rural land property rights system, tax system, and agricultural land circulation and scale operation. Yao (2000) discusses the relationship between rural land system and economic performance based on the changes of rural land system and regional differences. Qian (2000) reviews the historical changes of China’s agricultural land system from a historical perspective, using economic theoretical models to explain the changes and institutional equilibrium of China’s rural land system. J. Zhang (2003) proposes a “structure-system” analysis framework. X. Zhang (2006) believes that the development direction of rural land system reform should be the different realization forms of rural collective members’ rights to rural land property. G. Wen (2008) believes that the current land system is a temporary institutional arrangement, which will weaken China’s comparative advantage and the development of the capital market. A new round of land reform is imminent. Dong (2009) reviews the four major rural land system changes in China since 1949, and proposes the development trend of the rural land system from the perspective of laws and policies. D. Han and Zhu (2012, 2013) use game theory research methods to explain the changes in the rural land system, and conduct an empirical analysis of the effectiveness of various stakeholders. X. Zhou and Ai (2010) propose an analytical framework for multiple institutional logics. L. Wei (2015) conducts a stickiness analysis of the dual economic and political characteristics of the rural land system from the perspective of the interaction between formal and informal systems.

Chinese scholars hold different views on the reform of collective ownership of rural land in China. There are mainly four kinds of propositions: the theory of improving the collective ownership of land system, the theory of state-owned land system, the theory of private land

system and the theory of compound property rights system. Q. Zhou (1988, 1995b, 1995c) emphasize that the reform of the land system should be carried out under the existing framework; the collective ownership of land should be adjusted and improved; peasants are given complete land ownerships, and the “two rights separation” should be changed to “five rights in one”, so that peasants can directly own, possess, use, benefit from and dispose the land. S. Liu (1989) , M. Chen and Xiao (1995); Z. Chen, Qu, et al. (2008); Kang (1995); Xiang and Luo (2007) and Cai (2009) advocate the nationalization of the land, believing that the next step in the reform of the rural land system should be the state-owned permanent tenancy system or the state-owned private operation. Q. Li (1986); G. Wen (2008) tend to implement the permanent tenancy system or privatization of land, in order to accelerate peasants’ enthusiasm for long-term investment and the rapid flow and concentration of land, and improve agricultural economic performance., Qu (1991) propose an eclectic composite land ownership proposition, and believes that the choice of reform direction should be comprehensively judged on the basis of mobilizing peasants’ enthusiasm, the constraints of historical and informal systems, and the degree of unanimous consent of the economic parties, and implement peasants’ individual ownership on the basis of state ownership of land. Although scholars hold different opinions, they have the same understanding on the importance of clarifying land ownership and ultimately improving the collective ownership of land. The practice of China’s rural reform also shows this trend.

Rural land system change is a highly complex process of multi-subject participation, multi-factor superposition and multi-interest demands. As shown in Figure 1.3, the central government, local government, grassroots organizations, enterprises and peasants interact with each other under the influence of institutional environment, path dependence, formal system, informal system and other factors. These factors have both endogenous and exogenous deterministic effects, showing the characteristics of “quasi-parameters”. All elements are embedded, linked and transformed with each other, which together lead to the process of institutional change.

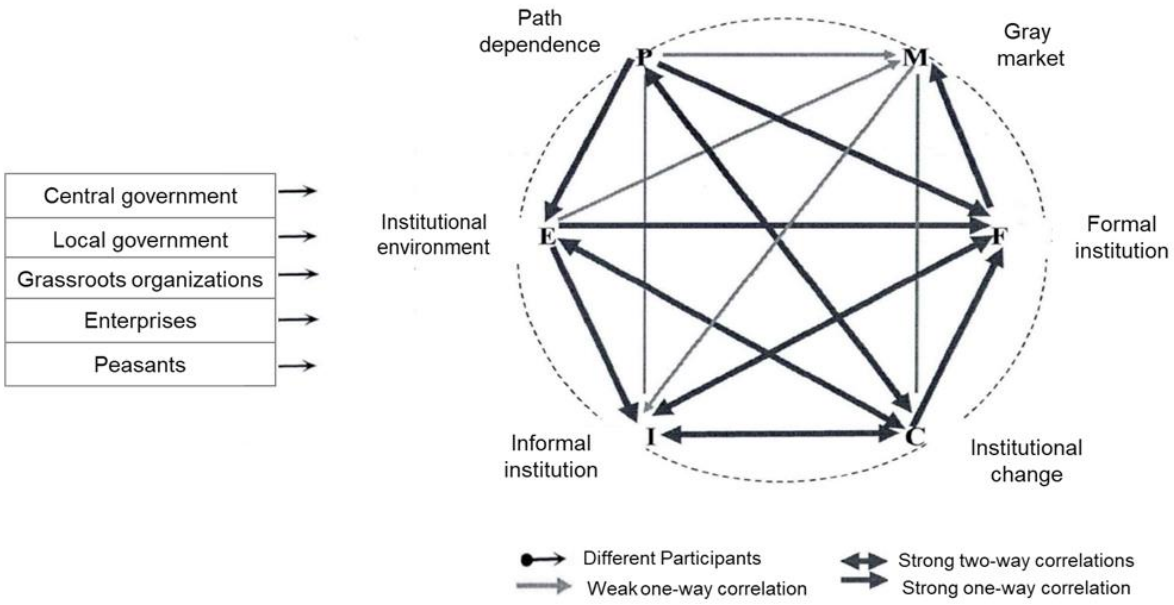

Figure 1.3 Model of interaction of rural land institutional changes

Source: Wei (2015)

In terms of research methods, there are both qualitative researches and empirical quantitative researches on China’s rural land institutional changes. Most of them adopt historical comparison method and literature research method, and nearly no research adopts grounded theory method. Therefore, the existing theoretical research results not only provide a solid theoretical basis for this research, but also provide room for this research to adopt grounded theory, which becomes one of our most important research backgrounds.

1.2 Research questions

Located in southwest China, Chongzhou is a major agricultural city and a grain producing area in China. The rural population accounts for 47% of the total population, however, the rural migrant labor is as high as 85%. It is a typical area facing the “four constraints and one challenge” in agricultural operation. Through a grassroots innovative experiment and further promotion, Chongzhou has successfully solved the problem and became a “national case” for China’s agricultural operation. How a grassroots innovative practice was “institutionalized” to a national modern agricultural operation system innovative practice has great research values.

This research follows the research methods of institutional change theory and institutional innovation theory, attaches importance to the analysis of historical events, and adopts the grounded theory research method. Grounded theory is a qualitative research method to inductively generate theory. There is no theoretical hypothesis before the research. Starting from the actual observation, experience is summarized from original data, and theory will be

established from bottom to top with the support of empirical evidence. Because qualitative researchers themselves are the main research tools, in order to avoid “preset questions” or distorted understanding of experience by personal preferences, qualitative researchers need to “be unfamiliar with the familiarity”. In view of the characteristics of qualitative research of multi-methods, naturalistic and explanatory (Brown, 2010), researchers should emphasize personal experience and participate in observation, record behavior in natural situations; collect diversified descriptive data, such as interview transcripts, field records, picture records and relevant documents; pay attention to the process and results of the formation of events or phenomena; summarize fragments of data to find relevance instead of verifying research hypotheses. Therefore, the research questions are not preset, but slowly emerged in the process of grounded analysis. This study focuses on the following five research questions that have emerged in grounded research:

RQ1: What is the property rights foundation for the innovation of the “Agricultural Co-Operation System”?

RQ2: Under what environmental conditions does the innovation of the “Agricultural Co-Operation System” take place? What is the supply and demand of institutional innovation?

RQ3: Who participated in the institutional change process of the “Agricultural Co-Operation System”? What are their roles?

RQ4: What is the role of top-down imposed force and bottom-up induced force? Is there a third force for institutional change, and if there does exist a third force, what is its impact?

RQ5: What is the governance structure and operation mechanism of the “land shareholding cooperative” as the main operating body of the “Agricultural Co-Operation System”? How is the performance?

1.3 Research purposes

The basic rural operation system is an important part of China’s fundamental institutional arrangement. The more than 60 years of transformation in New China, from the land reform to the cooperative movement and agricultural collectivization, to the “Household Responsibility System”, have profoundly expressed the fundamental influence of the basic rural operation system on China’s economy and society, especially to rural areas, agriculture and peasants. Stabilizing and improving the basic rural operation system, innovating the agricultural operation institution and its operation system, and accelerating the transformation of agricultural operation methods have important strategic and historical significance.

In response to the three dilemmas of agricultural production and operation, “who will operate, who will farm, and who will serve”, Chongzhou has made great efforts in the modern agricultural industry system, explored and constructed a new agricultural operation system of “Agricultural Co-Operation System”, and promoted the implementation of rural revitalization. After nearly 8 years of exploration and practice, the system has been gradually promoted and improved, and now it is relatively mature. To answer to the national rural revitalization strategy, it is urgent to conduct a systematic study and comprehensive evaluation of the factors affecting the practice and promotion of the “Agricultural Co-Operation System” in Chongzhou, which is not only conducive to the further improvement and promotion of the “Agricultural Co-Operation System”, but also inspiring for the development of China’s modern agricultural operation system and the implementation of rural revitalization strategy. Through the research on the development and evolution of the new agricultural operation system, this study systematically analyzes the major problems existing in the practice and generalization based on fully understanding the background, historical evolution, organizational structure and operation mechanism of the Chongzhou “Agricultural Co-Operation System”, and proposes countermeasures for further optimization.

1.4 Research contributions

This research has both theoretical and practical contributions.

Since 1978, the bold experiment of “fixing production quotas for each household” for 18 peasants in Xiaogang Village, Anhui Province, the innovative practical exploration of China’s agricultural operation mode has never stopped. The Opinions on Accelerating the Transformation of Agricultural Development Mode issued by the General Office of the State Council in 2015 once again stresses that an important direction for the transformation of agricultural operation mode is moderate scale operation. Existing practices have shown that there are many constraints in simply promoting the concentration of land circulation and scale operation. Agricultural land circulation is not a single factor market, but a special market including geography, kinship and human relations, with its special market logic. Strengthening peasants’ principal position in land property rights through the confirmation of farmland rights is conducive to improving peasants’ production behavior. However, the enhancement of peasants’ “personalized property traits” to land may lead to the “monopoly of property rights” and “geographical monopoly of property rights”, thus strengthening the “endowment effect” and intensifying the suppression of the circulation of operation rights. With the transaction

constraints of binding the subject and object of property rights and expanding Coase Theorem, property rights of China’s rural land have realized property rights subdivision, circuitous transactions and effective matching. Therefore, under the background of “separation of three rights” of ownership, contractual right and operation right of rural land in China, the key to innovating agricultural operation mode lies in activating agricultural land operation right. The system core with the main line of “collective ownership, household contract, property rights subdivision, division of operation, and control of use” of the rural land may become the underlying framework of China’s emerging agricultural operation system.

The universal practical demand for institutional innovation is neither a typical experience under a special background, nor a special case with the chance of success. “We need to know that no matter what difficulties China’s economy encounters or what problems it needs to solve, it is not economists but practitioners who first deal with them spontaneously” (Q. Zhou, 2013). It is precisely this reality of “practical innovation precedes theoretical innovation” and “there are places to make bold breakthroughs” (Shao, 2016) , the theoretical research on the innovation of China’s agricultural operation mode under the “separation of three rights” is limited, especially the research based on the perspective of institutional innovation, and it cannot effectively explain how innovative activities and innovative operation organization forms of agricultural operation in a local practice, an exploratory practice at the grassroots level becomes a system and is generalized nationwide. Therefore, this study believes that the innovative experiment of the agricultural operation system in Chongzhou deserves special attention and systematic research. Only through qualitative research on successful cases with universal, replicable and sustainable characteristics can it have important demonstration significance and promotion value.

The shift from traditional agriculture to modern agriculture is not only a problem faced by Chinese agriculture, but also a common problem faced by “small-scale peasant economy” in the world. Chongzhou’s various exploratory experiments and innovations in practice have accumulated valuable experience for the construction of an agricultural operation system suitable for China’s national conditions and agricultural conditions. Chongzhou’s “Agricultural Co-Operation System” may be an important breakthrough to crack the transformation of China’s agricultural operation mode, indicating an important direction for the innovation of China’s agricultural operation system and mechanism. The example of Chongzhou not only enriches the practice of rural reform in China, but also provides “Chinese experience” for the transformation of traditional agriculture worldwide, which has far-reaching and extensive significance.

(1) Demonstration value: replicability and generalization of the “Agricultural Co-Operation System”

From traditional agriculture to modern agriculture, from rural opening to urban-rural integration, from rural revitalization to common prosperity, the “Co-Operation System” explored by Chongzhou has provided important experience for the system and mechanism innovation for China’s agricultural and rural development and a “China Plan” for rural development worldwide.

Why can Chongzhou keep innovating, upgrading and transforming its countryside to comprehensively promote rural revitalization? Its key “password” is: to take the “Co-Operation System” as the main line, to promote the all-round upgrading of agriculture, the all-round progress of rural areas and the all-round development of peasants, to promote the overall rural revitalization, to speed up the integration of urban and rural development; to promote common prosperity in high-quality development by upholding the principle of having the party construction as the core guide, strengthening scientific planning, adhering to green development, improving operation services, expanding diversified cooperation, and building a guarantee mechanism, thus to create a model for overall co-construction, co-operation, and sharing of rural revitalization of Chongzhou.

(2) Practical value: The innovative value of the “Agricultural Co-Operation System” tested in Chongzhou is manifested as follows: cultivating a team of professional agriculture managers to promote the professional operation of agriculture, voluntarily and autonomously forming land shareholding cooperatives with peasants as the main body to promote the large-scale operation, and strengthening socialized services to promote the organized operation. Thus, the three paths of “participants cooperation, benefit sharing, and goal compatibility” have been formed, and the “co-construction, co-operation, sharing, and multi-win” goals of multiple participants have been achieved.

As an important innovation of the agricultural operation system under the new situation, Chongzhou’s “Agricultural Co-Operation System” upholds the bottom line of the institution, maintains the institutional goal, cracks the bottleneck of the application of advanced science and technology and modern production methods in household operation and the weakening of the unified operation level, optimizes the allocation of agricultural resources, realizes the efficient connection between advanced production factors such as modern material, technology and equipment, entrepreneurial ability and operation methods, promotes the intensification, specialization, organization and socialization of modern agricultural operation, enhances the sustainable development of agriculture, thus provides an example for the transformation of

agricultural operation mode in our country.

Chongzhou “Agricultural Co-Operation System” provides a “third path” different from the “capital agriculture” in the United States and Japan, which is suitable for China’s national and agricultural conditions. L. Wang and He (2019) believe that the direct investment and self-service of family farms in the United States or Japan have the characteristics of involuted path dependence. Guo (2007) proposes that efficiency comes from division of labor, and the essence of division of labor is specialization and service economy. To build the organic connection between small peasants and modern agriculture, we must take the “third path” with Chinese characteristics. Its core is “serving small peasants”, that is, introducing technical funds through socialized services to improve roundabout investment, and introducing entrepreneurial capabilities and transaction organization methods through operation services, thus involving small peasants in the division of labor economy. The cultivation of the two types of participants of “production service and operation service” and the matching of circuitous investment and service contract not only facilitate the introduction of modern production factors by peasants, but also improve the modern operation level of peasants and promote their integration into the value chain of agricultural division of labor. Eventually, a new agricultural operation mode of “professional farming of peasants, social circuitous investment, outsourcing services of the capable, and competitive market transactions” will be formed.

1.5 Research structure

This study consists of six chapters, the structure is shown in Figure 1.4.

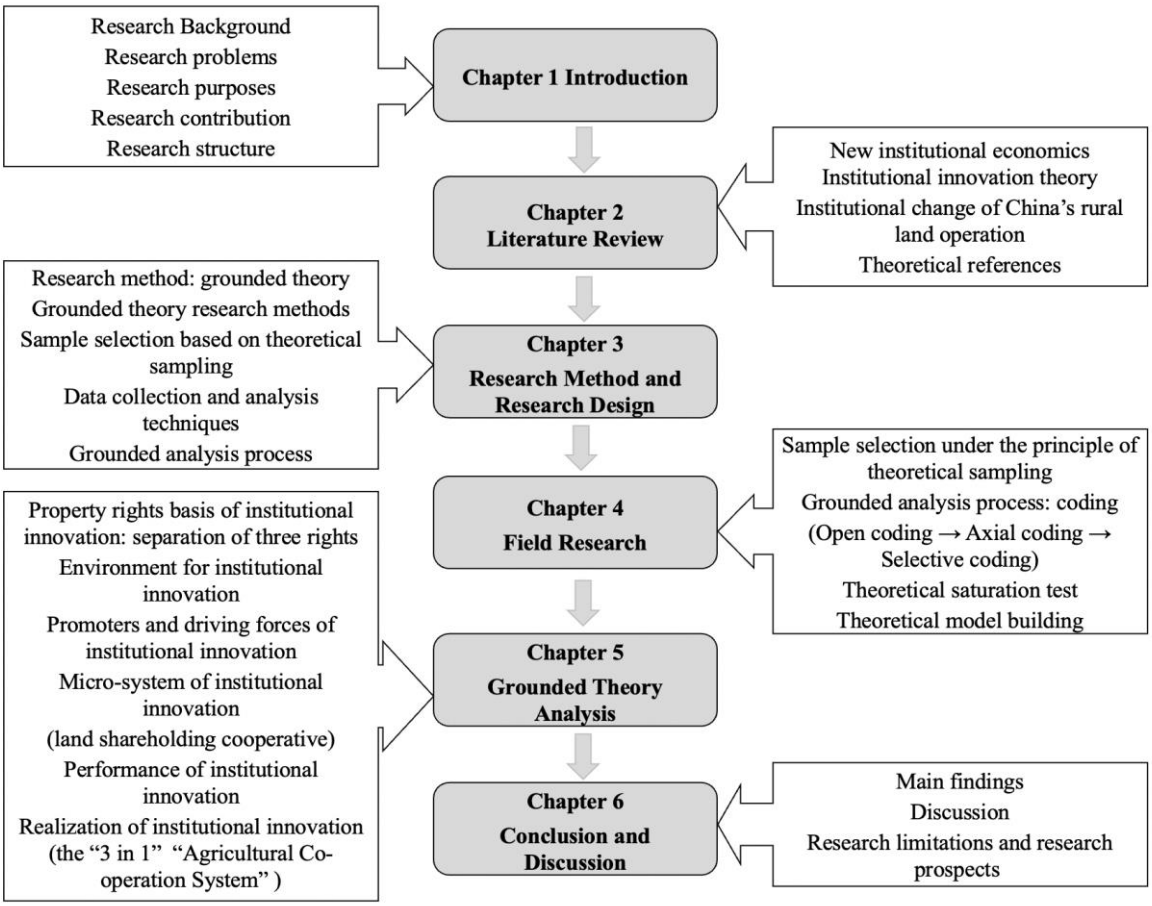

Figure 1.4 The research structure

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Chapter 2: Literature Review

2.1 New institutional economics

The term “new institutional economics” was coined by Oliver Williamson in 1975 for the purpose of differentiating from the neo-institutional economic school represented by John Galbraith. It is the economics that analyzes institutions by using the methods in mainstream economics. The mainstream theories are property rights and transaction cost theories represented by Coase, and economic performance and institutional change theory represented by North. The representatives of new institutional economics include Nobel laureates such as Douglas North – the Nobel laureate in economics in 1993, Ronald Coase – the Nobel laureate in economics in 1991, Oliver Williamson – the Nobel laureate in economics in 2009, Armen Alchian, Harold Demsetz, and Steven N.S. Cheung.

Taking institution as a research object in economics is a revolution that new institutional economics brings to the traditional economic theories. With the ongoing of economic research, people are increasingly aware that endowments, technology and preferences - the three traditional pillars in economic theories are not enough. Supporting with strong evidence, the new institutional economists have shown that institution is the fourth pillar in economic theories. Institution plays a very essential and crucial role in economic development. Other factors like land, capital and labor can only function in the framework of institutions.

The new institutional economics incorporates institutional analysis into economics, uses the logic and methods of neoclassical economics to analyze the composition and operation of institutions. It modifies and expands the neoclassical economics mainly in the following aspects:

The assumptions about human behavior: Neoclassical economics believes that economic people are rational and their behavior is to maximize their own interests. The new institutional economics advocates studying the real people from the realistic organizational system. It revises new institutional economics by addressing: (1) Human behaviors are bounded rationality; and (2) people have an opportunistic behavioral tendency to seek maximized interests for themselves.

About the expansion of the research field: The new institutional economics school applies the basic methodology of neoclassical economics to the study of institutional structures, including law, business organization, and social culture; introduces transaction cost theory and property rights theory to revise the “zero transaction cost” assumption – zero friction in

transactions in the neoclassical economics. This revision from the zero-transaction cost assumption to the positive transaction cost assumption makes economics research closer to the reality.

In addition, when studying the economic organization system, new institutional economics not only retains the three basic elements of neoclassical economics—stability preference, rational choice model and equilibrium analysis method, but also revises the research by introducing new variables such as information, transaction cost, constraints of property rights and government interventions, thus to establish the methodological basis for new institutional economics. The original methodology of the neoclassical economics has been generalized (North et al., 2002).

Incorporating the institutional analysis theory into economics, new institutional economics builds its theory on the fundamental assumption of scarcity and competition in microeconomics. It modifies and extends the neoclassical economic theories. New institutional economics examines the role of institutions in promoting or preventing economic growth by comprehensively using theories and methods of multiple disciplines such as economics, laws, politics, history, sociology, and philosophy. New institutional economics’ methodology of combination of theoretical research and empirical research produces broad explanations to economic growth problems in real world; thus, it raises a movement in the field of social sciences, especially economics and political science. In the research of new institutional economics, the three key research factors are institutions, contract and performance; the main research object is the interaction mode and effect between institutional change, contract selection and performance realization; the main research objective is institutional improvement, organizational optimization and performance improvement (Chang, 2019). The main theoretical research of new institutional economics includes transaction cost theory, property rights theory, the theory of the firm, and institutional change.

2.1.1 Definition of institutions

According to the definition by Douglas C. North, institutions are “the humanly devised constraints that structure political, economic and social interaction” (North, 1991).Institutions consist of informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights). Throughout history, institutions have been devised by human beings to create order and reduce uncertainty in exchange. Together with the standard constraints of institutions and economics they define the choice set and therefore determine transaction and production costs and hence the profitability and feasibility

of engaging in economic activity. Institutions evolve incrementally, connecting the past with the present and the future; history in consequence is largely a story of institutional evolution in which the historical performance of economies can only be understood as a part of a sequential story. Institutions provide the incentive structure of an economy; as that structure evolves, it shapes the direction of economic change towards growth, stagnation, or decline.

According to North (1993), institutions promote predictability and prevent confusion and arbitrary behavior, thereby maintaining and consolidating complex networks of interpersonal relationships. The existence of institutions regulates human behavior, which on the one hand makes the various production processes and transaction activities orderly and predictable; on the other hand, it also enhances the trust between people. In fact, interactions among people, including mutual interactions in economic activities, are based on a kind of trust. Since trust is based on a certain order, thus in order to maintain such order, it is necessary to rely on rules, norms and other institutions to prohibit or constrain various unpredictable behaviors and opportunistic behaviors. From a perspective of economics, this actually reduces various transaction cost and promotes economic growth.

According to Williamson (1993, 2010), institutions are the external norms that each player should follow in the transaction process. Institutional environment is a fundamental set of political, social and legal rules, which establishes a foundation for production, exchange and distribution activities. Institutions inject orders and achieves mutual benefits in transactions; different institutions have different effects on the transfer of transaction cost arranged by the same contract. North (1990) points out, that the evolution of institutions creates a favorable environment for solution of cooperation in complicated exchanges, and determines economic growth.

Furubotn and Richter (2006) address that economic and political rule restrict the economic decision that can save transaction cost.

This research adopts the definition by North, “Institutions are the humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and self-imposed codes of conduct), and their enforcement characteristics.” According to North, “It is the interaction between institutions and organizations that shapes the institutional evolution of an economy. If institutions are the rules of the game, organizations and their entrepreneurs are the players. (North, 1990) The term “institution” refers to the rules of the game, whereas “organization” refers to players of the game. “Organizations are made up of groups of individuals bound together by some common purpose to achieve certain objectives. Organizations include political

bodies (political parties, the Senate, a city council, regulatory bodies), economic bodies (firms, trade unions, family farms, cooperatives), social bodies (churches, cooperatives, athletic associations), educational bodies (schools, universities, vocational training centers)” (North, 1990).

2.1.2 Transaction cost theory

In 1937, in his “The Nature of the Firm”, Ronald Coase starts to find explanations to the following questions: why do firms exist when individual producers can achieve production cooperation through market transactions? What factors determine the boundary of a firm? In successive stages of production or related sectors, why there is not only long-term contractual relationship, but also the phenomenon of vertical integration? To explain these questions, Coase firstly introduces the concept of “transaction cost” (Coase, 1937). According to Coase, the market and the firm are two different ways of organizing the division of labors (that is, two different ways of “transaction”). The reason for the emergence of firms is that the transaction cost of organizing the division of labors is lower than that of organizing the division of labors in the market. On the one hand, as a form of transaction, firm can combine the owners of several production factors and products into a unit to participate in market transactions, thus reducing the number of traders and the friction in transactions, as a result transaction cost are reduced. On the other hand, within a firm, market transactions are cancelled, and the complex structure of market transactions is replaced by entrepreneurs, who command production, and thus, the firm replaces the market. Therefore, different transaction cost exists, either in the internal firm transactions or in the external market transactions. The reason why firms replace the market is that the transaction cost generated by firm transactions are lower than that generated by market transactions.

Coase introduces the concept of transaction cost to explain the nature and limits of firms and opens the transaction cost theory. This theory distinguishes between market transactions and internal firm transactions, and holds that the firm and the market are two alternative resource allocation mechanisms. Due to the existence of bounded rationality, opportunism, uncertainty and small number of conditions, the market transaction costs are high. In order to save transaction cost, firm as a new form of transactions replacing the market came into being. The transaction cost determines the existence of a firm, and the ultimate goal of a firm is to save transaction cost by adopting different organizational methods, firm or market. Arrow defines transaction cost as the “operational cost of economic institution” (Arrow, 1975). Transaction cost is defined by the later researcher as the costs of resources utilized for the

creation, maintenance, use, and change of institutions and organizations. They include the costs of defining and measuring resources or claims, the costs of utilizing and enforcing the rights specified, and the costs of information, negotiation, and enforcement (Furubotn & Richter, 1997).

Transaction cost become the facilitating method to choose the best transaction mechanism. The main proposition of transaction cost theory is to reduce the generation of transaction cost through institutional arrangement, that is, the principle of transaction cost minimization. Transaction cost theory is the operating mechanism of coordinating the organizational form of economic activities and resource allocation. Therefore, the main forms of transaction mechanisms in transaction cost theory are market and firm. Based on this, Coase transformed the study of economic transaction cost into the study of selection and optimization of the transaction institution compatible with the transaction activities.

Based on Coase theroy, economists such as Williamson (1975, 1981), Alchian and Demsetz (1972), Cheung (1978, 1998, 2005, 2008); X. Yang and Shi (1992, 1995) and have expanded the transaction cost theory in the following aspects.

(1) Narrow and generalized definitions of transaction cost: The former definition is that transaction cost is the time and input paid for implementation of the contract. Under certain conditions, such transaction costs can be so high that they impede the implementation of market transactions. Generalized transaction costs refer to all resources needed for negotiation, contract implementation, and information obtainment.

(2) Ex-ante transaction cost and ex-post transaction cost: Williamson (1985) distinguishes between the ex-ante and ex-post transaction. The ex-ante transaction cost refers to “the cost of drafting, negotiating and ensuring the implementation of an agreement”. When signing a contractual relationship, the parties to the transaction relationship will be troubled by the uncertainty in the future, so it is necessary to stipulate the rights, obligations and responsibilities of both parties in advance. In the process of clarifying these rights, obligations and responsibilities, there is a cost, and the cost is associated with the prior clarity of a property right structure. The ex-post refers to the costs incurred after the transaction, including the costs incurred by both parties to the transaction in order to maintain a long-term transaction relationship; the expenses paid by both parties when they find that the transaction items determined in advance are wrong and need to be changed; the fees and loss of opportunity incurred by the parties due to the cancellation of the transaction agreement.

(3) Transaction cost is the cost of using economic institution: The emphasis on transaction cost is the cost caused by the institutional friction, especially due to the ambiguity of property

rights, which inevitably leads to all kinds of friction. Kenneth Arrow clearly defines transaction costs as “the cost of operating an economic institution.”

(4) Information cost is the core of the transaction costs: Level of the information cost reflects the authenticity of the market price signal and the sensitivity of information identification. It fundamentally depends on whether rights, responsibilities and risks of the market transaction participants are stipulated clearly by property rights. After all, price reflects the value of property rights in the market.

(5) Transaction cost is the expense incurred universally in the social exchange relationships: Transaction cost occurs on the premise of ubiquity of discrepancy and conflicts of interests among people in the social exchanges. The cost of overcoming and facilitating this discrepancy of interests, in nature, is a kind of institutional cost, which includes the cost of information, the cost of supervision and management, and the cost of institutional structure change.

(6) The key influencing factors of transaction costs: According to Williamson (1996), environmental uncertainty, small number of conditions, organizational or individual opportunism, and information asymmetry are the main factors that constitute the transaction costs of transformation between the market and the firm. Freedom of transaction and transaction cost are the two factors influence efficiency of market operation and resource allocation. From the perspective of labor transaction and intermediate product transaction, Yang distinguishes between the firm and the market, believing that the firm replaces intermediate product market with labor market rather than market organization with enterprise organization; the marginal substitution relationship between the firm and the market lies on comparison between the transaction efficiency of the labor force and that of the intermediate products (X. Yang, 1992, 1995).

To sum up, the transaction cost theory started by Coase believes that the transaction cost is the decisive factor to compare the advantages and disadvantages of the economic institutions. Any institution, organizational system will produce transaction costs during the process of its operation; the level of transaction costs is the measure of the pros and cons of different institutions.

2.1.3 Property rights theory

Coase’s transaction cost analysis implies the problem of how to define property rights. Coase notes that when the property rights of firm are clearly defined, the friction of using the price mechanism to realize transactions between firms is small, which means the transaction cost is

low. Conversely, the transaction costs are high. Coase is a critical thinker on orthodox microeconomics. He focuses on examining the property rights structure behind the economic operation ignored by orthodox economics, rather than the process of economic operation itself, which is the core of the study of orthodox microeconomics. Coase (1937) believes that the main reason for the friction in the operation of the market mechanism is the defect in property rights structure, hence a clear definition of the firm’s property rights is the fundamental to overcome the friction. In terms of methodology, Coase does not adopt the basic method of marginal analysis based on utilitarianism in orthodox theory, instead he adopted institutional analysis rather than mathematics to explain the economic operation rules hidden behind the economic phenomena, and the institutional foundations that regulate these rules.

Coase further expands the concept of transaction cost into social cost. In his outstanding theoretical contribution “The Problem of Social Cost” (Coase, 1960), Coase addresses that the focal problem of social cost lies in the externalities. Externality refers to that the independent variables of an individual utility function contain the behaviors of other individuals. Externalities commonly exist in real life, referring to a kind of interest relationship between economic parties. The damage or convenience caused by one party to the interests of the other or other parties cannot be determined through the market; it is also difficult to compensate or pay through the market price. In terms of externality, the confusion caused by unclear property rights and the damage to the effectiveness of resource allocation are most fully manifested. Concerning the issue of social cost, Coase (1960) discusses the economic role of property rights, analyzes the functions of property rights, and investigates the key role of property rights structure in reducing social costs and overcoming market failure caused by externalities, thus making property rights system a necessary condition for the effectiveness of resource allocation. Coase (1960) suggests that well-defined property rights could overcome the problems of externalities. Property rights have two distinct connotations: economic property rights and legal property rights. The economic property rights of an individual over a commodity or an asset are the individual's ability, in expected terms, to consume the good or the services of the asset directly or to consume it indirectly through exchange. These can include (1) the right to use an asset, (2) the right to earn income from an asset and contract over the terms with other individuals, and (3) the right to transfer ownerships permanently to another party. The legal property rights are the property rights that are recognized and enforced by the government (Barzel, 1997; Eggertsson, 1990).

The most significant contribution of Coase property rights theory is the Coase Theorem, which holds that, regardless of the initial allocation of property rights and choice of remedial

protection, the market will determine ultimate allocations of legal entitlements, based on their relative value to different parties. The main propositions of the Coase Theorem include: 1) when the transaction cost is zero, no matter how the initial allocation of rights is, the Pareto efficiency of resource allocation will be achieved in the negotiation between the parties; 2) when transaction cost is not zero, different definition of rights allocation will bring out different resource allocation; 3) because of the existence of transaction costs, different rights definition and distribution will bring out different benefits of resource allocation, therefore the establishment of property rights system is the foundation for optimizing resource allocation and achieving the Pareto optimum. Coase Theorem reveals the relationship between transaction costs and property rights arrangement, puts forward the impact of transaction costs on institutional arrangement, and provides an effective method for people to make decisions about property rights arrangement in economic life (W. Xiao, 2006).

Coase’s *the problem of Social Cost* pioneers the property rights theory. Later, more scholars develop the theory from different perspectives. North and Thomas (1971) introduce Coase theory into the analysis of economic history, and explain the institutional changes and economic development from the perspective of change of property rights structure and reduction of transaction costs, making a very convincing explanation of economic history and establishing the new economic history school (North, 1971). According to North (1981), the improvement and progress of property rights system is an important reason for economic development. It not only improves people’s productive inputs, but also reduces the transaction costs. The improvement of the property rights system is also demonstrated in the improvement of degree of property rights protection.

Alchian (1969) defines property rights as people’s rights to use resources under the condition of resource scarcity, or the appropriate rules for people to use resources. Demsetz (1989) believes that property right is a social tool, whose significance lies in that it makes people form reasonable expectations in the exchange with others. One of the main functions of property rights is to provide the impetus for greater internalization of externalities. Therefore, property right defines how people benefit and lose in economic activities, and the rules that how people are compensated. Demsetz (1964, 1967), Alchian and Demsetz (1973) believe that the premise of people cooperation is the definition of property rights; whether the property rights are defined, how the property rights are defined directly affect individual’s costs and benefits. Defining property rights and establishing property rights system are initial cooperation between people, and the establishment and development of property rights system affect the transaction costs of cooperation between people. Therefore, when people cooperate, they

transact and cooperate on their own property rights, and cooperation between people is therefore a cooperation on property rights and nothing else.

Barzel (1997) studies property rights from the perspective of slavery, believing that property rights are not absolute, but can be changed through individual actions; property rights are constantly generated and abandoned, and can be divided; the optimal allocation principle of ownership is: the party with greater influence on the average income of assets should also get a larger share of the residual than that of the others. The net income produced by assets depends on the definition of rights, that is, the degree to which rights are protected; property rights cannot be completely defined, and the best definition is to define property rights to the individual, because the individual’s purpose is quite clear; the function of any organization comes down to the transfer of different rights from one individual to another.

Through the efforts of Alchian, Demsetz and others researchers, the property rights theory become more and more elaborate, and the modern property rights theory is further developed. This theory holds that the efficient form of property rights is the institutional arrangement of property rights that can effectively internalize externalities. Concerning the private property rights and public property rights, this theory believes: 1) Private property rights are the rights of resource allocation, use and transfer and income gain defined to a specific individual, so that he can use, transfer these resources in any way he thinks fit without any constraint. 2) Public property rights mean that any member has the right to share these rights, the exclusivity and transferability of property rights are eliminated; the co-ownership of property rights make the phenomenon of “free riding” and the asymmetry of costs and benefits within the community very difficult to exclude; thus, the multiple ownership and diversified interests within the community make the negotiation cost to reach an optimal action very high. Public property rights lead to greater externalities, therefore public property rights are inefficient forms of property rights. 3) Under the public property rights arrangement, the right of control and the right of income are separated, under this property rights arrangement everyone wants to obtain the benefits of the public property right but are not willing to put more efforts, hence greater externalities in incentive aspect occur.

2.1.4 Principal-agent theory

Early in the 1930s, American economists Berle and Means had deep insight into the disadvantages of business owner functioning as the business operator. In their famous “The Modern Corporation and Private Property” (Berle & Means, 1932), they point out that the development of industrial technology has brought the large-scale production and size expansion

to the corporations; the ownership of corporation wealth become fragmented because the dilution of wealth, thus the phenomenon of “separation of ownership and control” occurred. The deviation of the two rights leads to the emergence of principal-agent relationship, which means the existence of two types of participants, the principal and the agent.

Principal-agent theory is one of the main contents of the contract theory in the institutional economics. The principal-agent theory advocates the separation of ownership and control/operation rights. The business owner retains the residual claim and assigns the operation rights to the agent. Therefore principal-agent theory becomes a rational starting point of modern corporate governance. Principal-agent relationship refers to one or more agents, based on an explicit or implicit contract, assign, hire other agents for their services; at the same time, the former grants the latter certain kind of decision-making power, and pays the latter the corresponding compensation according to the quality and quantity of the services they provide. In this context, the authorizing person is the principal, and the authorized person is the agent.

Principal-agent theory is based on asymmetric information game theory. Asymmetric information refers to the information that some participants have but others do not. The information between the principal and agent are asymmetric. There are two types of asymmetric information. On the one hand, the agent’s private information, such as his/her individual quality, ability and behavior are very difficult to observe. This kind of hidden information is called the “ex-ante information asymmetry”; on the other hand, the principal with no participation in specific production activity, are asymmetric with the agent information, such as agent’s productive input that cannot be observed and revealed easily. This hidden action is called “ex-post information asymmetry”. In the process of contract execution, it is full of uncertainties, the trustworthy between the principal and the agent faces great challenge, and there is large room for opportunism for the agent. Both the principal and the agent are rational maximization seekers under their own utility. The agent’s objective preference is to seek his own utility maximization, while the principal, the owner of the firm seek the maximization of the shareholders’ interests. The discrepancy and conflict of interest preferences between the principle and the agent lead to the discrepancy of maximal decision-making between the principal and the agent, hence the principal-agent problem occurs (Fama & Jensen, 1983; Jensen & Meckling, 1976).

The principal-agent relationship also results from the existence of “specialization”. When “specialization” exists, a relationship may arise in which the agent acts on behalf of the principal because of his comparative advantage. The concept of principal-agent was firstly put forward by Ross (1973): the agency relationship arises when one of the two parties, on behalf of the

interests of the principal, exercises certain decision-making rights.

The further researches build mathematical models to analyze the agency problem and develop theoretical solutions. Mirrless (1976) using the method of "parameterized distribution formulation" and Holmstrom (1979) using the method of "the first-order approach" develop "principal – agent" model. Both Mirrless' and Holmstrom's model are actually how to design an agent incentive contract under the conditions of "participation constraint" and "incentive compatibility constraint" so that the agent's behavior conforms to the interests of the principal (W. Zhang, 1999).

When asymmetric information exists, the principal cannot observe the agent's actions, but can observe some relevant variables, which are determined by the agent's actions and other exogenous random factors. Therefore, the principal cannot adopt "forcing contract" to force the agent to choose the action that the principal expects, thus the incentive compatibility constraints would work. In this case, the problem for the principal is to choose the incentive contract that satisfies the participation constraint and incentive compatibility constraint of the agent in order to maximize his expected utility.

The purpose of designing the principal-agent model is to maximize the utility of the principal. Using the "parameterized distribution formulation", the standard method of principal-agent theory to demonstrate the principal's problem of how to select a and $s(\pi)$ to achieve the maximization. The principal's maximization problem is demonstrated by the following:

$$\max_{a,s(\pi)} \int v(\pi - s(\pi)) f(\pi, a) d\pi \quad (2.1)$$

$$\text{s.t. (IR)} \int u(s(\pi) f(\pi, a) d\pi - c(a) \geq \bar{u} \quad (2.2)$$

$$\text{(IC)} \int u(s(\pi) f(\pi, a) d\pi - c(a) \geq \int u(s(\pi) f(\pi, a') d\pi - c(a'), \forall a' \in A \quad (2.3)$$

Among where A represents a set of all possible actions that the agent may choose; a represents the action that achieves the agent's utility maximization. (IR) demonstrates the condition of individual rationality, also called as "participation constraint", which means the agent's expected utility in accepting the contract should not be less than the expected utility $\bar{u}$ (or "retained utility") he would receive if he does not accept the contract. (IC) demonstrates the incentive compatibility constraint, indicating that the utility obtained by the agent from the action expected by the principal must not be less than the expected utility obtained by the agent from other action $a' \in A$, a' indicates all other possible actions excluding a.

Differing from the traditional microeconomics, the principal-agent theory analyzes the principal-agent relationship within a firm and between firms from different perspective. It excels the common economics when understanding and explaining some organizational

phenomena.

2.1.5 Institutional change theory

“An economic theory of the growth of the western world” North and Thomas (1970) published in 1970 and “The rise and fall of the manorial system: a theoretical model” published in 1971 arouse great interest in western economics academia. They propose such a central argument: an effective system providing appropriate personal incentives is the key to economic growth, however such system is generated at a cost; it will not happen unless the benefits it produces outweigh the costs. The discussion by North initiates a precedent of the institutional change theory. Later, more scholars input efforts into the research, and a relatively mature theoretical system is formed, whose core is to investigate the process of institutional emergence, replacement and evolution from the perspective of economics.

Institutional change theory holds that the key factor of economic growth lies in institutions, and an effective system that can provide individual incentives is the decisive factor for economic growth. Property rights play the most prominent role among all factors. Effective organization, in North’s view, needs institutional arrangement and ownership arrangement to create an incentive, thus an individual’s economic efforts can be turned into activities where private returns are close to the social returns. The institutional change theory examines the reasons of institutional change or the origin of the institution, the impetus, process and forms of institutional change, institutional transplant, and path dependence. One of the reasons for institutional change is saving transaction cost, which is to reduce institutional costs and improve institutional efficiency. Therefore, institutional change can be understood as a process of substitution during which a higher-return institution replacing a lower-return institution.

North (1989, 1992, 2005) examines economic history by applying economic theory and quantitative methods in order to explain economic and institutional change. North believes that the advancement of science and technology plays an important role in the development of the economy, but the key is institutions, including ownership, allocation, operation, laws and policies. Concerning explanation to why some countries are poor and some countries are rich, and why some economies are strong and others failing, North believes that the reasons should be examined from studying the institutions. Institutions are guarantees to promote economic development and create more wealth. If the social community finds that the existing institutions are no longer promoting growth, new institutions should be developed; otherwise, the economy will fall in a state of stagnation.

Theory of property rights, theory of the state, and theory of ideology constitute the three

theoretical cornerstones for North’s institutional change research. It is the property rights that motivate individuals and organizations in an economic system; it is the state that defines the implementation of property rights; and it is the ideology that affects people’s reactions to “objective” changes.

Concerning the property rights theory, North (2005) believes that the social process of institutional arrangement characterized by fully defining private property rights is the fundamental reason for the modern western scientific and technological revolution, the rapid development of production technology and the rise of the western world.

Concerning the theory of the state, North believes that “because it is the state that defines the structure of property rights, the theory of the state is fundamental”. Ultimately, it is the state that is responsible for the efficiency of the property structure that causes economic growth, stagnation and decline. Therefore, without property rights it is difficult to make an effective analysis of the state. Based on the “rational economic man” of neo-classical economics, North’s state model features three characteristics: 1) in the exchange process with the voters, the state ruler provides “protection” and “fair” services to voters for the purpose of obtaining income; 2) in order to maximize national income, state rulers design property rights for each social group; 3) since the ruler of a state is faced with the potential competition of the future ruler, the degree to which the ruler monopolizes power is a function of the degree of substitution of different voter groups (North, 1983).

Concerning the theory of ideology, North believes that institutional analysis must build on the theoretical thinking of ideology. Any successful ideology must overcome the “free rider” problem and promote certain groups to move away from the simple individual calculation of hedonistic of costs and benefits. According to North, 1) people understand their environment through ideology and are guided by a “value”, which makes the decision-making process simple; 2) ideology is inevitably intertwined with an individual’s moral and ethical evaluation of justice, when he observes the world. This means that people have to choose between mutually contradicting ideologies; 3) people will change their ideology when their experience does not conform with their ideas.

When answering “why some inefficient institutions can survive in a certain historical period?” “Why some inefficient institutions cannot be eliminated spontaneously in the process of evolution of society?”. North proposes “path dependence” in institutional change. North’s explanation is that when a social system evolves to a certain stage, it is always restricted by its existing culture, tradition, belief system and other factors. Path dependence refers to a condition that exists when the outcome of a sequence of economic changes can be significantly influenced

by temporally remote events, including happenings dominated by chance elements rather than systematic forces (David, 1985). In addition, the interaction between the organizations and the institutions produces a “lock-in effect” in which organization and a specific institution coexist. Lock-in effect leads to a self-reinforcing mechanism for the low-efficiency institution (North, 1993).

In the examination of path dependence in institutional change, North states the concept of “institutional innovation” by pointing out that “successful stories in economic history tell us that institutional innovation cuts down the transaction costs and allows people to obtain greater returns from transactions, thus permits the market expansion. Different from Smith and Hayek (Hayek, 1945), North believes that the invention and innovation of institutions come from the rational calculation and mental construction of rulers, economic entrepreneurs and political/institutional entrepreneurs, rather than from the generation of spontaneous order in the market process.

In an uncertain world, institutional changes can be viewed as venture investments. Almost all institutional changes are initiated by a small group of people, sometimes even by a single political figure. These people are missionary, visionary, passionate, risk-taking, and decisive. (W. Zhang, 2015) defines political or institutional entrepreneurs as a very small group of visionaries who have the ability to see the opportunities for change, to grasp the opportunity, and to have the willpower and courage to alter existing institutions. They either initiate ideas or first adopt new ideas and find ways to implement them through institutional changes such as developing reform policies. The success or failure of any institutional change, to a large extent, will depend on their decisiveness, persistence, and political skills.

2.2 Institutional innovation theory

Institutional innovation is first proposed by Nobel economist North. It is the integration of institutional economics and Schumpeter's theory of economic development (Schumpeter, 1911). The book *Institutional Change and American Economic Growth* published by Cambridge University Press in 1971 is considered to be an important representative of institutional innovation theory. It is the first book in the western economics field to systematically expound on institutional innovation. Davis and North (1971) advance that an effective system of providing proper incentives to individuals is the key to the economic growth, whereas the formation of such a system comes at a price. It will not emerge unless the profits it brings exceed the cost put in.

2.2.1 Definition of institutional innovation

Institutional innovation is the transformation of the existing system (referring to specific political and economic system, banking system, corporate system, labor union system, taxation system, education system) to enable innovators to obtain additional or extra benefits (Davis & North, 1971).

Davis and North develop Schumpeter’s theory of economic development (Schumpeter, 1911), study the essential factors and driving force of institutional innovation and apply the new theory of institutional innovation to economic history research. They are regarded as representative figures of the new economic history. By adopting the transaction cost theory as the basic analytical tool, North initially applies economic theory to analyze the history of economic development and realizes the integration of economic theory with economic history.

According to North, firstly, institutional innovation emerges with opportunities for potential benefits lying under the existing system. The expansion of market scale, the development of production technology or changes in the perception of the cost-benefit ratio of the existing system bring opportunities for potential benefits. Whereas, due to factors like the need for economies of scale, difficulties in the internalization of externalities, risk aversion, market failures, and political pressures, potential benefits cannot be realized within the existing system. Under the original system, there are always people who take the lead in overcoming these obstacles in order to obtain potential benefits. When the potential benefit is greater than the cost caused by these obstacles, a new system will emerge. Secondly, North points out that there are three levels of institutional innovation in the real world, namely, the innovation activities initiated by individuals, by groups or by the government acting as the “first action group”, and analyzes the different characteristics of these three levels of innovation activities. For example, institutional innovation activities initiated by individuals do not require the payment of organizational costs nor the payment of mandatory costs. Innovation activities by groups require organizational costs, but with no mandatory costs. However, government innovation activities need to pay both the organizational costs and mandatory costs.

Davis and North (1971) argue that institutional innovations refer to the transformation of existing systems that enable innovators to gain additional benefits. The similarity between institutional innovation and technological innovation is manifested as:

(1) Technological innovation is often the result of a new invention in technology, and institutional innovation is often the result of a new invention in the system.

(2) Technological innovation always requires selection among several known alternatives,

so does the institutional innovation.

(3) Just as technological innovations in one industry may lead to technological innovations in other industries, institutional innovations in one industry may also lead to institutional innovations in other industries.

2.2.2 Factors contributing to institutional innovations

The following three key factors contribute to or delay the needs for institutional innovations:

(1) Changes in the market size affect the pre-settled revenue and cost, and the costs of obtaining information and excluding the outsiders do not rise proportionally with the increase of the trading volume.

(2) The development of production technology changes the ratio of cost to benefit under existing institutional conditions, thus arising the need for institutional innovation.

(3) Changes in the expectation of certain social groups for their own income bring forth a general correction to their perception of the ratio of cost to benefit within existing institutional conditions.

North argues about the “delay” problem of institutional innovation, that is, the emergence of opportunities to obtain potential profits and the realization of institutional innovation to obtain such profits are separated in time. There are three causes attributing to the “delay”:

(1) The scope of activities defined by the current legislation.

(2) The time needed for new arrangements in the system to replace the old arrangements.

(3) Making new inventions in a system is a tough process, requiring a certain amount of time.

Correspondingly, the whole process of “delay” caused by the aforementioned three reasons is divided into four parts:

(1) The “delay” by understanding and organizing institutional innovations

(2) The “delay” by awaiting for new inventions.

(3) The “delay” by selecting among programs.

(4) The “delay” by implementing innovations.

2.2.3 Supply and demand of institutional innovations

Institutional economics believes that as an endogenous variable of economic development, there is supply and demand of institutions as that of other items. The process of institutional innovation is actually a process in which the supply and demand of the institution as a product

constantly is balanced in dynamic changes. The development of the institutional innovation theory follows two clues: demand and supply.

Institutional innovations aim for greater income or saving transaction costs. When the marginal benefit provided by the new system is equal to the marginal cost of the old system, the institutional innovation will temporarily stop and the institutional structure will reach a certain “equilibrium”. Institutional economics analyzes how changes in the natural environment, technology level, demographic structure, property rights, ethical culture, and ideology bring people with new opportunities for profits, thus the impetus to transform the old system and create a new one. Only when the environment changes, will the demand or supply for innovating the system rise again.

Institutional economics holds the view that because of the nature of public goods, the supply of institutions depends mainly on the political system. Specifically, it depends on the ability and willingness of the political system to provide new institutional arrangements. This capability and willingness of a political system is subject to many factors, including: the cost of institutional design, the accumulation of existing knowledge, the expected cost of implementing new arrangements, the constitutional order, existing institutional arrangements, normative codes of conduct, public awareness and the expected net profits of the dominant upper-level decision-making groups. Factors affecting institutional innovations constitute: the relative product and factor prices, constitutional order, technology and market size.

2.2.3.1 Needs for institutional innovation

（1）Coase’s analysis

Coase’s discussion on institutional innovations is pioneering. Since then, many of the theories on the needs for institutional innovation have basically followed Coase’s view that institutional innovation can only occur when the expected benefit exceeds the cost of change. Coase reminds us that not all institutional innovations can achieve Pareto optimum in terms of structure, because the current system that leads to some decision-making improvements will also lead to the deterioration of other decisions. It is of great significance that Coase affirms the role and position of transaction costs in institutional innovations. In a sense, the level of transaction costs determines the intensity of demand for institutional innovation, as well as whether and how institutional innovations will occur.

（2）Schultz’s analysis

Schultz (1968) puts forward the viewpoint of demand-induced change from a different perspective, assuming that specific systems are essential and often in the process of change. In

order to improve economic efficiency and social welfare, people try to make social choices for different institutional arrangements. Schultz regards the institution as a variable in the economic field and introduces two key concepts, namely, the economic value of the functions performed by a system and the economic equilibrium. With the improvement of the economic value, people continue to make choices for various systems. This demand for a higher efficiency system pushes the continuous changes of the system.

（3）North’s analysis

North and Thomas (1970) have inherited and expanded Coase’s needs analysis of institutional innovation. Especially, the historical investigations of the rise of the western world provide empirical evidence for the theory of demand leads to institutional innovations. The framework of North’s analysis is that, under the existing institutional structure, when the potential revenue increase caused by externalities, economies of scale, risks and transaction costs cannot be internalized, the innovation of a new institution may allow the increase of the potential income, which means that if the expected net profit exceeds the expected cost, an institutional arrangement will be innovated. Only when this condition is met can an attempt to change the existing system and property rights structure be found in a society. They believe that institutional innovation is also caused by the increased pressure from the population with scarce resources. In modern times, the continued pressure of the population on the farmland has further led to the abolition of farmland and the shift from a farming system based on the use of slave labor to a production system owned by peasants or to a capitalist production system owned by the bourgeois. They have also studied how institutional innovations will occur when granting peasants and landowners with greater control over land, and when wages rise in relative to land value.

2.2.3.2 Supply of institutional innovations

Although the change of demand is a necessary condition for institutional innovations, it does not constitute a sufficient condition for the path of institutional changes, and the supply of institutional innovations cannot be ignored.

(1) North’s analysis

North (1990) emphasizes a fundamental conflict between social benefits and economic income maximization. The state (the ruler) always wants to get more rent from the property rights system. Within this target limit, the ruler also expects to save transaction costs so as to maximize the social output, thus expanding the basis of taxation. With the threat from potential competitors and the transaction costs of taxation, rulers often have to tolerate the ubiquity of

inefficient property rights. At the same time, non-efficient property rights always exist with the “free rider” problem hindering the development of organizations needed to change institutional arrangements. Based on this logic, North also argues that institutional innovations will come from the ruler, not from the state, because the latter always face the problem of “free rider”. This indicates that once the private income of the ruler exceeds its private cost, some changes will inevitably take place.

North (1990) points out that historical stability and transformation require ideology theory to explain the deviation of individualistic rational calculations in neoclassical theory. Furthermore, North believes that organizations (including the state) will always invest heavily in ideology to improve the legitimacy of existing systems and reduce the cost of maintaining existing institutional order. Therefore, a successful ideology must be flexible enough to not only win the loyalty of the members from the new group, but also maintain the loyalty of the members from the old group. It is of paramount importance that any successful ideology must tackle the “free rider” problem so as to provide various groups with the vitality to take actions contrary to simple, hedonistic and individualistic cost-benefit calculations, which serves as the main driving force of the ideology, because without such actions, it will be impossible to either maintain or overthrow the existing order.

(2) Ruttan’s analysis

Ruttan (1978) notices that the “supply” of institutional innovation depends on two factors: the knowledge base and the cost of innovation (related to income). He asserts that the more social science knowledge we have, the better the design and implementation of institutional innovations will be. He points out that the cost of institutional innovations could be enormous. In some political environments, the cost may be death, and even without severe political sanctions, the cost of innovation may be prohibitively high due to the cost of legislative changes, the cost of court filing, and the cost of overcoming the political power of vested interest groups. According to Ruttan, the supply of important institutional innovations must constitute the use of enormous political means by political entrepreneurs and innovators. The supply of institutional innovation is determined by the marginal cost of institutional entrepreneurs. Institutional entrepreneurs try to design new systems to resolve conflicts between various vested interests. In their view, the supply of institutional innovations will be guaranteed if the expected income of institutional entrepreneurs from institutional innovation exceeds the marginal cost of utilizing the resources needed for such innovations. However, since the private benefits of institutional entrepreneurs are different from social benefits, the supply of institutional innovations will not reach the best level of society. Therefore, the supply of

institutional innovations mainly depends on the power structure or power alignment of a vested interest group in a society.

(3) Justin Lin’s analysis

Lin pushes forward the analysis of the supply of institutional innovation and proposes the theory of imposed institutional innovation (J. Lin, 1989). Imposed institutional innovation is introduced and implemented by government orders and laws. Because the institutional arrangement is a kind of public goods, and the problem of “free-ride” is inherent in the process of innovation, if induced institutional innovation is the sole source of new institutional arrangements, the supply of institutional arrangements in a society will be less than the social optimal. Therefore, imposed changes intervened by the state can provide remedies for continuous insufficient institutional supply. Apparently, state intervention also affects the costs and benefits of the state, hence whether the state has incentives to take appropriate actions remains as an issue to be discussed in economic analysis. Specifically, when institutional imbalances occur, if the institutional innovation reduces the utility of the ruler or threatens the survival of the ruler, the state will be inclined to maintain some kind of inefficiency imbalance. In other words, the ruler will only take actions to compensate for the lack of supply for institutional innovations under the following circumstance: that is, the expected marginal revenue of imposing a new institutional arrangement is equal to the expected marginal cost, measured by net tax revenue, political support and other commodities calculated in the ruler’s utility function. No one can guarantee that the ruler with maximum utility will have the incentive to implement policies that increase the supply of institutional arrangements to maximize social wealth. Furthermore, maintaining an inefficient institutional arrangement and the failure of the state to take actions to eliminate institutional imbalances are both policy failures. The causes of policy failures lie in the preferences of the rulers and the limitations of bounded rationality, ideological rigidity, bureaucratic politics, interest conflicts among groups and social science knowledge.

2.2.4 Cost of institutional innovation

Institutional innovation theory has been continuously improved and developed along the two main lines of demand and supply, forming an analytical framework with certain explanatory power for history and reality, but efforts made to establish an implementation model for institutional innovation are insufficient. Some economists from the International Economic Growth Center have contributed to the further refinement of the theory of institutional innovations by combining supply with demand, and corresponding explicit models with

empirical tests. This framework assumes that institutional arrangements are endogenous variables in institutional innovations, while constitutional orders and normative codes of conduct are regarded as exogenous variables.

Many scholars presume that potential benefits cannot be obtained under the current system, and institutional innovation will occur as long as the benefits of changing the current system are greater than the costs. They ignore the time factor from the starting of the change to the change taking effect, and until the final compensation being made. Time has a cost in influencing people’s support for the change, which is called “the absolute cost of change”.

In general, for efficient institutional innovations, people will eventually receive some form of direct or indirect compensation for the cost they pay at the beginning of the reform. But the problem is that, just like the “time lag” of input and output in the production process, especially in the process of technological innovation, there is a certain “time lag” in the institutional reform from the beginning of paying the reform cost to the time the reform is initialing taking effect until the cost is finally compensated. In terms of those relatively significant, complex, wide-ranging and deep-level institutional innovation, the “time lag” may be quite long. In this long period of time, if people only invest in with no returns, and only pay the cost with no benefits, they lose all the original benefits from the old system, while gaining nothing from the new system. It will be hard for them to remain supportive to the institutional change. Furthermore, if people lose confidence in whether the losses they suffered will be compensated, they will resist the change instead of supporting it. As a result, the process of change faces the danger of failure under enormous frictions and resistance. Therefore, incorporating the study of the absolute cost of change in the institutional innovation theory is also the inevitable result of its theoretical innovation.

2.2.5 Types of institutional innovation

Davis and North (1971) state that institutional innovations can be conducted at three levels: by individuals, by cooperative groups formed voluntarily by individuals, or by government agencies. Institutional economics classifies institutional innovations into the following two types:

2.2.5.1 Induced institutional change

Induced institutional change refers to the change or substitution of existing institutional arrangements, or the creation of new institutional arrangements, spontaneously initiated, organized and implemented by individuals or groups of people in response to profit opportunities. The emergence of induced institutional change must be accompanied by some profit opportunities from the institutional imbalance. That is to say, for some reason, the current institutional arrangements are no longer the most effective one in this selection set of institutional arrangements.

There are four reasons for the institutional imbalance: 1) changes in the institutional selection set; 2) changes in technology; 3) changes in the demand for institutional service; 4) changes in other institutional arrangements. The institutional imbalance caused by these factors will bring profit opportunities. To obtain benefits brought by profit opportunities, new institutional arrangements will be created. Since the institutional structure constitutes various institutional arrangements, the imbalance of a particular institutional arrangement will cause the imbalance of the entire institutional structure. Many institutional arrangements are closely related, and changes in one particular institutional arrangement will also cause the imbalance in other related institutional arrangements. Therefore, when imbalance occurs, it is high likely that the process of institutional change may start from one institutional arrangement and be gradually transferred to other institutional arrangements. In the process of institutional change, most institutional arrangements can be inherited from the previous institutional structure. Although the basic characteristics of one certain institutional structure will change when the change of an individual institutional arrangement reaches a critical point, the process of institutional change is yet similar to an evolution process.

2.2.5.2 Imposed institutional change

Imposed institutional change is introduced and implemented by government orders and laws. A state is an institutional arrangement that has a monopoly on the legitimate use of compulsory means in a designated area. The basic function of the state is to provide laws and orders to protect property rights in exchange for taxation. Since there is a large-scale economy when using coercive force, the state belongs to the category of natural monopoly. As a monopolist, the state is capable of providing institutional service at a much lower cost than competing organizations. Induced institutional changes must be triggered by certain profit opportunities that are not available under the original institutional arrangements. However, imposed institutional change can take place purely due to the redistribution of the existing income among

different constituency groups. Moreover, the state has the power to design and enforce appropriate institutional arrangements that cannot be provided in the process of induced institutional change.

Innovation initiated by government agencies has a number of advantages, especially in the following four situations:

1) Government organizations have developed relatively well, but the private market has not been fully developed.

2) The government’s enforced power is needed when the acquisition of potential profits is hindered by private property rights.

3) If the benefits obtained after the implementation of institutional innovation are attributed to all members and not to an individual member, then, no individual member is willing to bear the cost of this institutional innovation. Such institutional innovations can only be carried out by government agencies.

4) In the case of the income redistribution of residents, innovations with imposed measures are needed, which is better for government agencies to carry out.

2.2.6 Process of institutional innovation

Davis and North (1971) divide the process of institutional innovation into the following five steps as shown in Figure 2.1.

After the aforementioned five steps, there comes a state of institutional equilibrium. At this state, there is no opportunity for the outside world to gain potential benefits through institutional innovations, therefore the institutional innovation is stabilized and will not be broken within a period of time. However, as time goes by, when there are changes in production technology, new inventions in the system, new organizational forms, new operation methods, or changes in the social and political environment due to changes in the legal and political factors, the institutional equilibrium will be broken, and there will be demand for a new order and institutional arrangements. In summary, institutional innovation is a revolving process starting from breaking existing institutional equilibrium to generate institutional innovation, then reaching new institutional equilibrium under the current system, and once again heading for another round of institutional innovation.

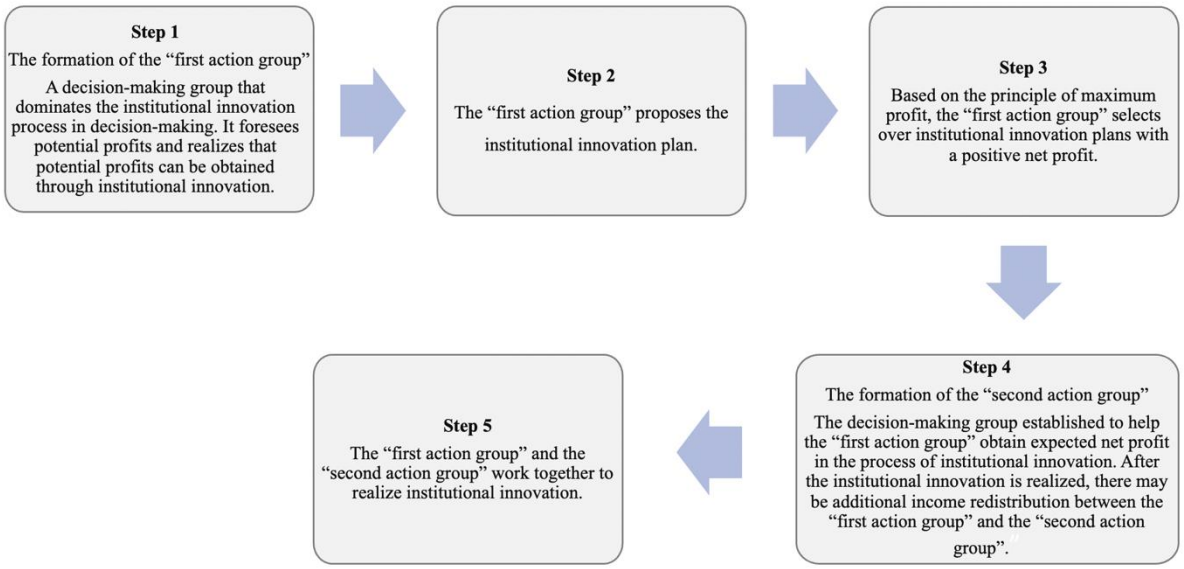

Figure 2.1 Process of institutional innovation

2.3 Institutional change of China’s rural land operation

As the most basic factor of production in rural areas, the land resource is scarce in China, therefore its special status is self-evident. The land operation system directly affects the allocation efficiency of agricultural land and related production factors, thus forms the interrelationship among the state, the collective, and the citizens. How to tackle issues emerging in the land system is of special significance to China’s rural reform and development. The research on China’s rural land operation system has always been the concern of the academic and political circles. Focusing on the changes of the rural land operation system, this thesis will review from four aspects: the stages of rural land operation system evolution, the mode of institutional change of rural land operation system, the evaluation of current rural land operation system and the discussion on rural land operation system reform.

2.3.1 Property rights of China’s rural land

Since Coase puts forward the theory of property rights in the 1930s, economists have started to study property rights and put forward different definitions. Scholars’ differences in the definition of property rights stem from the differences in the preconditions given when discussing property rights, but they reach a consensus on the nature of property rights:1) property rights are exclusive rights, which are legal rights that can enter the market and trade on an equal basis; 2) property rights are a type of basic social rules that regulates people’s

behaviors, which represent a social rights relationship between people, and the premise of its existence is the existence or use of things; 3) property rights are a set of rights bundles that can be decomposed into multiple rights and present a unified state of structure (Pejovich, 1990).

Property rights have three basic attributes: exclusivity, severability, stability and continuity. First, exclusivity refers to the right to exclude others from using the property once the property rights are defined; secondly, severability refers to the fact that a bundle of rights can be separated from the original one and become another bundle of rights; finally, stability and continuity mean that the government has formulated relevant laws to ensure the stability of the property rights system for social stability and ruling status, and once the law is issued, this property rights system will remain unchanged for a long time.

Clear definition of property rights is one of the most important factors affecting economic efficiency. Property rights provide incentives for the externalities of “internalized” economic activities, thereby reducing transaction costs and improving economic efficiency. Different from the reproducibility of industrial capital, land, as the basic production condition of agriculture, is almost constant. Therefore, the relationship between man and land is a rigid and frequent constraint that affects the institutional arrangement and even the economic value of man (Kong, 1993). Steven Cheung applies the property rights method to the analysis of land lease arrangements (Cheung, 1969). He points out that weakened property rights or excessive government intervention will cause inefficient resource allocation; whereas if land is confirmed as private property rights with a clear property rights system, and the free transfer of land is allowed, the production factors and land will achieve the greatest efficiency.

Table 2.1 China’s rural land system reform course since 1949

Time	Policy contents	Land property rights
1950-1952	Abolish feudal land ownership and implement the policy of “Land to the Tiller”	
1953-1956	The cooperative distributed its proceeds based on the quantity and quality of the land the collective members contributed to the cooperative	Collectively owned Collectively operated
1958-1978	The commune implemented unified planning, unified production, unified operation, and equal distribution	
1978-1983	After the experiment of 18 peasants by “contracting output quota to each household” in Xiaogang Village, the “Household Responsibility System” was established.	Separation of two rights: Right of ownership: the collective Right of contracting: household
1999	The “Land Operation Law” was issued, but there were many restrictions on the free transfer of rural land use rights	

2003	The “Rural Land Contract Law” was implemented, and subcontracting, leasing, swap, transfer or other land transfer methods were introduced	Separation of three rights: Right of ownership: the collective Right of contracting: household Right of operation: transferees (the person who operates the land)
2007	The “Property Law” clearly defines land contractual operation rights as real rights, which strengthens the protection of peasants’ land contractual operation rights	

After 1949, China’s rural land system has undergone multiple changes of “comprehensive collectivization → separation of two rights → separation of three rights”, the changes of property rights in the rural land are displayed in Table 2.1.

2.3.1.1 Ownership

Collective ownership of rural land in China, which began in the 1950s, has the following characteristics:

(1) The subject of property right is a mutually independent collective economic legal person, not a natural person.

(2) The collective owner property right of rural land is a limited property right of landowner. Collective ownership of rural land is mainly the elements related to agricultural land or production sites in the land to which it belongs. Mineral resources are owned by the state and will not change due to different land ownership.

(3) The collective owner's property right of rural land is a kind of limited landowner's property right. As a scarce resource, cultivated land is non-renewable. Therefore, the state strengthens the operation of the “farmland” attribute of rural land, restricts the ownership of rural land, and weakens the equity transaction of rural land. For example, property rights cannot be freely transferred, the use of the farmland cannot be changed at will, and even the owner of cultivated land is not allowed to abandon the farmland.

Collective ownership of land costs peasants their principal position in the relationship of land property rights. The main body of the relationship of land property rights has changed from individual peasants to collective economic organizations. Peasants own land property rights in an abstract sense. As a system arrangement, the huge difference between social cost and individual cost and corresponding social benefit and individual benefit makes the actual production function much smaller than the production possibility boundary, and the actual income level of peasants is lower than the potential income level for a long time.

Before the separation of three rights, China’s rural collective property rights were a form of property rights, and the land ownership was owned by peasants collectively, and the incentive function and resource allocation function of rural land property rights were inefficient. With the

continuous development of society and economy, the ownership, use right, income right, and disposal right of the rural land are continuously separated, and when these rights could be independent, the rural land ownership actually only retains the disposal right, and other rights and interests operate independently in a market economy.

First of all, in terms of property rights, land is owned by collectives. Peasants no longer have land ownership as individuals, but only as part of the collective economy. Secondly, in terms of operation rights, land operation rights are owned by the collective. Peasants are no longer looking for talents as independent operators, but only producers in the collective economy.

The reform of the land system has weakened the economic status and economic interests of individual peasants in the rural economy. Collective economic interests have largely replaced the interests of individual peasants and become an intermediate organization for the state to deal with the relationship with peasants. At the same time, the country's economic interests have been significantly strengthened in the rural economy. Through the intermediate link of rural collective economic organizations, the state has basically brought peasants' production and operation activities into the track of the national plan.

This change in the relationship between land property rights has established the order and basic pattern of interests of the country, the collective, and the individual in rural China. The economic status of individual peasants has declined because they are no longer direct landowners, so their economic interests are difficult to obtain. Collective economic organizations have become basic production units in rural areas because of their ownership of land. At the same time, they are also the main body of basic interests in the rural economy and the representatives of peasants' economic interests. Through the establishment of a highly centralized economic system and various policies and administrative means, the state has brought agricultural production activities into the quasi-planned track, which actually controls the production and operation of the collective economy and regulates the interest relationship between the state and the collective economy. The establishment of this interest relationship is inseparable from the relationship between rural land property rights. The basic characteristics of the property rights relationship of rural land collective ownership are: weakening the land property rights of peasants, emptying the land ownership of the collective economy, and strengthening the actual control of the state over the land property rights.

From the perspective of the change of the land property right system, the land is no longer scattered in the hands of individual peasants, which better solves the problem of land concentration. Collective ownership of land has created the basic conditions for agricultural

scale operation, which is conducive to promoting the development of scale operation and agricultural modernization. However, this single land property rights system with weakened property rights has not brought improvement of agricultural labor productivity and the development of agricultural modernization. During more than 20 years of collective land ownership and collective operation, China's agricultural productivity and modernization process have not developed in harmony. The main reasons are:

(1) The empowerment of collective ownership of rural land property rights in China is not facilitated by the market, but organized by the state, which contains the mechanism of weakening property rights (Q. Zhou, 1995a).

(2) As the main body of production, peasants have no enthusiasm for production, the whole agricultural production can only operate in a low-efficiency state, and the allocation and use efficiency of land resources is low.

(3) Under the basic interest relationship arrangement where the national interests are higher than the interests of collective economic organizations, the collective economic interests cannot be effectively guaranteed, and there is a lack of investment in infrastructure and technological progress needed for modern agricultural production and development. The backward situation of agriculture has not been changed, and the accumulated problems have become increasingly prominent.

The above three points provide an environment for institutional changes in the reform of China's rural land system. The emergence of the “Household Responsibility System” has broken the operation mode of single property right formation and collective use of rural land, and has realized the separation of the ownership of rural land from the right of contractual operation.

2.3.1.2 Contracting operation right

The reform of China's economic system starts with the reform of the operation mode of the rural collective economy. The “Household Responsibility System” in the 1980s was an innovation in the property right system, which realized the separation of rural land ownership and use right, that is to say rural land ownership was owned by rural collectives, and peasants contracted land and owned use right. This reform of the rural land property right system has broken the basic mode of collective ownership and operation of rural land, which has lasted for more than 20 years since the 1950s, and has established an innovative mode of “collective ownership of land and household contract operation”. The separation of the two rights of rural land has important innovative value in theory and practice. Its essence is to reimplement the

focus of rural land property rights to peasants/peasant households.

First of all, in the new land property rights relationship of “Household Responsibility System”, under the condition of collective ownership of land, land property rights are no longer concentrated in collective economic organizations, and peasants/peasant households obtain direct land operation rights. This is the major difference between the “Household Responsibility System” and the original land property right relationship. The separation of rural land property rights between collective economic organizations and peasants has changed the operation subject from rural collective economic organizations to peasants, and has re-established the principal position of peasants in the collective economy. As a result, collective economic organizations only exercise the rights as landowners and other rights linked to land operation rights. The most important thing is that the land income rights are owned by peasants along with the contractual rights. The separation of ownership and contractual rights weakens the position and role of collective economic organizations in the relationship of land property rights, and the right of peasants to own land property rights has been strengthened.

Secondly, after obtaining the land operation right, peasants become entities of agricultural operation activities and have their own independent economic interests. Peasants' economic interests are no longer distributed by collective economic organizations, but direct income from agricultural production and operation activities, and the income is distributed between the collective and the state with peasant household as the basic unit. This change in the pattern of interests determined by the change of the land property right system has ensured the priority of peasant household interests in agricultural production and operation activities.

Under the condition that once the contracting operation is confirmed, the economic interests of peasants are no longer determined by the actions of collective economic organizations and the state, but by the peasants' own production and operation activities and market factors. Peasants have become independent interest entities and market subjects in the countryside, and peasants' production enthusiasm has been effectively mobilized. This kind of production enthusiasm derived from direct economic benefits has liberated the productivity of peasants, the main body of agricultural production, and has strong sustainability.

The “Household Responsibility System” realizes the separation of ownership and use right of rural land. Collective ownership and peasants have the use right. This “separation of two rights” property rights system arrangement has changed the low efficiency due to insufficient incentives under the single land property rights system. The use right of land has been activated and the economic function of property rights has been released and strengthened. With the implementation of the contract system, peasants' personal contributions are linked to their

income, and rural productivity is liberated. In addition to turning over public grain, peasants can sell surplus grain, thus forming a free market; in addition to turning over public grain, peasants have autonomy over the grain they cultivate and can choose cash crops with higher returns. As a result, peasants' income has increased and China's rural economy has greatly improved. From 1978 to 1985, the growth rate of grain reached the highest level since the founding of the People's Republic of China.

With the extensive promotion of the “Household Responsibility System”, the property rights relationship of rural land in China characterized by collective land ownership and family operation has failed to have a positive effect on the development of agricultural scale operation and agricultural modernization. First of all, the operation rights of collective land are scattered in the hands of peasants, which actually reduces the scale of land operation; secondly, the result of the decentralization of land operation rights is bound to be a small-scale mode of operation. As a result, the traditional small-scale peasant production mode combining Chinese peasant families with small plots of land has been solidified, and small-scale decentralized operation obviously does not conform to the trend of agricultural scale operation and modernization.

To sum up, the reform of land property right system characterized by “Household Responsibility System” has brought about two results. On the one hand, the adjustment of the relationship between land property rights has highlighted the principal position of peasants in the relationship between land property rights, effectively mobilized the enthusiasm of peasants in production, and played a great role in promoting agricultural production. On the other hand, if the land is contracted by scattered peasant families, the land operation has returned to the traditional small-scale peasant operation mode, which has become an obstacle to agricultural scale operation and is not conducive to the improvement of agricultural productivity and the development of agricultural modernization. The effects of these two aspects on the development of agricultural productivity are different in different periods. In the early stage of the reform, mobilizing peasants' enthusiasm for production played a dominant role in promoting the development of agricultural productivity. When agricultural development entered a stage in which technological progress and scale operation were mainly relied on to improve labor productivity, the traditional small-scale production methods hindered the development of agricultural productivity, and the development of agricultural productivity stagnated. Therefore, the rural land system has an endogenous driving force for further reform, and a new round of land property rights system reform will focus on the problem of the dispersion of land operation rights, so that the arrangement of land property rights relations is conducive to the concentration of operation rights and the operation of land scale and the development of modern agriculture.

2.3.1.3 Circulation of contractual operation right

After the implementation of the “Household Responsibility System”, the ownership and operation rights of land have been separated, the ownership belongs to the collective, and the operation right is controlled by peasants. However, the land operation right held by peasants is limited to the decision-making right of peasants to how to operate on the contracted land. It is an insufficient right and not a real property right. Under the restriction of the system that the right to contractual operation of land cannot be transferred, it is difficult to change the traditional agricultural production mode that combines scattered peasants with small plots of land. The basic trend of agricultural development is land scale operation, and the defect of land property rights relationship under the “Household Responsibility System” is that scattered operation rights are not conducive to the scale operation and modernization development of agriculture. To realize the transformation from traditional agriculture to modern agriculture, the decentralization of land operation rights has become the main problem to be solved in deepening the reform of land property rights.

On the basis of summarizing the practice of the “Household Responsibility System”, the Third Plenary Session of the 17th Central Committee of the Communist Party of China put forward the “circulation of rural land contractual operation right” in October 2008, which means that the owner of land contractual operation right has the right to transfer land contractual operation right among different peasants or economic organizations in the form of subcontracting, exchange, transfer and shareholding cooperation in accordance with the provisions of the rural land contract law. The circulation period shall not exceed the remaining period of the contract period; without legal approval, the contracted land shall not be used for non-agricultural use; the income from the circulation of the right to contractual operation of land shall be owned by the contractor.

The transfer of the right to contractual operation of land has created conditions for promoting agricultural scale operation:

First, it provides the conditions of land property right system for scale operation. Low agricultural labor productivity makes agriculture a weak industry in the development of China's national economy. The basic condition for effectively promoting the development of agricultural scale operation is land concentration, which can only be realized under a certain land property rights system. Under the condition that the right to contractual operation of land is scattered by families, it is feasible to realize the concentration of land operation rights through the circulation of contractual operation rights. It can not only link up with the “Household

Responsibility System”, but also effectively solve the problem of concentration of land operation rights to promote the development of agricultural scale operation on the premise of maintaining long-term stability in the contract relationship.

Second, it provides conditions for the separation of man and land for the transfer of agricultural labor force. Land concentration and agricultural labor transfer are two basic phenomena in the development of agricultural scale operation, and both are related to the land property rights system. Under the “Household Responsibility System”, more agricultural labor forces go to cities to find jobs, but there is not much transfer of land operation rights. The main reason is that the right to contractual operation of land cannot be transferred between peasants. Although migrant agricultural laborers are not engaged in agricultural production, their land operation right contract relationship in rural areas still exists. The transfer of land contract operation rights frees the agricultural labor force from direct land operation rights. When peasants no longer hold the direct operation right of land, the land operation right is no longer a kind of production right for peasants, but a kind of property right. The separation of labor and production rights has built foundation for the separation of man and land and the transfer of agricultural labor to towns and cities.

The transfer of peasants' right to contractual operation of land is another major adjustment to the land property rights system. Its essence is to regard the right to contractual operation of land as a property right, not just a production decision-making right. Its significance lies in that, on the one hand, it can fully realize the power of peasants' right to contractual operation of land, so that the right to contractual operation of land can truly become a property right of peasants; on the other hand, it provides the guarantee of the land property right system for the realization of the concentration of land operation rights.

The right to contractual operation of land has changed from non-transferable to transferable. The greatest change in the property rights relationship reform is that peasants have real property rights to land. As members of collective economic organizations, peasants not only own property rights in the legal sense, but also have actual control over land property rights in the economic sense. Peasants can not only directly use and operate the land, but also transfer this right in the market under certain conditions. The land property rights peasants own now enable peasants with more choices. Peasants can either operate the land themselves or transfer this right to other peasants, who can operate the land. The transfer of the right to contractual operation of land is an equity transaction, and it is also another way for peasants to realize their right to contractual operation of land. The income from the transfer of land contractual operation rights by peasants is their property income.

The circulation of the right to contractual operation of land commercializes the land property rights system. When the right to contractual operation of land cannot be transferred, the right to contractual operation of land is stuck in the hands of peasants in a static state, and the right to contractual operation of land does not have the attribute of commodities. This situation reflects that the rural land property rights system cannot meet the requirements of modern economic development. Under modern economic conditions, the separation of property rights of production factors is a basic trend, and the separation of property rights from production factors is realized through market channels. The value of land contract operation right as a kind of property rights must also be realized and reflected through market channels.

The separation of property rights from factors of production, as far as its content is concerned, means that the property owner transfers part of his property rights to others. Of course, this kind of transfer is not without cost. The circulation of the right to contractual operation of land means that the economic subject with this right, that is, peasants use it as a commodity to circulate in the market to realize the value of the property rights. At the same time, those who do not own the property rights get part of the property rights they need and obtain economic benefits through the use of the rights. The transfer process of land operation rights among different peasants is also the process of optimizing the allocation of land resources. The commercialization of the right to contractual operation of land is an objective demand for the optimal allocation of land resources under the conditions of modern market economy, and is a general feature of modern economic development.

Separating the contract right and the operation right from the rural land contract operation right is in line with the fact that rural land contractors are not necessarily actual operators in China. It also activates the land operation right, realizes the marketization and socialized allocation of land resources, expands the choice range and income channels of peasants, and improves the mobility and allocation efficiency of land elements; the diversified subdivision of operation rights provides the possibility for different entities to enter the agricultural industry, and expands the space for circuitous transactions and deepening division of labor in agricultural operations.

2.3.2 The stages of rural land operation system evolution

Since the founding of the People's Republic of China, with the continuous changes in China's national conditions and political environment, the agricultural operation system has experienced several major changes and undergone four periods, namely, the peasant ownership system during the founding of New China, the collective ownership and collective operation

system during the People’s Commune period, the “Household Responsibility System” in the late 1970s, and the separation of three rights in 2014 (Cheng, 2016; Z. Luo, 2009).

2.3.2.1 The stage of private ownership of rural land

Before 1949, China’s rural land implemented the feudal private ownership system. On the basis of this system, the ownership of the land can be freely transferred, and the right to use the land adopts the tenancy system, which not only causes the low production efficiency but also the gradual concentration of lands in the hands of minority people, resulting in an uneven distribution of wealth and a series of social problems. In October 1949, the “Common Program” adopted by the China Political Consultative Conference clearly pointed out that it is necessary to realize “land to the tiller”. In 1950, based on the guidance of the Land Reform Law of the People’s Republic of China, China carried out the land reform of abolishing the feudal landlord class and implementing the land ownership system of peasants (Sun & Wang, 2019). By mobilizing the grassroots, the land of the landlord and related production materials are confiscated and distributed to poor peasants as per household size, free of charge, equally and fairly. After the reform is completed, peasants receive the land ownership certificate issued by the government. As landowners, peasants are endowed with the right to freely operate, lease and trade the land. This is a kind of complete property right that belongs to the peasant individual with exclusivity. The majority of peasants have the right to free labor during this period, and they are able to enjoy the ownership of the land, and their production enthusiasm is greatly enhanced (Y. Wang & Kong, 2009).

2.3.2.2 The stage of collective ownership of rural land

From 1953 to 1956, the Communist Party of China has led the socialist transformation in the countryside. Both the government and academia believe that it is necessary for the agriculture sector to follow the socialist road. The private ownership of peasants gave rise to another polarization and resulted in the gradual formation of the agricultural production mutual-help group, primary agricultural production cooperative, senior agricultural production cooperative, and people’s commune. The production materials of peasants in the commune, such as land, farm tools, and farm animals, were all transferred to collective ownership (Cai, 2009). However, as a matter of fact, the people’s commune system, characterized by the collective ownership of the land property right, not only hit the enthusiasm of individual peasants, but also surpassed the actual level of productivity at that time. With rural collective organizations as new economic cells, the production output has been significantly lowered across the whole rural area. Under

this circumstance, in order to consolidate the collective ownership of land and stabilize agricultural production, the central government established a "three-level ownership, team-based" system, and formed a system in which the land was jointly owned by people's communes, production brigades, and production teams. At the same time, the public canteen was cancelled and the small-scale by-business and private land of households were restored (S. Wen & Zhang, 2009). Compared with the previous people's commune system, it is a great progress, but the relationship of right, responsibility and interests between the land users and the collective owners remains unclear, rural resources are not effectively utilized, the rural economy stagnates, and the collective economy exists just in name (Tang & Chen, 2011).

2.3.2.3 The "Household Responsibility System"

In the late 1970s, the complete success of the "fixing the farm output quotas for each household" model in Xiaogang village, Fengyang county, Anhui province, laid the foundation for the official implementation of the "Household Responsibility System". In January 1979, Wan Li, then Premier of the State Council, inspected in Xiaogang village and fully affirmed the Xiaogang village mode. In 1983, the Central Committee of the Communist Party of China issued a document to formally confirm the abolition of the people's commune system, and stated that the "Household Responsibility System" "has adopted the principle of combining unified operation with decentralized operation, so that collective superiority and individual enthusiasm are simultaneously exerted. The further improvement and development of the system has made the concrete road of agricultural socialist co-operation more in line with China's actual situation." In the same year, the central government continued to improve the people's government of townships, strengthening rural collective economic organizations, and setting up administrative departments (H. Zhang, 2008). After the abolition of people's commune system, the "Household Responsibility System" was established, with collective ownership of household contracting operation. This new land system separates rights of land ownership and operation, and the principal position of peasants' household operation is established. Compared with the unified government planning in the stage of collective ownership of rural land, peasants have been freed from the planned economy and regained the basic right to independently conduct production and operation activities (Jiang, 2016). Peasants carry out production on a household basis and are responsible for their own profit and loss, which has greatly aroused their enthusiasm for production, and exerted the vitality in the market. Agricultural output has increased substantially (Tao et al., 2013).

This stage of the "Household Responsibility System" is further divided into several sub-

stages. The first stage is from 1978 to 1992. The “Household Responsibility System” was promoted nationwide. The second stage is from 1993 to 2007. On the basis of the “Household Responsibility System”, China explored the transfer of land contractual operation right. Following Comrade Deng Xiaoping’s “Southern Tour” speech, China has set off a wave of reforms in the socialist market economy. Some peasants followed this tide to the city, resulting in a decrease in the utilization rate of farmland. At the same time, many new types of large-scale agricultural entities, such as family farms, have emerged, giving rise to issues like the transfer of the land contractual operation right (Y. Liu, 2007). In 2003, with the promulgation of the Rural Land Contract Law, land circulation was legalized and thus protected. In 2007, the right to land contractual operation was officially defined as “usufruct right”, which strengthened the legal status of its circulation and, in a certain sense, protected the property rights of peasants; the third stage is from 2008 to 2013. The farmland titling has been promoted, and the vitality of rural elements has been further enhanced through the endowment of land rights. In 2008, the Third Plenary Session of the 17th Central Committee of the Communist Party of China proposed to “keep the land contract relationship stable and long-term unchanged, and endow peasants with more sufficient and guaranteed land operation rights”. The farmland titling is a big measure taken at the national level to further clarify the property rights of rural land, which can not only effectively guarantee the standardized flow of rural land element resources in the market, but also avoid a series of contradictions and conflicts (Pu & Yuan, 2017). The fourth stage is from 2013 to the present. Since 2013, China’s economy has entered a state of new normal. The Third Plenary Session of the 18th Central Committee of China has placed more emphasis on “endowing peasants with more property rights” in the operation system of rural land. In 2015, the central government proposed the “three-land” reforms, namely, the marketization reform of collectively-operated construction lands, the rural land expropriation reform, and the homestead system reform (Y. Wu & Sun, 2018).

2.3.2.4 Separation of three rights

China’s agricultural operation system has gone through four periods: the peasant ownership system during the founding of New China, the collective ownership and collective operation system during the People’s Commune period, the “Household Responsibility System” in the late 1970s, and the of separation of three rights in 2014. The “separation of three rights” refers to the separation of ownership, contractual right and operation right of agricultural land, in which, ownership is owned by rural collectives, peasants have the contractual right, and in the process of land circulation, the operation right of the land flow to the operation entity. The

“separation of three rights” land system emphasizes adhering to the fundamental position of the collective ownership of rural land. Through the effective implementation of collective ownership of rural land, unreasonable land acquisition behaviors are restrained, the interests of peasants are protected, the contractors and owners of rural land are ensured to make rational use of land resources, and non-agricultural use of farmland are avoided, thus protecting the whole farmland of the country. Accompanied with the “separation of three rights” is the farmland titling. Through the endowment of land rights, the contradictions and conflicts emerged in the process of the transfer of land contractual operation rights are partially resolved, and peasants are granted with more property rights (Bi et al., 2018).

The “Household Responsibility System” emerged in the 1980s, which mobilized peasants’ production enthusiasm and promoted the development of China's agriculture through the secondary property right system of separation of land ownership and operation rights. In the 1990s, the market-oriented flow of land as a factor of production calls for the adjustment of the secondary land property rights system. The circulation of the right to contractual operation of land has realized the “separation of three rights” of ownership, contractual right and operation right of rural land, which has the following meanings:

(1) Different from the high degree of control of industrial production and the programmatic generation, transmission, acceptance and processing of information, agricultural production has the endogenous attribute of “heavy reliance on natural environment”. Agricultural organizations are more sensitive than industrial organizations in dealing with the natural environment, and agricultural production is more complex and uncertain due to the flexibility of agricultural actions and timeliness of processing. If peasants with the right to contracted agricultural land have insufficient disposal capacity of agricultural land and limited resource allocation space, under constraints of the endogenous complexity of agricultural production and the peasants' operation ability, separating the peasants' operation right from the contractual right and transferring it to the entities with more operation advantages can not only bring about the cooperation surplus of both parties to the transaction, but also improve the allocation efficiency of agricultural land resources.

(2) Even for peasants who are “experts in farming”, the expansion of their family production scale will inevitably bring the problems of labor employment and supervision. Agricultural mechanization is an appropriate choice to replace labor. However, for single-family peasant households, agricultural mechanization investment is a double-edged sword. On the one hand, mechanized operations will undoubtedly need the matching of land operation scale; on the other hand, limited use frequency will inevitably lead to low investment efficiency.

Therefore, the property rights subdivision of agricultural land operation rights and the participation of different subjects can promote the deepening of the division of labor in agricultural operation. For example, the purchase of machinery by peasant households is converted to the provision of intermediate goods services by the market, thus family operation is involved in the socialized division of labor to expand its efficiency boundary. In fact, the Chongzhou case proves that while ensuring the peasants' control in power, most agronomy and activities in peasants' production and operation can be separated. For example, rice seedling raising service can be independent and provided by specialized seedling raising service organizations. Other production activities such as soil preparation, seedling planting, pest control and harvesting can also be outsourced by specialized service organizations.

(3) According to Coase (1937), the subdivision of property rights and the division of labor transactions formed by the entry of multiple subjects will increase transaction costs. Therefore, the activation of agricultural land operation rights still depends on the improvement of transaction organization and transaction methods. Incomplete information also widely exists in agricultural production activities. Compared with a single peasant household, specialized organizations have comparative advantages in information collection and processing. Regarding the supervision cost of professional service organizations, although there is information asymmetry and it is difficult to assess outsourcing organizations, the asset specificity formed by professional services and the competition in the service market can effectively alleviate the supervision cost.

The activation of land operation rights by “separation of three rights” is reflected in the upstream and downstream rural land markets. The upstream market where rural land ownership is located has been standardized. At the same time, the flow and transaction of operation rights between different subjects have fully activated the downstream market. Land circulation price has become the core variable reflecting the relative scarcity of downstream markets. The relaxation and activation of the downstream market also means that the two-way flow of capital, labor and other factors between urban and rural areas is enhanced. Capital flowing to the countryside and technology serving the countryside are supported by the land property rights system, and the autonomy of various micro-subjects in allocating factors in urban and rural areas is enhanced (Gao, 2018).

The “Rural Land Contract Law” stipulates that peasant of rural collective economic organizations, as contractors, “have the right to use, benefit from and transfer the right to contracted land operation according to law, and have the right to independently organize production, operation and disposal of products”. Therefore, under the institutional arrangement

of unshakable collective ownership of the rural land, long-term stability of peasant household contract rights, and the circulation of contract operation rights, revitalizing operation rights and innovating operation methods have become the key to the development of modern agriculture. The innovative practice of Chongzhou agriculture is precisely under the “separation of three rights” that the right to “farm, operate and dispose of products” of land operation right is divided into “operation decision-making right” (to solve the problems of “what to farm” and “how much to farm”) and “production disposal right” (to solve the problems of “who to farm” and “how to farm”). This practice is an innovation of the modern agricultural operation mode.

For the evaluation of the current rural land operation system, scholars mainly point out the positive effects of the current system on the economy and society, and its limitations from the perspectives of politics, law and property rights. In general, the main problem of the current rural land operation system is the lack of property rights theory and the incompleteness of powers and functions of land rights, which has led to a series of problems such as unsmooth land circulation, high land operation costs, and low enthusiasm of peasants for rural governance.

In summary, from a historical perspective, although scholars hold subtle disagreements with the division of stages of institutional changes, it is consistent in general. That is, China’s rural land operation system has experienced three stages: private-joint-private. Although they are both private, the first stage and the third stage are completely different from the perspective of property rights and the stability of land rights, which lead to different behavioral characteristics and agricultural performance of peasants. At the present stage, the “separation of three rights” approach guarantees the contractual rights of peasants, facilitates the transfer of operation rights, and promotes the formation of modern agricultural scale economy. China’s rural land operation system is undergoing the transitional stage of private-to-joint venture development.

2.3.3 The modes of China’s rural land institutional change

Research on modes of China’s rural land institutional change and its influencing factors has always been a hot issue in the academia. China’s rural land institutional change constitutes of two modes: imposed institutional change and induced institutional change.

2.3.3.1 The imposed institutional change

Some scholars attribute China’s rural land institutional change to the government. For example, Shao and Feng, after reviewing the history of China’s rural land institutional change over the past 60 years, suggest that the decisive factors affecting the change of rural land system come

from the preference of big political interest groups. Informal institutional innovation could deviate the formal institution from its designated track by continuous accumulations. No matter it is the change of feudal land ownership to the land private ownership of peasants in the early days of the founding of the People’s Republic, or the change of the land private ownership of peasants to the collective ownership, it does not belong to spontaneously formed institutional changes, but the top-down institutional change generated by the preference of the government (Sao & Feng, 2009). In 1956, more than 200 agricultural cooperatives in Wenjia county, Wenzhou, Zhejiang province has also experimented the approach of contracted production to households, but it was not encouraged by the state, and the then Secretary of Wenjia county Party Committee was directly dismissed. At that time, chief leaders of the country strongly criticized those areas that had implemented the contract of production to households. It can be seen that the ideology and target of the government are the main factors affecting the institutional change (Q. Zhou, 2005). Han and Zhu analyze main bodies of the rural land institutional change since the beginning of New China, such as the central government, the local government, the collectives, and peasants as the main players in the game theory model. They believe that the central government’s strategy has always dominated the evolution of the rural land institutional change. Even though the government may not be able to make the most correct decisions, and the various stakeholders have not achieved equilibrium and maximized benefits, it is the very imbalance among the microscopic subjects that lead to the following induced institutional changes (D. Han & Zhu, 2013).

2.3.3.2 The induced institutional change

At present, the mainstream viewpoint holds that China’s rural land institutional change is an induced institutional change. Based on the analysis of Alcian’s institutional economics, Peng assumes that the change of market demand under market competition is the main factor in the rural land institutional change. With the expansion of market demand, peasants’ needs for clearing and refining property rights become urgent (Peng, 2014). The “Household Responsibility System” is a typical example of induced institutional changes. Long-term low-efficiency production pushes peasants to urgently reform and return to the familiar household farming mode. The implementation of the “Household Responsibility System” is not due to the fact that the government has prepared a complete and specific reform plan, but from the spontaneous needs of peasants. From the perspective of institutional demand, based on the people’s commune system, rural resources cannot be effectively mobilized and the rural economy is stagnant. Peasants have strong needs for a change; from the perspective of

institutional supply, in the history of China, the mode of household farming has been existing and peasants are no strangers to it, therefore the change from unified farming to household contractual farming is acceptable to peasants; from the perspective of institutional change, the “Household Responsibility System” harms the interests of no department, on the contrary, for the collective, the supervision cost can be waived and for the country, the peasants are responsible for their own profit and loss, they no longer ask for money and food (Q. Wei, 2002). Feng and other scholars (Feng et al., 2013) conduct a specific study on land adjustment in rural China, mainly based on the institutional change theory of new institutional economics. By applying the survey data of 17 provinces from 1999 to 2010, they implement empirical analysis of the institutional evolution of rural land adjustment in China and regional differences, revealing that the evolution of China’s land adjustment system is consistent with the characteristics of induced institutional changes. Per capita GDP, geographical conditions, and non-agricultural industry ratios all have an impact on institutional changes. Changes in geographical conditions, economic growth, population growth and industrial structure upgrading have led to a decrease in per capita land area, an increase in the relative scarcity of land, a rise in the relative price of land, and a rise in transaction costs for land adjustment. China’s rural land adjustment is on the approach of extending the land contractual period, reducing adjustment, and stabilizing land rights, so that the definition of property rights will be gradually become clearer.

Some scholars believe that factors causing institutional changes should not be attributed so simply and directly. Based on the academic debate of domestic economists Hua Sheng and Zhou Qiren on China’s rural land institutional change, (Huang, 2016) proposes that it is not conducive to social progress and economic development to argue whether there is more market influence or more government influence. The reform of rural land property rights should organically combine the spontaneous order with the design order. There are many influencing factors in China’s rural land institutional change, such as resource conditions, economic situations, the ideology of large political interest groups. The modes of imposed institutional change and induced institutional change are formed in the process, bringing about a certain impact on the current operating system.

2.4 Theoretical references

This study is based on new institutional economics, institutional innovation theory and the existing research on changes in China’s agricultural land operation system. First of all,

according to the definition of the system, the analysis of the agricultural operation system in this study includes the analysis of the formal system and the informal system; the transaction cost theory provides the analysis tool for the cost of institutional innovation for this study; the property rights theory provides the foundation for property rights analysis of the institutional change of the rural land operation system; principal-agent theory provide the analytic paradigm and theoretical cornerstone on the selection, training, and incentives of professional agriculture managers. The analysis route of the institutional innovation process of the “Agricultural Co-Operation System” is carried out based on the theory of institutional change, especially the mapping analysis of the institutional innovation environment, the supply and demand of institutional innovation, the type of institutional innovation and the process of institutional change in the theory of institutional innovation and the research of this study. The existing research on the change of China’s farmland operation system provides a specific research context of the farmland operation system with characteristics of China’s rural land property rights.

Chapter 3: Research Method and Research Design

3.1 Research method

In this study, grounded theory is chosen as the research method. There are two main considerations:

(1) China’s rural land property rights and agricultural operation issues are with distinctive Chinese characteristics. Whether it is the new institutional economics that emerged from the study of the history of western economic development, including transaction cost theory, property rights theory, or the institution change theory, neither can perfectly explain this extremely complex problem in the Chinese context. We cannot conduct the research simply by imitating existing theories, methods and models abroad. At present, there are no mature measurement scales and research conclusions for the research on China’s agricultural operation system, and further exploration is needed. All these push us to abandon the theoretical hypothesis before the research, in line with the “grounded spirit”, deeply grounded in the phenomenon and practical experience emerging in reality, starting from the original data, summarizing the category of experience, and constructing new theories and models through constant comparison and analysis. The methodological principles of grounded theory and the strict and standardized data collection and analysis process are particularly helpful for the original theoretical construction of China’s agricultural land property rights and operation system, and the research purpose of developing the theory to explain the process of agricultural operation system innovation can be achieved.

(2) Different from other research methods, grounded theory is an inductive approach “grounded in the data”, rather than a deductive method “applying already known results and theories to data”. Grounded theory starts directly from the original data, summarizes the category of experience, and then generates a new theory. It does not make assumptions before the research starts. Its theory is deeply grounded in the original data and is conducive to our original theoretical construction of rural land operation problems. Regarding the research field of agricultural operation system innovation in the context of “three rights separation” in China’s rural land, a deductive approach to generating a theory of innovative agricultural operation system is not possible, given the lack of previous models in this area. Grounded theory is not to confirm or verify an existing theory, but to follow the research path of “close proximity to the context-discovering problems-finding cases-obtaining data-preliminary theory building-

comparing literature-generating a theory”. It is an iterative process where, through “constant comparison” and “theoretical sampling”, researchers analyze and collect data simultaneously until “no new concepts, categories, or ideas are generated”, that is to say, “theoretical saturation is reached”, and a theory is generated (Charmaz, 2006). Therefore, the grounded theory approach is suitable for this study to use a deductive approach to generating a theory from practical experience, extracting and building new theories.

3.2 Grounded theory

Social phenomena are numerous and complex, and complex operation phenomena require research methods that can analyze complex issues. Two basic paradigms of operation research are quantitative research and qualitative research. Quantitative research is suitable for examining the relationship between the variables that have been identified, but it lacks the power to identify and explain phenomena that have not yet been clearly defined or cannot be deduced by existing theories. In this case, qualitative research is required to first analyze the phenomenon to be studied, define or give a theoretical framework. Qualitative research has attracted more and more attention from operation scholars because of its strong supplement to quantitative research by emphasizing the process, context, and specificity of the research.

Grounded theory first proposed by Glaser and Strauss (1967) as a methodology of social science research, has exerted a wide range of influences on the western academic circles in the past 50 years and the Chinese academic circles in the past 20 years (S. Wu & Li, 2020). As an important qualitative research methodology, the purpose of grounded theory is to establish a theory based on empirical data. Researchers do not conceive theoretical hypotheses before conducting the field research, but directly summarize the experience from the survey data. In the process of constant comparison, they extract concepts that reflect social phenomena, develop categories and then classify them, and finally build the theory (J. Zhang, 2010). Since grounded theory was introduced, it has received great attention from operation scholars because of its scientific operation process and practical methodological characteristics (Suddaby, 2006), and it has been accepted by more and more operation scholars (Ding et al., 2012).

3.2.1 The proposal of grounded theory and its basic ideas

Grounded theory was first proposed by Glaser and Strauss in 1967 (Glaser & Strauss, 1967), and has been widely used in research of multiple disciplines such as operation, education, and nursing. Its main purpose is to build new theories. Grounded theory is often used to explain

phenomena that are not fully understood (Lee, 2014).

The establishment of grounded theory is closely connected with the overall background of American sociological research in the 20th century (S. Wu & Li, 2020). The background of the proposal of grounded theory is to respond to the positivist paradigm that dominated American sociological research in the 1960s, and to challenge “grand theory”. In order to bridge the binary opposition between theoretical research and empirical research so as to open up a new research model, Glaser, who graduated from Columbia University, and Strauss, who graduated from the University of Chicago, proposed a “generated” (Glaser, 2008) rather than “verified” methodology, that is, “grounded theory” (Strauss & Corbin, 1998). In regard to the golden rules of quantitative methods in the positivist paradigm, such as “systematic observations” “reproducible experiments” “operational definitions of concepts” “logically derived hypotheses” and “evidence to verify theory”, grounded theory has put forward different propositions (Charmaz, 2006), and finally led a “qualitative revolution” in the field of social sciences (Hallberg, 2006).

The focus of the debate between grounded theory and grand theory is whether the research objects of natural science and social science are the same. Grand theory believes that the purpose of social science research is to reveal the existing influence mechanism of social behavior, and its research objects are no different from those of natural sciences, and they are both “objective realities”. Based on this, grand theory pursues a universal theoretical explanation or a unified theoretical framework. Glaser & Strauss (Glaser & Strauss, 1967) believe that the new theory can be based on careful observation of daily real life and the observer’s own interpretation of events, that is, the object of study can be “interpretive realities”. “Interpretive realities” are not completely objective, but they are also important for understanding human behaviors and forming new theories.

In methodology, grounded theory compromises extreme empiricism and complete relativism, and proposes an approach to generating theories through systematic and rigorous data collection and analysis (Suddaby, 2006). Grounded theory emphasizes the importance of the following two basic ideas in research:

One is “constant comparison”, which emphasizes the simultaneous collection and analysis of data and constant interaction. Due to the complexity of the phenomenon or problem studied, it is necessary to constantly analyze the data collected, and keep refining and revising the theory. Different from positivism’s claim of separating data collection from data analysis, grounded theory believes that data collection and theory building is a constantly interactive process of “collecting data-building theory-collecting data-improving theory”. When collecting the data,

once new questions emerge, “constant comparison” requires researchers to find new data from other information sources for verification, and constantly compare the newly collected data with the concepts or categories that have been generated based on the existing data. When a new category that is different from the existing category emerges, the theory needs to be revised to include the new category into the theory. This process is repeated until the newly collected data can be summarized by the existing categories, and no new categories are generated. When new data can no longer generate new knowledge, that is, the existing theoretical framework is relatively mature and will not be affected by the new data in the short term, it will reach theoretical saturation (Lee, 2014). The short-term end of the grounded theory comes when the theory is presented after the theoretical saturation is reached. Therefore, grounded theory begins with organizational phenomena and stops at theoretical saturation. It should be pointed out that due to different degrees of theoretical saturation, grounded theoretical research can be continued for a long time to obtain a more universal theoretical model, or it can be done within the limits of resources to develop a relatively preliminary theoretical model.

The other basic idea of grounded theory is “theoretical sampling”, which emphasizes that when selecting research objects, it is not necessary to pursue the “independence” and random principles of research objects in statistics, but to constantly compare the correlations, similarities and differences of the research objects in order to discover theoretical elements. Grounded theory does not require a strong clinging to a priori hypothesis, but holds the idea that new data may generate a new theory (Glaser & Strauss, 1967). Theoretical sampling refers to the selection of data collection approaches in the following step based on the currently constructed theory.

Grounded theory stresses that the purpose of “constant comparison” and “theoretical sampling” is to obtain higher research validity. Considering the proposing process of grounded theory and the basic ideas it emphasizes, grounded theory is more suited for studying how individuals interpret the real world, rather than studying how the objective reality is. In other words, theoretical concepts, of which connotation and extension have been well explained and widely supported, are appropriate to be verified by quantitative research; while the research on theoretical concepts, of which connotation and extension are not clear or still controversial, is more suitable to adopt a qualitative research method, especially the grounded theory approach (L. Wang & Gao, 2010).

3.2.2 Three schools of grounded theory

Grounded theory has developed into three major schools: 1) Classic Grounded Theory, 2)

Straussian Grounded Theory, 3) Constructivist Grounded Theory. Representatives are Glaser & Strauss (1967), Strauss (1994), Strauss and Corbin (1990) and Charmaz (2006, 2008) respectively. Each school varies in its methodological principles, coding principles and coding procedures (Holton, 2010; X. Jia & Heng, 2016; Kenny, 2014, 2015) (See Table 3.1 for details).

Table 3.1 Three schools of grounded theory

	Classic Grounded Theory	Straussian Grounded Theory	Constructivist Grounded Theory
Author, year	Glaser & Strauss, 1967 Holton, 2010	Strauss & Corbin, 1990	Charmaz, 2006
Methodological principle	It avoids presupposing specific research questions, without much research preparation and literature review. Researchers may have general research topics; research questions naturally emerge from social processes and the process of analyzing them. Use methods like in-depth interview and observation to collect experience materials. Quantitative materials and qualitative materials are of equal importance. Referring to the principle of constant comparison, follow the standardized data processing steps to complete the theoretical construction	A rigorous research program with a higher level of programming and a more systematic and rigorous coding process that can rival quantitative research. It is most widely recognized and applied because of the procedural refinement of the research steps and techniques of grounded theory in a "step by step fashion". The theory is loyal to the data; it focuses on exploring the laws in the data with the help of techniques such as presets.	It uses the "21st Century Methodological Prism" to re-examine and develop the grounded theory. It believes that the coding process of Straussian Grounded Theory has suppressed the creativity of researchers, and that qualitative research requires a fluid framework. It advocates to tolerate ambiguity and believes that the laws in the data exist objectively, but they can be constructed and recognized by people.
Coding principle	Theory comes from practice, everything is data; it stresses to reduce human subjectivity as much as possible, and gradually generalize theories through constant comparison of data.	People are not only passive recipients of social forces, but rather active actors in real life; data implies many assumptions, which can be summarized and sorted out in a preset way.	Combining the coding principles of Classic Grounded Theory and Straussian Grounded Theory, emphasizing that people can understand the world in a theoretically constructed way.
Coding procedure	Open coding Selective coding Theoretical coding	Open coding Axial coding Selective coding	Initial coding Focused coding

Source: by the author

Looking back at the 50-year development of grounded theory, although there are differences between the three schools, they still present the following common core characteristics (S. Wu & Li, 2020):

First, adhere to the principle of "grounded" effectiveness, avoid pre-setting research questions and research frameworks, advocate step-by-step induction, and build theories from

empirical materials instead of following the logic of “deduction-verification” and deducting theoretical propositions from the existing knowledge system.

Second, both the data collection and data processing follow a set of strict procedures. First of all, the main source of the data for research is the primary data obtained through in-depth interviews and reality observation; secondly, coding the textual materials and gradually extracting theoretical concepts and categories is the core process of conducting grounded theoretical research. Data collection and data analysis is a rolling process that embeds each other and iteratively. Iterative research strategy is a methodology that must be followed in data analysis.

Third, the selection of research objects adopts a “theoretical sampling” approach rather than random sampling and statistical sampling in empirical research. Research objects emerge gradually during the research process, not preset.

Forth, “constant comparison” is the core and most important analysis method. The events and categories in the research need to be compared and cross-compared. The objects of comparison can also be selected from the literature, realistic observation and experience. The characteristics of the research objects can be found through comparison, so as to realize conceptualization and set the change scale of the theoretical category, thus determine the scope and conditions of application for theory construction.

3.2.3 The analysis process of grounded theory

With the rise of grounded theory, many scholars have explored the techniques to better application of grounded theory (Holton, 2010; Kenny, 2014, 2015; Pandit, 1996). As per the existing literature, there are five steps in the analysis process of grounded theory. This research follows the process of “develop research question(s) →data collection→data analysis→theory building→literature review” to conduct the grounded theory analysis, as shown in Figure 3.1.

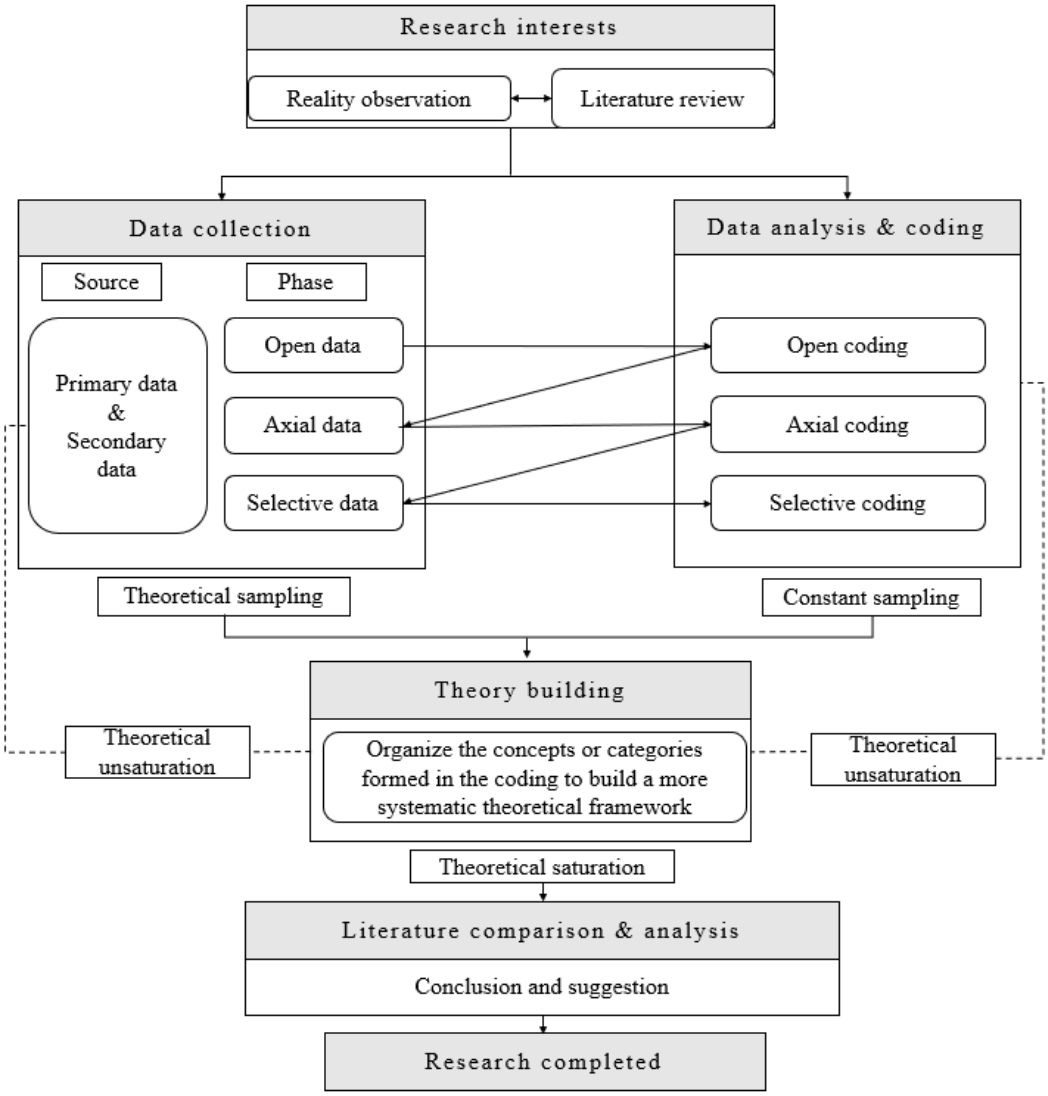

Figure 3.1 The analysis process of grounded theory

(1) Study the existing literature and develop research questions

Grounded theory emphasizes the natural emergence of research questions, that is to say, the researcher should start the research with a general and vague interest in certain aspect at the beginning, and naturally discover and develop research questions during the process of reality observation and interactions with different subjects. Grounded theory also advocates the simultaneous collection and study of literature to guide the research.

(2) Data collection

The sampling of grounded theory research includes initial sampling and theoretical sampling.

Initial sampling: After the initial selection of research samples, the data is collected and analyzed. There are many sources to collect data, including the primary data obtained through in-depth interviews, in-person observations and fieldworks; and the secondary data obtained

through literature review, such as Yearbooks, authoritative statistical data, news reports, biographies, letters and diaries. Interview is a very important method of data collection in grounded theory. In order to avoid any preconceived guidance and influences, researchers should use open-ended questions to encourage interviewees to tell real stories and real thoughts (X. Jia & Tang, 2010).

Theoretical sampling: Based on the results of the initial data analysis, the sampling and data collection are continued. The sampling process is not preset, but constantly adjusted and gradually formed during the research process. The data sources of the theoretical sampling after the initial sampling are multiple, consisting of both qualitative data and quantitative data. It is particularly worth noticing that data collection and analysis should be carried out simultaneously, and there should be room for data collection adjustment.

(3) Data analysis and coding

The data processing process of grounded theory is a step-by-step coding process of decomposition and synthesis, including:

Open coding: the process of labeling concepts, defining and developing categories. It consists of four steps: labeling concepts-extracting concepts-defining categories-developing categories. After categories are classified, new categories can be added through data collection and coding.

Axial coding: establish overarching category and sub-category, and organize the sub-category around the overarching category by using the paradigm model.

Selective coding: analyze the internal logic between the overarching categories, extract and establish the core categories from the overarching categories, and then develop theories around core categories.

(4) Theory building and developing

Theory building is to organize the concepts or categories formed in the coding to build a theoretical model or theoretical framework. The basic idea of the theoretical development is to make “constant comparison” to test the theoretical saturation. When the newly collected data can no longer yield new categories and make no new contribution to the theory building, theoretical saturation is reached and the research is completed; when the newly collected data has made new contributions to the theory building and new categories emerged, the research should return to the data collection and data analysis phase, and constant comparison is needed until theoretical saturation is reached (Charmaz, 2006).

(5) Literature dialogue

When the theoretical saturation is reached, it comes to the final step of grounded theory

research, which is to compare the initially built theory with existing literature, illustrate the characteristics, value and contribution of the newly generated theory, discover and supplement the deficiencies of existing concepts, categories and theories.

3.2.4 Research paradigm of grounded theory in Chinese operation

The main purpose of scientific research is to establish theories, test theories, or develop existing theories (Z. Chen, Zhang, et al., 2008). A statistic on the contextual research in China published in top international operation journals from 1981 to 2010 shows that only 3.7% of papers on Chinese operation research published in the past 30 years are contextual research on the characteristics of Chinese operation (L. Jia & Du, 2010). From a global perspective, most of the existing operation theories are developed in an American context. Xu Shuying, who advocates the “indigenization movement of social sciences”, points out that high-level local research is not “simply testing the applicability of western theories or models”, nor being “used to verify theories or models by using samples outside of Europe and the United States”. It certainly cannot be a “straight copy of existing measurements” as well (Tsui, 2004; Xu & Zhang, 2011).

In the past two decades, with the spread of academic thoughts, grounded theory has exerted a wide range of influences in Chinese academic circles. Concerning about the “localization of social science”, many Chinese scholars have argued about the application and development of grounded theory on Chinese operation researches (X. Chen, 2015; Fan et al., 2017; X. Jia & Heng, 2016; Jing, 2017; Sun, 2011; L. Wang & Gao, 2010). Chinese operation phenomena are highly complex, vague, dynamic and unique. Establishing and developing the operation theory in Chinese local context is extremely complex. Researchers are facing both the urgency of developing Chinese indigenous theories and the dilemma that Chinese operation phenomena are not yet clear, and cannot be fully explained by existing theories. Grounded theory provides a better research method to observe operation phenomena, understand the essence and characteristics of operation problems with Chinese characteristics, and build new theories in a complex, dynamic, and fuzzy operation environment. More and more scholars encourage the use of a grounded theory research method to build Chinese native operation theory and focus on the contribution of grounded theory to the development of Chinese native operation theory (Fan et al., 2017; Xu & Zhang, 2011).

Xu and Zhang (2011) have repeatedly argued about the necessity of grounded theoretical research in Chinese native operation research. “To discover the laws lying in new situations or new phenomena, it is necessary to conduct grounded research and apply an inductive approach”.

“When the phenomenon is not clear or the existing theories cannot answer the questions scholars interested in, a grounded theory method is commonly acknowledged”. “The demand for conducting grounded theoretical research in a new context (such as in China) is high”. “Indigenous theories built in a certain context, as long as they are the product of high-quality research, should be able to contribute to global operation research”.

Based on the “grounded spirit” of theory derived from practice and theory guiding practice, X. Jia and Heng (2016) reconcile the oneness and fragmentation of research methods in two extreme models, one is the “sugar eating model” (H. Li, 2006) which lacks qualitative research and only relies on mathematical reasoning to draw conclusions in Chinese operation research, and the other one is the “experience dependence model” (J. Wang et al., 2000) which lacks quantitative research and only relies on simple speculation to draw conclusions. They combine the qualitative theoretical construction with the quantitative theoretical test, and propose a “two-stage, five-process” grounded research paradigm of Chinese operation (see Annex B), with the purpose of providing Chinese scholars with a set of internationally recognized norms by improving the internal and external theoretical reliability and validity.

X. Jia & Heng (2016)’s “grounded research paradigm of Chinese operation” includes two stages: theory building and theory test. At the “theory building” stage, qualitative research is carried out. Starting from the phenomenon of local context and operation practice, research problems are determined through comparison with existing literature; then data collection starts by conducting in-depth field surveys, in-person interviews and reality observations; the data is processed by strictly following the coding procedures, during which core categories naturally emerge; the next process is to dig out the causal relationship between core categories, when no new categories are generated, the core categories reach saturation; by following strict coding procedures and constantly comparing the core category with the existing literature, a new theory is generated, thus comes to the end of the theoretical building stage of qualitative research. At the “theory test” stage, by adopting quantitative research methods, statistical data with a large sample is used to test the universality or applicable conditions of the theory generated during the qualitative research period so as to form the final theory.

There are five judgement criteria in the “grounded research paradigm of Chinese operation” X. Jia and Heng (2016), which are “whether research problems arise”, “whether core categories emerge”, “whether the core categories are saturated”, “whether the preliminary theory is saturated” and “whether the theory built is saturated”. Among them, the two processes “whether research questions emerge” and “whether the theory built is saturated” are relatively independent, and do not overlap with other judgment processes. They represent the stage of

problem emergence and initial theory building. The other three processes “whether core categories emerge”, “whether the core categories are saturated” and “whether the initial theory is saturated” are at the data collection and processing stage, which requires constant comparison, repeated circulation, and interactive iterations until the theory is saturated.

3.3 Sample selection based on theoretical sampling

This research follows the principle of “theoretical sampling” of grounded theory, emphasizing the relevance and depth of the concept of sampling, and selecting people, events, places, and things that best reflect and present the variation between concepts to increase the attributes of concepts and the density of dimensions (Strauss & Corbin, 1990). During the process of theoretical sampling, the analysis results from the previous process will provide guidance for the data collection and analysis of the nest step. Through constant comparison and refinement process, concepts and categories of existing doubts or unknown areas will be explained to realize the continuous development and enrichment of concepts and categories until the theory is saturated.

Based on the principle of problem-oriented and process-driven, as well as focusing on the information richness of case samples and their contribution to theory, this study selects the practice in Chongzhou, Sichuan Province as the research sample. The main reasons are as follow:

(1) The originality: There has been innovative exploration and practice of modern agricultural operation methods in Chongzhou since 2010. Its symbol is the establishment of the Yangliu Land Shareholding Cooperative in Longxing town, in May 2010. This cooperative is the prototype of “Chongzhou ‘1+4’ modern agricultural operation system”. The “Chongzhou ‘1+4’ modern agricultural operation system” has become the prototype of the “Agricultural Co-Operation System”, and Chongzhou has therefore become the original place and starting point of the “Agricultural Co-Operation System” institutional innovation.

(2) The representativity: The three delimmas of “who will farm”, “what to farm” and “how to farm” faced by agricultural operations in Chongzhou widely exist in agricultural operations after the implementation of the “Household Responsibility System” in rural China for more than 30 years. The four constrains faced by the agricultural operations in Chongzhou are representative and typical in China.

(3) The value of generalization: Due to the originality and representativity of the Chongzhou case, the innovative exploration and practice of modern agricultural operation of

Chongzhou, as well as its development from “closed pilot” to “extended promotion”, were written into the “No.1 central document”. An innovative practice, which started at the grassroots level in Chongzhou, realized the process of institutional innovation. As a result, the “Agricultural Co-Operation System” is promoted as a system throughout the country. The Chongzhou case is not an independent sample. Its institutional innovation has strong external effects, and its generalization value in China’s rural and agricultural operations is beyond doubt.

In view of the above, selected as the sampling research object of this study, the Chongzhou case can provide abundant information for the research problems. Through “constant comparison” in the process of grounded theoretical analysis, research samples and research data can cover all aspects of the research context of this innovative agricultural operation system “Agricultural Co-Operation System”, so as to improve the theoretical validity until the theoretical sampling reaches saturation. Finally, the theoretical building is completed, and the process of institutional innovation and the innovative mode of “Agricultural Co-Operation System” are formed.

The analysis sample selected in this study is the origin case of China’s “Agricultural Co-Operation System”, Yangliu Land Cooperative in Longxing Town, Chongzhou. Data collection focuses on the participants of innovative practice, including “China’s first agriculture CEO” Zhou Weisong, as an innovator of grassroots practice of agricultural operation system, “the first person who eats a crab” and an innovative “pioneer cow”. Zhou Weisong has provided the most abundant practical information for this study. How to “legalize” a grassroots innovative practice or even institutionalize it into an institution (or policy) of a country (or region) is decided by the government authority in a mandatory form. Mr. Zhao, then secretary of the Chongzhou Party Committee, who was the top leader of Chongzhou local government is the key data source. In order to avoid bias, the author constitutes a group of 6 persons to do the interviews. He contributes his own experience to restore the whole process of institutional change.

One innovative practice can surely trigger institutional changes, whereas an institutional innovation requires values of universalization and generalization at the institutional level. In order to avoid research bias caused by the particularity and contingency of the first case, based on the analysis result, the theoretical sampling is expanded to multiple cooperatives and multiple parties. Multi-person and multi-round of in-depth interviews are conducted on the process and mode of institutional innovation. The theory is generated in the process of “constant comparison” through extensive data collection.

Followed by the methodology of institutional change and innovation theory, we adopt a research method which emphasizes historical events analysis and case study, so as to avoid the

research bias which might be caused by only focusing on a specific context, improve theoretical validity, and maximize the saturation of theoretical sampling until the theory is saturated.

3.4Data collection and analysis method

3.4.1 Data collection

In order to obtain data that is not affected by bias, the data collection of this research follows several principles. 1) Selection of research site: to obtain the real disclosure of research phenomena and a full understanding of the inner world and experience of the event participants, in principle, the scene of “natural state” is selected instead of the deliberately arranged “laboratory”. 2) The size of the research samples: in the selection of the number of research objects, a “large” sample size is not a main concern. More focus is on those from whom largest amount of information can be collected and disclosed. 3) Relationship with the research subjects: to grasp the core of the problem, actively gain trust of the research subjects, and at the same time adhere to professional knowledge and judgment to obtain the truth. 4) Open attitude in the research process: construct the original data through observation, interview, literature analysis and other technologies, without prior and limiting problems, so that research problems can emerge naturally during the research process.

The data needed for this study includes primary data and secondary data. Taking the “institutional innovation process and innovation model of the “Agricultural Co-Operation System” as the main line, we have conducted in-depth interviews with relevant personnel in Chongzhou, where the “Agricultural Co-Operation System” was initiated, to obtain primary data.

Semi-structured in-depth interviews help to better discover and understand some unclear concepts or categories, and study situations from the perspective of participants. During March 2019 to March 2021, a total of 18 in-depth interviews were conducted, including individual interviews and group interviews. During the research period, due to the COVID-19 epidemic, some interviews were conducted online. In-depth interviews were conducted with 24 people in five categories: government officials, agriculture CEOs, members of the Executive Board, members of the Supervisory Board, and representatives of peasants in the cooperative. The interview outlines for each category of personnel are detailed in Annex C. The design of the interview outline allows flexibility in the ordering of questions and supports in-depth discussion. The interview starts with the interviewer introducing the purpose of the interview, using

tentative languages, such as “please tell me more about...” “what do you mean by saying ...” “can you recall ...”, to encourage interviewees to expand their answers to the questions. If the respondent’s answer is hard to understand, the interviewer would either repeat the question or proceed in a way that the respondent can understand. Through the effective adoption of interview techniques, most of the interviewees showed willingness to talk and had active interaction during the interview process. By observing the interviewee’s gestures, tones and emotional responses, we have obtained information revealing motivations, emotions and attitudes for decision-making. With the consent of the interviewees, the in-depth interviews of this study were recorded and transcribed. Table 3.2 lists the data collection methods.

Table 3.2 Data collection methods

Method	Source
In-depth interview	Government officials · 5 times, 2.5 hours/time · The then top leader of the local government, a township cadre · Offline in-depth interviews, online in-depth interviews Agriculture CEOs · 8 times, 3 hours/time · The first and second generation of Agriculture CEOs · Offline in-depth interviews, online in-depth interviews Executive Board · 2 times, 2.5 hours/time · director, members of the Executive Board · Secretary of Qingqiao Village Communist Party Branch · Offline in-depth interviews, online in-depth interviews Supervisory Board · 1 time, 3 hours/time · Director, members of the Supervisory Board · Offline in-depth interviews, online in-depth interviews Peasant representatives in the cooperatives · 2 times, 2.5 hours/time · Member of the peasant household · Offline in-depth interview
Additional information query	Websites, news reports, media, research papers, government documents
Literature analysis	Extant literature
Observation	Observing the subject directly and discovering psychological activities and behaviors

3.4.2 Data processing and analysis

This study employs the Constructivist’s approach to grounded theory proposed by Charmaz to conduct data analysis, emphasizing the natural emergence of concepts rather than formulating or programming the concept. Key steps include open coding, theoretical coding, selective coding, and theoretical saturation test to verify the theoretical model constructed and explain relevant research conclusions.

In this study, data sources are diverse, and data collection channels are multiple. The data collected are qualitatively confirmed by using the triangulation approach. Due to the qualitative research characteristics of grounded theory research, primary data obtained through triangular mutual evidence and secondary data obtained through public sources are processed by content analysis to avoid the personal intervention of researchers. The object of content analysis is people and events, and the purpose is to describe various information contents objectively and systematically. The data obtained from in-depth interviews are subjected to multiple rounds of text processing of coding, classification, semantic refinement and judgment to generate useful data (Kerlinger, 1973).

Particularly, grounded theory research is an iterative process of continuous interaction through data collection and data analysis. The research principles of “constant comparison” and “theoretical sampling” require researchers to keep sharp and in-depth mining of the emerging problems in the grounded process. In view of this, the primary text data collected is not handled by any text analysis software such as WordStat or DiVoMiner. The data processing is conducted manually, strictly following the data analytics and coding approaches in grounded theory. The primary data obtained from in-depth interviews is processed by the content analysis approach, while the primary data obtained from the questionnaire survey is mainly analyzed by using the descriptive statistical analysis approach through software such as EXCEL and SPSS.

Data analysis technology of grounded theory is used to carry out data processing by incorporating the flexibility of data acquisition with the rigor of data analysis. Through open decoding, we decompose the original data and extract concepts and categories; through axial decoding, we explore the connotation of the data to form and develop concepts and categories, then identify the connection between concepts and categories, reorganize the data and extract main categories; based on selective decoding, we focus on main categories to determine core categories and storylines.

To take full advantage of qualitative research, we adopt the approach of simultaneously collecting, analyzing, adjusting, and supplementing, and constantly compare data from different sources, data and concepts, and different concepts. Theoretical sampling and follow-up data collection are conducted based on the concepts, questions and assumptions derived from the data. In order to enhance the theoretical sense of data analysis, the validity and explanatory power of concepts, concepts and categories are extracted through discussion, and the essential connotations and logical relationships are constantly explored.

3.5 Analysis process: data coding

3.5.1 Open coding

The open coding process is a process of interpreting and examining the connotation of the original sentences collected in the interviews word by word, decomposing and reorganizing the data, using labels, concepts and categories to generate and express the essence of the corresponding sentences, gradually accumulating the data and summarizing key words, then forming concepts and gathering related concepts into concept groups, and finally establishing conceptual categories. After constant data collection, sorting, comparison, and analysis, the conceptual category becomes comprehensive, the relationship between different categories is clear, and the core category emerges.

The concepts and categories extracted from each part of open coding are only the results of phased analysis, and the results are not static, independent or unrelated. After constant verification and repeated comparison between the concepts and categories that emerged in the first part and the concepts and categories that emerged in the subsequent parts, the concepts and categories extracted can better reflect the authenticity of the original data and the richness of the connotation. With the gradual advance of the extracting and understanding of the data in the open coding process, concepts and categories derived from the open coding gradually replace the content of a large number of original data. The focus of the research is switched into the investigation of the relationship between these concepts and categories. Conceptualization and categorization have become the basis of grounded theoretical research, which encourages researchers to continue to compare, further explore and identify new relationships between categories.

In order to avoid the personal bias of the researcher, open coding of the interview data is conducted according to its own state. The compilation of the original interview data is carried out by group members independently. When there is an inconsistency in coding, the group will discuss and determine the final coding and conduct a consistency check to ensure the credibility and consistency of the conclusion.

3.5.2 Axial coding

After the analysis of categories by open coding, the axial coding is needed to identify and construct the logical relationship and evolution law between the categories. Axial coding is the process of establishing the overarching category and sub-category, and organizing the sub-

categories around the overarching category by using the paradigm model. Referring to the paradigm model analysis idea of the axial coding technology in grounded theory, this research follows the three dimensions of “conditions/causes →action/interaction strategies → consequences”, identifies the logical relationship between the categories through constant comparison of the data, then summarizes new categories reflecting these logical relationships.

3.5.3 Selective coding

Selective coding is conducted after completing open coding and axial coding. It uses storylines to analyze the internal logical relationship between overarching categories, then extracts a core category from overarching categories, and organize theories around this core category. The core category has the following characteristics: it occupies a central position in all categories, and is more concentrated than other categories; it appears frequently; it has a meaning connection with other categories; in the substantive theory, it is easier to develop into a more generalized theory than other categories (L. Wang & Gao, 2010).

The process of selective coding is the process of analyzing and verifying the relationship between the overarching categories and other categories around the core category, and the process of complementing the conceptualized category which has not yet developed completely. Selective coding includes the following processes:

(1) Use analytical terms to describe the research phenomenon in general, and provide a storyline that reflects the theoretical clues guided by the core category.

(2) Use the paradigm model to find the subsidiary category of the core category, determine the logical relationship between the core category and the subsidiary category, and establish a theory in the form of “A (condition) → B (phenomenon) → C (environment) → D (action/interaction and its strategy) →E (consequence)”.

(3) Determine the attributes and dimensions of the core category, classify and position the subsidiary categories at the dimensional level.

(4) Combining empirical evidence, examine whether the theory obtained through the above process is reliable.

(5) Fill in missing details through theoretical sampling to ensure sufficient category density.

3.5.4 Theoretical saturation test

Whether to stop sampling is determined by the theoretical saturation test. When a new concept or a new category does not emerge from the added interviews, nor from the information newly obtained, or data newly collected within the scope of the research, and no new attribute is obtained, that is, when new data can no longer generate new theoretical insights, the theory has reached saturation.

Chapter 4: Field Work

4.1 Sample selection under the principle of theoretical sampling

This research follows the principle of “theoretical sampling” of grounded theory, emphasizing the relevance and depth of the concept of sampling, and selecting people, events, places and things that best reflect and present the variation between concepts to increase the attributes of concepts and the density of dimensions (Strauss & Corbin, 1990). During the process of theoretical sampling, the analysis results from the previous process will provide guidance for data collection and analysis in the next step. Through the constant comparison and refinement process, concepts and categories of existing doubts or unknown areas will be explained to realize the continuous development and enrichment of concepts and categories until the theory is saturated.

4.1.1 Research samples and data collection methods

Effectively collecting research data, analyzing data and explaining its theoretical significance is the core of grounded theoretical research. In order to obtain abundant data, this research carried out online and offline in-depth interviews, group interviews, and on-site observations. The research was promoted in the process of continuous interaction with the data through interview records, text analysis, and coding.

Two rural land shareholding cooperatives, Yangliu Cooperative and Qingqiao Cooperative, which can provide the most abundant information on the institutional innovation of “Agricultural Co-Operation System”, are selected as research samples. Among all the cooperatives, Yangliu Cooperative is the first one in Chongzhou, the birthplace of the “Agricultural Co-Operation System”. Peasants join the cooperatives by contributing the land operation rights. The governance structure of cooperatives includes the Executive Board, the Supervisory Board and the agriculture CEOs. Therefore, the peasants, members of the Executive Board, members of the Supervisory Board and agriculture CEOs are the research samples in this study. Based on North’s institutional change theory, the government is an important provider of institutional supply. Therefore, government officials are also important research samples.

Based on the above, five types of samples are selected, including government officials, agriculture CEOs, members of the Executive Board, members of the Supervisory Board, and

peasants joining the cooperatives, which are labeled A, B, C, D, and E in turn. Multiple persons of the same sample type are coded sequentially, such as A1, A2. Considering research ethics, in the research samples, except that the top leader of the local government is kept in his last name, all the other are kept in their full names. The classification and labeling of the research samples are shown in Table 4.1.

Table 4.1 Research samples and markings

Labeling	Sample type	Sample number
A	government officials	A1: Mr. Zhao (the highest official of the local government of Chongzhou) A2: Luo Wei (a grassroots cadre in rural town)
B	agriculture CEOs from Land Shareholding Cooperatives (LSCs)	B1: Zhou Weisong (Yangliu Cooperative) B2: Wang Zhiquan (Yangliu Cooperative) B3: Wang Lingli (Yangliu Cooperative) B4: Ren Jianzhong (Qingqiao Cooperative)
C	Members of the Executive Board from LSCs	C1: Wang Zhiming (Yangliu Cooperative) C2: Zhang Yufen (Qingqiao Cooperative)
D	members of the Supervisory Board from LSCs	D1: Xiong Wenhua (Qingqiao Cooperative) D2: Fu Zhongqun (Qingqiao Cooperative) D3: Yi Zhiqun (Qingqiao Cooperative) D4: Zhang Yufen (Qingqiao Cooperative) Note: there was only one member in the Supervisory Board of Yangliu Cooperative, who served as the director of the board. The director passed away in 2020 and no new member has been added to the board since. Therefore, there were no members from Yangliu cooperative in the interview with members of the Supervisory Board.
E	Peasant representatives from LSCs	E1: Ning Xingchi (Yangliu Cooperative) E2: Dai Lanying (Yangliu Cooperative) E3: Li Kaixue (Yangliu Cooperative) E4: Tang Bi (Yangliu Cooperative) E5: Cheng Xueru (Yangliu Cooperative) E6: Wu Zhizhong (Yangliu Cooperative) E7: Yang Jianshu (Qingqiao Cooperative) E8: Sun Lijun (Qingqiao Cooperative) E9: Ye Huixiang (Qingqiao Cooperative) E10: Guo Qiongqi (Qingqiao Cooperative) E11: Wang Lingli (Qingqiao Cooperative) E12: Zhang Yufen (Qingqiao Cooperative)

In a grounded spirit and following the research path of “close proximity to the context-discovering problems-finding cases-obtaining data-preliminary theory building-comparing literature-generating theory”, this study conducted field research under the research principles of “constant comparison” and “theoretical sampling”. Due to the qualitative research characteristics of grounded theory, in order to avoid research bias and maintain an objective and neutral research perspective, a 6-person research group composed of 2 university teachers,

1 doctoral student and 3 master students was established. A 2-year field research was carried out from March 2019 to March 2021.

In-depth interviews were conducted with government officials, agriculture CEOs, members of the Executive Board, members of the Supervisory Board and peasant representatives, in total 24 of them. See Table 4.1 for details. To meet the COVID-19 epidemic containment protocol, a part of the scheduled field research was transferred to online video conference via Feishu online platform. For the outline of in-depth interview, please refer to Annex B. Table 4.1 summarizes the information of individual in-depth interviews and group interviews.

In order to restore all details as many as possible and let the interviewees freely tell their real thoughts in a natural state, the interviews were mainly conducted by free chat. Interviews with the peasants were conducted in comfortable environments which the peasants are very familiar with and can adapt to freely, such as grain drying centers, or fields. Although there were interview outlines, there were no forced intervention. At least four researchers were present in each interview. In 2020 and 2021, due to the COVID-19 epidemic prevention and control, scheduled field work was postponed. Most of the data was collected directly face-to-face and recorded by Lark Minutes. The interviewer also recorded the interviewees’ expressions, actions, voice and other reactions to analyze the non-text information. During the COVID epidemic, part of the planned field research was transferred to Feishu online video conference. Once the field research conditions are met, the field research will be resumed immediately to supplement or correct the doubtful data. Lark Minutes stores a total of 136,000 words of interview records, which provides a solid data basis for the grounded analysis. Table 4.2 summarizes the information of individual in-depth interviews and group interviews.

Table 4.2 Summary of in-depth interview information

Sample number	Sample type	Time & place
A1: Mr. Zhao	Government official: the then mayor and party secretary of Chongzhou, the highest leader of Chongzhou local government	First interview · Time: 03/16/2018 · Duration: 2 hours and 45 minutes · Method: Offline in-depth interview · Location: School of Economics and Operation, University of Electronic Science and Technology of China Second interview · Time: 06/09/2018 · Duration: 2 hours and 10 minutes · Method: offline in-depth interview · Location: Longxing Town, Chongzhou Third interview · Time: 03/13/2021 · Duration: 3 hours and 20 minutes · Method: Offline in-depth interview

		· Location: Longxing Town, Chongzhou
A2: Luo Wei	Government official • the then secretary of the Party Committee of Longxing Town, Chongzhou, a rural grassroot cadre in Chongzhou	First interview · Time: 03/16/2018 · Duration: 2 hours and 10 minutes · Method: Offline in-depth interview · Location: School of Economics and Operation, University of Electronic Science and Technology of China Second interview · Time: 01/24/2021 · Duration: 2 hours and 30 minutes · Method: Online in-depth interview · Online platform: Feishu video conference
B1: Zhou Weisong	Agriculture CEO • Chongzhou Yangliu Land Shareholding Cooperative	First interview · Time: 01/28/2021 · Duration: 3 hours and 35 minutes · Method: Online in-depth interview · Online platform: Feishu video conference Second interview · Time: 03/13/2021 · Duration: 40 minutes · Method: Offline in-depth interview · Location: Operation Committee of Chongzhou Urban Agriculture Industry Functional Zone, Chengdu
B2: Wang Zhiquan	Agriculture CEO • Chongzhou Yangliu Land Shareholding Cooperative	First interview · Time: 03/05/2020 · Duration: 40 minutes · Method: Online in-depth interview · Online platform: Feishu video conference Second interview · Time: 03/13/2021 · Duration: 30 minutes · Method: Offline in-depth interview · Location: Chongzhou Yangliu Land Shareholding Cooperative, Drying Center
B3: Wang Lingli	Agriculture CEO • Chongzhou Yangliu Land Shareholding Cooperative	First interview · Time: 03/05/2020 · Duration: 2 hours · Method: Online in-depth interview · Online platform: Feishu video conference Second interview · Time: 03/13/2021 · Duration: 40 minutes · Method: Offline in-depth interview

		· Location: Chongzhou Yangliu Land Shareholding Cooperative, Drying Center
B4: Ren Jianzhong	Agriculture CEO • Chongzhou Qingqiao Land Shareholding Cooperative	First interview · Time: 03/08/2020 · Duration: 2 hours and 30 minutes · Method: Online in-depth interview · Online platform: Feishu video conference Second interview · Time: 03/13/2021 · Duration: 45 minutes · Method: Offline in-depth interview · Location: Chongzhou Qingqiao Land Shareholding Cooperative, Seedling Raising Center
C1: Wang Zhiming	the Executive Board • Chongzhou Yangliu Land Shareholding Cooperative, director	· Time: 03//14/2021 · Duration: 40 minutes · Method: Offline interview · Location: Chongzhou Yangliu Land Shareholding Cooperative, Grain and Oil Drying and Storage Center
C2: Zhang Yufen	the Executive Board • Chongzhou Qingqiao Land Shareholding Cooperative,a board member	· Time: 03//14/2021 · Duration: 30 minutes · Method: Offline interview · Location: Chongzhou Qingqiao Land Shareholding Cooperative, E-commerce Center
D1: Xiong Wenhua D2: Fu Zhongqun D3: Yi Zhiqun	the Supervisory Board • Chongzhou Qingqiao Land Shareholding Cooperative, a board member	· Time: 03//14/2021 · Duration: 3 hours and 30 minutes · Method: Offline interview · Location: Chongzhou Qingqiao Land Shareholding Cooperative, E-commerce Center
E1: Ningxingchi E2: Dai Lanying E3: Li Kaixue E4: Tang Bi E5: Cheng Xueru E6: Wu Zhizhong	Peasants in the cooperative • Chongzhou Yangliu Land Shareholding Cooperative	· Time: 03//14/2021 · Duration: 2 hours · Method: Offline group interview · Location: Chongzhou Yangliu Land Cooperative, Grain and Oil Drying and Storage Center
E7: Yang Jianshu E8: Sun Lijun E9: Ye Huixiang E10: Guo Qiongqi E11: Wang Lingli E12: Zhang Yufen	Peasants in the cooperative • Chongzhou Qingqiao Land Shareholding Cooperative	· Time: 03//14/2021 · Duration: 2 hours · Method: Offline interview · Location: Chongzhou Qingqiao Land Shareholding Cooperative, E-commerce Center

The two-year research is an iterative process where researchers analyze and collect data simultaneously. Data collection and analysis continue until no new concepts, categories, or ideas are generated. That is to say, when theory saturation is reached, then the process of theory

development starts.

The field research of this study includes multiple rounds of individual in-depth interviews, group interviews, field participation and observation. To meet the research needs, the research team attended the “Chongzhou Rural Land Shareholding Cooperative Work Conference 2019” held in Chongzhou in March 2019. Participants included Chongzhou local government officials, cadres of the Agricultural Development Bureau, township cadres, and socialized service company representatives, as well as 48 agriculture CEOs, 22 executive board members and 15 supervisory board members from 50 rural land shareholding cooperatives in the city of Chongzhou, and hundreds of peasant representatives. During the conference, 2,200 questionnaires on rural land shareholding cooperatives were distributed, of which 1,403 valid questionnaires were collected.

4.1.2 Sample analysis

4.1.2.1 Government officials

Mr. Zhao, the then top leader of the local government of Chongzhou and secretary of the Chongzhou Municipal Party Committee, and Luo Wei, the then party secretary of Longxing Town, where the first rural land shareholding cooperative in Chongzhou was established, are selected as interviewees of in-depth interviews. Please refer to Annex C for details of appointments.

As the top leader of Chongzhou at that time, Mr. Zhao led the innovative practice of the rural land operation system in Chongzhou and provided institutional supply for the promotion of this practice. Under his leadership, the Chongzhou Municipal Party Committee and the Municipal Government issued a number of supporting policies to assist and encourage innovative practices in rural land operation through multiple channels; the experience accumulated are proved to be successful in practice and widely promoted to other places. While implementing innovative practices, Mr. Zhao also actively engaged with the theoretical and academic circles, seeking theoretical support, and discussing the theoretical explanation and theoretical construction of the institutional innovation of the modern agricultural operation system.

The innovative practice of the modern operation system of the Chongzhou Rural Land Cooperative has drawn attention and gained approval by the Ministry of Agriculture, a department of the State Council in charge of agriculture and rural economic development in China. After the theoretical summary and optimization, the original case of the “Agricultural

Co-Operation System” was written into the “No. 1 central document”, which became a national policy to deepen the reform of the rural economic system, consolidate and improve the basic rural operation system.

Mr. Zhao has played an extremely important role in the institutional changes and formation of the “Agricultural Co-Operation System”. As the main experiencer, promoter and witness of the “Agricultural Co-Operation System” institutional innovation, he provides abundant information of institutional innovation from the perspective of the government for this study.

62 sentences are coded from the interview with Mr. Zhao, the coding number is from A1-001to A1-062. For the original interview and its serial number, please refer to Annex D.

Chongzhou rural grassroots cadre: Luo Wei

Luo Wei was transferred to Chongzhou in 2011 and successively worked in Chongzhou Government Office, Municipal Party Committee Office, and Longxing Township. From 2015 to 2019, he served as the party secretary of Longxing Town, Chongzhou City, where the Yangliu Cooperative, the first land shareholding cooperative in Chongzhou, is located. Please refer to Annex D for details of appointments.

43 sentences are coded from the interview with Luo Wei, the coding number is from A2-001to A2-043. For the original interview and its serial number, please refer to Annex E.

4.1.2.2 Agriculture CEOs

Based on the primary data obtained from in-depth interviews and the secondary data obtained through websites, media reports and other public channels, the basic information of the four agriculture CEOs is sorted out in the time sequence as follows:

(1) B1: Zhou Weisong

Born in 1981, a native of Chongzhou, Chengdu; the first agriculture CEO in Chongzhou, the “pioneering ox” of the “Agricultural Co-Operation System”, and the first mover. His personal information is shown in Annex C.

125 sentences are coded from the interview with Zhou Weisong, the coding number is from B1-001to B1-125. For the original interview and its serial number, please refer to Annex E.

(2) B2: Wang Zhiquan

Wang Zhiquan served as the agricultural CEO of the Yangliu, Shima and Zhiquan cooperatives in Chongzhou, and the second agricultural CEO of the Yangliu cooperative after Zhou Weisong, his personal information is shown in Annex C.

33 sentences are coded from the interview with Wang Zhiquan, the coding number is from B2-001to B2-033. For the original interview and its serial number, please refer to Annex E.

(3) B3: Wang Lingli

Wang Zhiquan’s daughter, co-CEO of Yangliu Land Shareholding Cooperative, her personal information is shown in Annex C.

31 sentences are coded from the interview with Wang Lingli, the coding number is from B3-001to B3-031. For the original interview and its serial number, please refer to Annex E.

(4) B4: Ren Jianzhong

Agriculture CEO of Qingqiao Land Shareholding Cooperative, his personal information is shown in Annex C.

37 sentences are coded from the interview with Ren Jianzhong, the coding number is from B4-001to B4-037. For the original interview and its serial number, please refer to Annex E.

4.1.2.3 The Executive Board

Two board members were interviewed for this study, namely:

C1: Wang Zhiming, the director of the Executive Board of Chongzhou Yangliu Land Shareholding Cooperative, the brother of Wang Zhiquan.

C2: Zhang Yufen, member of the Executive Board of Chongzhou Yangliu Land Shareholding Cooperative.

11 sentences are coded from the interview with the Executive Board members, the coding number is from C-001to C-011. For the original interview and its serial number, please refer to Annex E.

4.1.2.4 The Supervisory Board

From the two land shareholding cooperatives Yangliu and Qingqiao researched in this study, there is only one member serving as the director of the Supervisory Board in Yangliu cooperative. After the death of the director in 2020, there was no by-election. Therefore, this interview does not include the members of the Yangliu Supervisory Board, and just an offline group interview with four members of the Supervisory Board of the Qingqiao Cooperative was conducted:

D1: Xiong Wenhua, director of the Supervisory Board of Qingqiao Land Shareholding Cooperative

D2: Fu Zhongqun, member of the Supervisory Board of Qingqiao Land Shareholding Cooperative

D3: Yi Zhiqun, member of the Supervisory Board of Qingqiao Land Shareholding Cooperative

D4: Zhang Yufen, member of the Supervisory Board of Qingqiao Land Shareholding

Cooperative

10 sentences are coded from the interview with the Supervisory Board members, the coding number is from D-001to D-010. For the original interview and its serial number, please refer to Annex E.

4.1.2.5 Member representatives of peasant households

Through offline group interview, the research team has interviewed a total of 12 representatives from Qingqiao and Yangliu, the two land shareholding cooperatives in Chongzhou. The main content of the interviews was the satisfaction survey on the work of the Executive Board, the Supervisory Board and the agriculture CEOs of the cooperatives and the economic performance brought by land shareholding cooperatives to peasants who have joined the cooperative.

E1: Ning Xingchi, member representative of Yangliu Land Shareholding Cooperative

E2: Dai Lanying, member representative of Yangliu Land Shareholding Cooperative

E3: Li Kaixue, member representative of Yangliu Land Shareholding Cooperative

E4: Tang Bi, member representative of Yangliu Land Shareholding Cooperative

E5: Cheng Xueru, member representative of Yangliu Land Shareholding Cooperative

E6: Wu Zhizhong, member representative of Yangliu Land Shareholding Cooperative

E7: Yang Jianshu, member representative of Qingqiao Land Shareholding Cooperative

E8: Sun Lijun, member representative of Qingqiao Land Shareholding Cooperative

E9: Ye Huixiang, member representative of Qingqiao Land Shareholding Cooperative

E10: Guo Qiongqi, member representative of Qingqiao Land Shareholding Cooperative

9 sentences are coded from the interview with the representatives of the cooperative members, the coding number is from E-001to E-009. The original interview excerpts and coding numbers are shown in Annex D. For the original interview and its serial number, please refer to Annex D.

4.2 Grounded analysis process: coding

The process of grounded theory research is also the process of developing research questions. With the continuous interaction with the information and data collected, the research questions become more and more clear. The emergence of research questions follows the basic idea of grounded theory, which starts by analyzing the data through open coding, axial coding, and selective or focused coding, summarizing the data to form concepts, establishing connections

between concepts, forming categories, and then core categories, and finally establishing relationships to build theories.

4.2.1 Open coding

The open coding process of this study is carried out strictly according to the steps described in Chapter 3.3.5.1. In order to avoid the personal bias of the researcher, open coding of the interview data is conducted at its original state. The compilation of the original interview data is carried out by 6 researchers independently. When there is an inconsistency in coding, the research group will discuss and determine the final coding and conduct a consistency check to ensure the credibility and consistency of the conclusion.

After conducting multiple rounds of integrated analysis on in-depth interview data, we have extracted 739 concepts and 137categories, details are shown in Annex D. The categories and the frequencies are as shown in Table 4.3.

Table 4.3 The categories and the frequencies

Category	Frequency	Category	Frequency	Category	Frequency
mechanism design	23	member bonus	3	risk prevention	2
socialized service system	18	agricultural brands	3	agriculture CEO ability	2
environmental change	16	agriculture CEO constraints	3	agriculture CEO power	2
intensive scale management	16	institutional basis	3	property design	2
cooperative operation management	13	risk-taking	3	natural environment changes	2
risk awareness	9	closed pilot	3	government policy design	2
government policy support	9	enhanced force from scholars	3	government policy constraints	2
government role	9	agricultural technology	3	modern agricultural development mode	2
institutional supply	8	benefit mechanism	3	operation transaction costs	2
socialized service system	8	risk assessment	3	agriculture CEO inheritance	2
modern agricultural service system	8	system promotion	3	agriculture CEO certificate	2
property rights system	8	risk and benefit	3	mechanized planting	2
agriculture CEO training	7	policy continuity	3	operation efficiency	2
trust mechanism	7	grassroots interests	3	agriculture CEO	2

central leadership inspection	7	innovation awareness	3	balance generation of supervisory director	2
policy planning	6	operation management	3	deposit (mortgage)	2
service system	6	supporting policies	3	constant innovation	2
grassroots participation	6	socialized service	3	satisfaction rate	2
revenue-sharing mechanism	6	risk aversion	3	younger generation of agriculture CEOs	2
agricultural efficiency	6	system implementation	3	benefit-sharing mechanism	2
grassroots participation	6	government concern	3	agricultural industry chain	2
implementation effect	6	intensive scale production	3	corporate governance	2
government policy	5	standards and constraints	3	grassroots satisfaction	2
operation mechanism	5	scholar investigation and research	3	peasants’ income increase	2
risk awareness	5	agriculture CEO quality	3	policy planning	2
strategic thinking	4	collective decision-making	3	institutional entrepreneur	2
grassroots practice	4	multi-agent exploration and innovation	3	political risk	2
government responsibility	4	top-down coercion	3	bold innovation	2
nationwide promotion	4	government subsidies	3	agriculture CEO needs	2
scholar participation	4	financial policy support	3	industrial and commercial registration	2
“No.1 central document”	4	transparent and open mechanism	3	new problem emergence	2
agriculture CEO market	4	Operation process	3	innovation expansion	2
land shareholding cooperative	4	cooperative governance mechanism	3	theory promotion	2
agriculture CEO generation	4	governance structure	3	institutionalization of innovation	2
agriculture CEO incentive	4	diversified operation	3	social environment changes	2
government support	4	diversified income structure	3	national proposition	1
performance evaluation	4	social effect	3	community with a shared future	1
forced reform	4	innovation recognition	3	agricultural modernization	1
national policy	4	risk sharing	3	industry chain	1

confirmation of operation rights and issuance of certificates	4	agricultural finance innovation	3	traditional concept transition	1
central leadership attention	4	financial support	3	innovative prototype	1
community of shared interests	4	base construction	3	driving effect	1
grassroots policy support	4	grassroots government policy	3	agricultural characteristics	1
bottom-up inducement	4	agricultural land use	3	leading enterprises	1
reform risk	4	government awareness	2	peasant retention	1
operation performance	4	social governance	2		

4.2.2 Axial coding

The axial coding of this study is strictly carried out as described in Chapter 3 3.5.2. By following the three dimensions of “conditions/causes → action/interaction strategies → consequences”, it identifies the logical relationship between the categories through constant comparison of the data, then summarizes seven new categories reflecting these logical relationships, namely, the environment of institutional innovation, the promoter/driving force of institutional innovation, the property rights foundation of institutional innovation, the supply and demand of institutional innovation, types of institutional innovation, the process of institutional innovation, the achievements and economic performance of institutional innovation. These seven new categories with a higher level of generalization and a higher degree of abstraction are the overarching categories of the grounded research in this study. The previous categories are called subsidiary categories, playing a logically supporting role in the research. The axial coding process and its results are shown in Table 4.4.

Table 4.4 The process of axial coding and generation of overarching category

Sub-category: the categories extracted from the interview data Paradigm model analysis: identifying the logical relationship among categories			Supporting category	Overarching category
Condition/cause	Action/interaction strategy	Results		
Social environment change; Lifestyle change; Operation mechanism innovation;	Constant innovation; Mechanism design; Corporate governance lessons; Grassroots participation	Constant practice and improvement; Rural land operation mechanism; Local government support; Agriculture CEO mechanism;	Institutional innovation environment	Institutional innovation environment

Environmental inclusiveness; Financial support; Academic research environment; Technical environment		Social perception changes; Rural financial services; Academic seminar atmosphere; Social service supplement; Agricultural technology and agricultural machinery promotion		
Rural grassroots cadres; Local government; Ministry of Agriculture; Central government Scholars, researchers; Agriculture CEO; Peasant household	Government attention Policy planning; Strategic thinking; Scholar responsibility; Academic status; Policy influence; Selection, training, incentive and supervision of agriculture CEO Support of the peasants	Government policies at all levels; Academic theoretical achievements; Central Document No. 1; Generation and market of agriculture CEO Increase peasants' revenue; Agricultural efficiency	Institutional innovation promoter	
Government risk; Operation risk; Agricultural special attributes; Political risk; Land circulation; Property rights design	Risk awareness; Risk assessment; Risk aversion; Risk control; Risk bearing	Compliance operation; Policy assessment; Agricultural insurance; Field planting; Food security; Risk aversion and control	Institutional innovation risk	Institutional innovation promoter/ driving force
Grassroots participation; Party building leadership; Vice premier inspection; Academic seminars; Theory refinement by scholars	Grassroots participation; Policy transformation; High-level government acquiescence; Scholars' research and academic empowerment	Policy design and support; Top-down promotion; Bottom-up practice; Theory formation; Interaction and regulation	Driving force of institutional innovation	
Land rights confirmation; Land circulation; Property rights design;	Confirmation and certification of operation right; Industrial and commercial registration reform;	Separation of ownership, contractual right, and operation right; Land shareholding cooperative	Property rights foundation of institutional innovation	Property rights foundation of institution

Property rights foundation	Operation right priced into shares			al innovation
Grassroots exploration and practice; Practice amendment; Grassroots government support; Academic empowerment	Central leadership attention; Central Document No. 1; National extension	Induced institutional change: bottom up; Imposed institutional change: top down	Institutional innovation types	Institutional innovation types
Problem emergence; Exploration and practice	Production plan; Quality improvement and coverage expansion; Academic participation	Theory generation; Central approval; System documents; National extension	Institutional innovation process	Institutional innovation process
Company operation failure; Land abandoned; Scattered land, fragmented and dispersed capital, shortage of services;	Forced reform; Large-scale operation; Innovate operation mode	Rural land shareholding cooperatives; Agriculture CEO; Socialized service	Institutional innovation demand	
High transaction cost of the original operation mode Agriculture CEO professional operation; Financial policy; Farming technology and mechanized planting; Government incentives and supporting measures	Institutional innovation awareness; Incremental reform practice; Policy design; Theory generation; System recognition; System generalization	Generation of “Agricultural Co-Operation System”; Quality improvement and national extension; No.1central document	Institutional innovation supply	Demand and supply of institutional innovation
Grassroots vitality; Risk awareness and control; Land rights confirmation and certification; Experience accumulated from company	Innovative exploration at the grassroots level; Government policy support; Significant performance in scale operations; Academic research and supplement	Closed pilot; Base construction; National extension; “1+4” Modern Agricultural Development Mode	Formation mode of land shareholding cooperatives	Formation mode

operation failure New problems emergence; Practice exploration and innovation; Signaling mechanism; Internal transaction costs	Planting expert; Social capital; Agricultural technology expert; Agricultural services supermarket; Market operation	Land shareholding cooperatives; agriculture CEO; social service system	Operation mechanism of land shareholding cooperatives	Operation mechanism
Land rights confirmation; Land appraised as capital stock; Interest linkage; Grassroots participation; Open and transparent	Co-construction, co-operation, sharing, and win-win; Operation decisions; Production operation; comprehensive service; Revenue sharing	Peasant household members; agriculture CEO; the supervisory board; the executive board	Governance structure of land shareholding cooperatives	Governance structure
Large-scale operation; Mechanized planting; Socialized services; Revenue distribution sharing; Government subsidies	Public fund retention; Dividend distribution from the cooperative; Property revenue of household members; Revenue from migrant worker jobs; Revenue from cooperative jobs	Agricultural efficiency; peasant revenue increase	Economic performance of institutional innovation	Economic performance

4.2.3 Selective coding

Selective coding is conducted after completing open coding and axial coding. It uses storylines to analyze the internal logical relationship between overarching categories, then extracts a core category from overarching categories, and organize theories around this core category. Following the selective coding process described in Chapter 3.3.5.3, through the constant interaction of literature review and data processing, this research digs into the essential connotation of the overarching categories, and extracts the core category, institutional innovation, that can coordinate and integrate the ten overarching categories of “innovation environment, innovation promoter, property rights foundation, supply and demand of innovation, types of innovation, formation mode, operation mechanism, governance structure, economic structure and innovation precess”. The selective coding process of this study is shown in Figure 4.1.

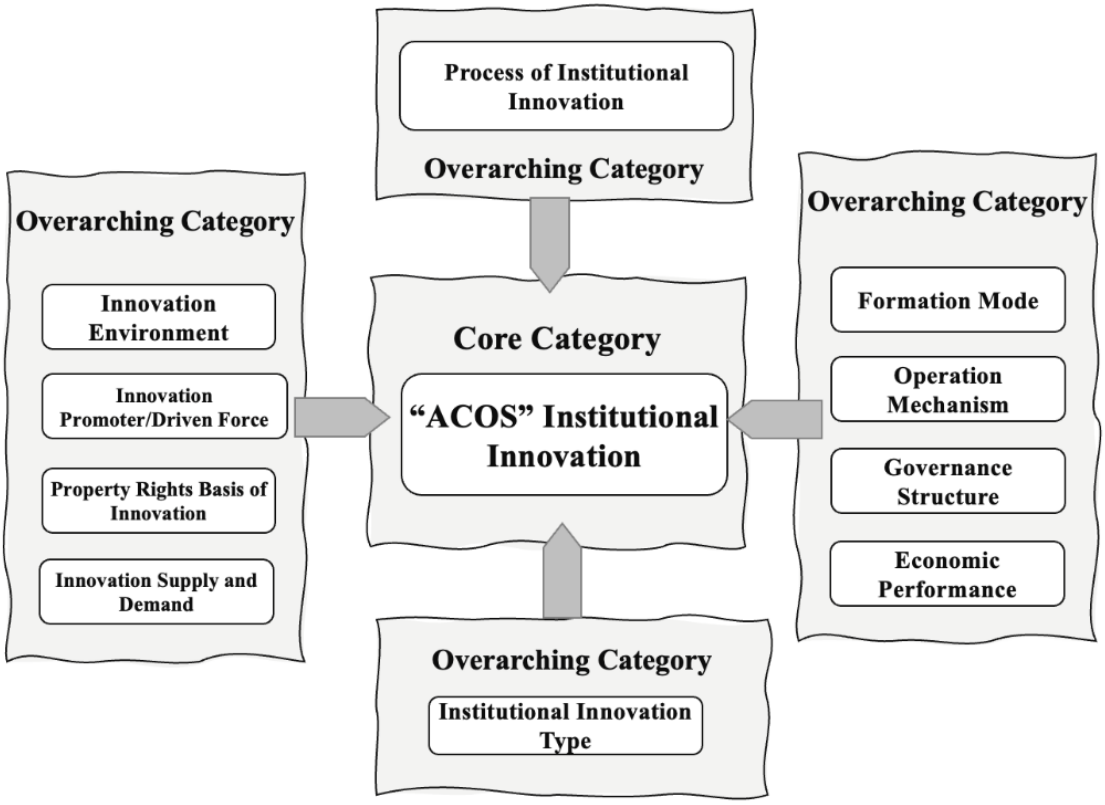

Figure 4.1 The selective coding process

Through grounded analysis, the process of agricultural co-operation institutional innovation can be achieved through the following six steps. The theoretical analysis process is as follows:

The first step: the formation of the “first action group”. This refers to a decision-making group that dominates the institutional innovation process in decision-making. It foresees the existence of potential profits and realizes that as long as institutional innovation is conducted, potential profits can be obtained.

The second step: the “first action group” proposes the institutional innovation plan.

The third step: the “first action group” selects over several institutional innovations with a positive net profit after realization under the criterion of the principle of maximum profit.

The fourth step: the formation of the “second action group”. This is the decision-making group established to help the “first action group” receive the expected net income in the process of institutional innovation.

The fifth step: the “first action group” and the “second action group” work together to make institutional innovations possible.

The sixth step: the emergence of institutional equilibrium.

4.3 Theoretical saturation test

The theoretical saturation test is the judgment for whether to return to the data collection or stop sampling. Theory saturation occurs when additional interviews or new data collected cannot generate new concepts or induce new categories within the research scope, and the categories cannot obtain new attributes. In short, when new data no longer produce new theoretical insights, the theory reaches saturation.

In this study, the original data of 24 in-depth interviews including government officials, agriculture CEOs, members of the Executive Board and the Supervisory Board, and representatives of peasant households are used for theoretical saturation testing. The results show that the coding results of the newly added samples do not emerge new concepts and new categories, and there is no new relationship between categories. Therefore, the coding results obtained in the aforementioned research passed the theoretical saturation test. That means the category coding results and institutional innovation obtained from the grounded theory research reache theoretical saturation.

4.4 Theoretical model constructing

After the process of open coding, axial coding and selective coding, when the theoretical saturation test is passed, all the concepts or categories formed in the above coding process are organized to develop the theory, thus to build the theoretical model as shown in Figure 4.2.

In this theoretical model, there are 15 groups of supporting categories. By following the three dimensions of “condition/cause→action/interaction strategy→result”, and on the basis of cyclic comparison of the case data, we identify the logical relationship between these supporting categories, and summarize 10 overarching categories as shown in Figure 4.2 that reflect the logical relationships, which are: innovation environment, innovation promoters/driving force, property rights foundation of innovation, innovation supply and demand, innovation process, innovation types, formation mode, operation mechanism, governance structure, and economic performance.

By analyzing the internal logical relationship between the 10 overarching categories in the story line, this study determines the core category, the institutional innovation of the “Agricultural Co-Operation System”. As shown in Figure 4.2, the core category occupies the central position of all categories, and is more concentrated than other categories. It has a meaning and logical connection with other categories, and is easier to develop into a more

generalized formal theory than other categories.

According to Figure 4.2, the construction of the theoretical model of this research is gradually obtained according to the coding process of the grounded theory. First, an overall description of the research phenomenon is given to provide a story line of theoretical clues that lead to the core category, the institutional innovation of the “Agricultural Co-Operation System”. Then, 15 supporting categories are determined and the 10 overarching categories are generated according to the logical relationship. After that, based on the analysis of the logical relationship between overarching categories and core categories, the theory is developed by following the route of “A (condition) → B (phenomenon) → C (environment)) → D (actions/interactions and corresponding strategies) → E (consequences)”.

We will conduct a detailed theoretical analysis of the theoretical model in chapter 5 to have a dialogue with the existing literature based on grounded theoretical analysis.

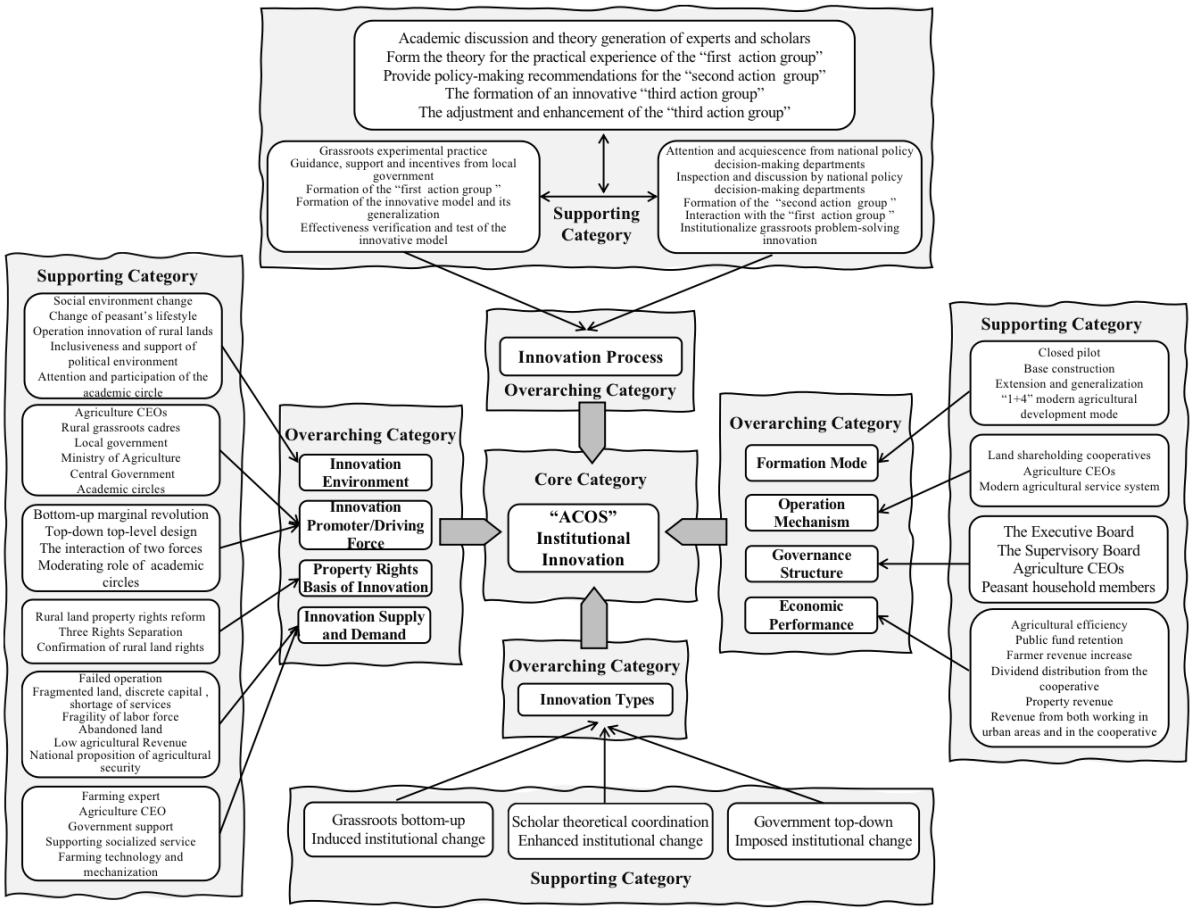

Figure 4.2 The theoretical model constructed based on the grounded theory research

Note: ACOS refers to Agricultural Co-operation Syste

Chapter 5: Grounded Theory Analysis

5.1 Property rights foundation for institutional innovation

Clear definition of property rights is one of the most important factors affecting economic efficiency (Alchian & Demsetz, 1972). Property rights provide incentives for “internalizing” the externalities of economic activities, thus reducing transaction costs and improving economic efficiency. This study follows the research on the essential attributes of property rights in existing literature. Based on the four major functions of property rights: incentive, constrain, resource allocation and distribution, it focuses on the property rights of the rural land in China and the agricultural land operation system under the specific rights bundle arrangement. The separation of three rights of China’s rural land property rights provides the property rights foundation for the innovation of Chongzhou’s “Agricultural Co-Operation System”. The fundamental role of land property rights is reflected in the in-depth interview. The following is the original interview with Mr. Zhao, the top leader of Chongzhou local government, and Luo Wei, a rural grassroots cadre:

Mr. Zhao: *“Without the reform of the land property rights system, there will be no land shareholding cooperatives. Land ownership is a prerequisite concept... It is with the confirmation of land rights that the operation right is derived on the basis of ownership and contractual right.”*

Mr. Zhao: *“At that time I was in the Chengdu Coordinating Committee working on system design..... there is a timing in the establishment of the land shareholding cooperative in Chongzhou, because Chengdu took the lead in land ownership confirmation in 2007 and 2008. The confirmation of rural land rights is an essential move, and the foundation of all these reforms is that there must be a reform of the rural property rights system. Property rights should be clearly attributed, and rights and responsibilities should be clear. To protect the strict modern rural property rights system, it is necessary to construct clear-cut property rights and institutionalize them. The secretary of the village branch does not understand what property rights were, neither do the common people. You just tell him, ‘Nothing will prosper without clear property rights’, they will understand immediately. He is the one who is guarding the rural land. If he does not understand, he is keeping his golden rice bowls while begging for a*

living at the same time. This is the first aspect. Second, before the (Chongzhou) system, I was in Dujiangyan City to pilot the rural property rights system. The first pilot village was called Heming Village, which was the first in the country. It was about property rights. Property rights reform was the foundation. The subsequent reforms are all based on this logic, and its logical premise is the rural property rights system."

Luo Wei: *"Since it is called the land shareholding cooperative, in this scenario, the rural land will be used as shares. Land shares, take the land with a price, who owns the land? This involves property rights."*

Mr. Zhao: *"Without the property rights reform, how can your shares cooperate? How will the land share in the land shareholding cooperative work? It can only be carried out if all kinds of rights, including the ownership, contractual and operation rights of the land, are clearly defined. This is the premise concept of the share. Our rural property rights transactions, the same place, the same right and the same price, all come from the reform of the property rights system. The property rights system is the foundation of all our systems. This is my understanding of the 'Agricultural Co-Operation System".*

Mr. Zhao: *"Chengdu took the lead in pilot land ownership confirmation nationwide in 2007 and 2008, taking rural land ownership confirmation as the major work.... The basis of its origin is that the rural property rights system must be reformed, and the attribution of this must be clear, and the rights and responsibilities must be clear."*

Mr. Zhao: *"In the previous land circulation, the masses felt themselves in a weak position. In today's cooperatives, the masses feel that their participation and their position in the cooperative have greatly improved compared to the previous circulation, the economic benefits have increased, and the degree of organization of the masses is also high."*

Luo Wei: *"Our current agricultural land system is collectively owned. It is collectively owned by production villagers' groups. The villagers' group consists of just a few hundred people, and the land property right is the property of hundreds of people. Naturally, peasants' sense of rights and interests is definitely much stronger. Then in the process, once he felt that his rights and interests was affected, his first reaction is to go to the government. They think that the government has the responsibility to safeguard the rights and interests of the agricultural land and collective construction land collectively owned by villagers' groups, so this is why the government gets deeply involved. The collective property rights of rural land are real, and it is different from the previous saying that 'everyone owns a state-owned enterprise, but in fact no one owns it.' There is no so-called 'absence of owners', because these hundreds of people do not vanish."*

Regarding the operation of land ownership confirmation and the practical operation of land withdrawal after becoming a shareholder in a cooperative, answers are given in the interview:

Luo Wei: *"This is a top-down system design, that is, the solidification of property rights, the stabilization of rural land contractual operation relations. The so-called contractual operation relationship is actually the clear location and area boundary of the land. If that land is remote, it will always be remote. That problem does exist. When Chengdu first promoted the reform of the property rights system, the issue of fairness was already taken into account. What to do? If your land is remote, then give you more areas, and let the area make up for the problem of geographical location."*

Luo Wei: *"What if you want to quit after becoming a shareholder in the cooperative? This is easy, 'freedom of voluntary withdrawal from the cooperative', which can be done at any time. If you want to drop out, we don't ask why, only how to do it. When signing the contract for joining the cooperative, we agreed that we had already started the arrangement of the fields. The previous ridges had been scattered. Your part of the land was not easy to be singled from the plate. We would tell you at that time that we could not give you back the land you used to have. We can recognize what is on the title certificate, that is, you will always have the same amount of land in the future. But when you finally want to quit (out of the cooperative), we will replace you with the same area and quality of land, and you will take it back to farming. We agreed that I would give you the same area of land and plant it yourself. As long as this matter is resolved, you can retreat at your own will, no strings attached."*

Luo Wei: *"Another problem I want to talk about is that under the condition of land ownership certification, we are now gradually exploring and consciously blurring the boundary of this kind of land setting and turning it into a number. Even after the cooperation of land shares, as long as his land joins the land shareholding cooperative, he will consciously blur the scope of the setting, let it become how many mu and weaken the location. Your land is a part of the operating area of the shareholding cooperative as an economy as a whole. Each household only owns a part of the area, but does not own a specific plot. Solidifying your land becomes solidifying your rights and interests. This is indeed a breakthrough of the past policy. We are indeed seriously solving this problem in practice, so that peasants can gradually recognize our method. The land is yours, your rights and interests will not be reduced, and there is no problem in finally ensuring that the land has the same status. This also has an advantage, once we want to build roads and repair facilities, anyway, peasants will only recognize the rights and interests corresponding to their land, as for the road repairment to occupy a few pieces of land, there is*

no need for them to come to me, the amount of money for compensation is settled by the area of the land anyway.”

Luo Wei: *“As for how many years peasants usually sign with land shareholding cooperatives, they can sign for three or five years. However, when signing the contract, the fundamental issue is that it must be guaranteed to be in tune with one thing, that is, not to exceed the period of each round of land contractual operation. If your current round of land contractual operation period is due, then it will not work.”*

Zhou Weisong: *“In order to get the land operation certificate of the Yangliu cooperative, all 31 peasants in one household signed their names, took photos, signed and loaned the money. According to the information prepared by the bank, every household’s right to contractual operation is written (mortgaged), and all peasants’ certificates of contractual operation are stamped and mortgaged.”*

Through the above interview, it can be seen that land concentration and agricultural labor transfer are two basic phenomena in the development process of agricultural scale operation, and both are related to land property rights system. It is the underlying property rights system of separation of three rights of rural land in China that enables peasants to transfer their own land property rights to create conditions for scale operation. In the Chongzhou case, peasants invested their lands after confirming rights in the cooperative, which led to the establishment of the land shareholding cooperative and the subsequent large-scale operation. The separation of three rights provides property rights foundation for the “Agricultural Co-Operation System” to innovate the system, activates the land operation right, creates conditions for large-scale operation and agricultural mechanization, and improves the allocation efficiency of rural land resources. In fact, the Chongzhou case proves that while ensuring the peasants’ controlling power, many agronomy activities in peasants’ production and operation can be separated. For example, rice seedling raising activities can be independent and provided by specialized seedling raising service organizations. Other production links such as soil preparation, seedling planting, pest control and harvesting can also be outsourced by specialized service organizations.

According to Coase (1937), the subdivision of property rights and the division of labor transactions formed by the entry of multiple subjects will increase transaction costs. Therefore, the activation of agricultural land operation right still depends on the improvement of transaction organization and transaction methods. Information asymmetry also widely exists in agricultural production activities. Compared with a single peasant household, specialized organizations have comparative advantages in information collection and processing.

Regarding the supervision cost of professional service organizations, although there is information asymmetry and it is difficult to assess outsourcing organizations, the asset specificity formed by professional services and the competition in the service market can effectively alleviate the supervision cost. At the same time, shareholders of the cooperative are peasants themselves, therefore supervision costs have been greatly reduced.

From the perspective of property rights analysis, this study finds that Chongzhou land shareholding cooperative has given a new interpretation to the property rights system of rural land collective ownership. The fundamental rural land system in China is collective ownership, and the cooperative established by land-equity cooperation has become a new-type collective. In this new-type collective, when peasants contribute the land after rights confirmation and join the cooperative as shareholders, each household can no longer clearly define which specific plot it owns, the land is “virtualized” as mentioned in the interview, what can be assured is the quantified rights and interests, a kind of income right. To some extent, this type of land shareholding cooperative in Chongzhou has replaced the previous organizational form of rural collectives and becomes a new collective method based on land operation and income. This new rural collective organization is no longer like the previous type of administrative organization, but an organization method based on land use and economic benefits. It is a “co-operation and win-win” method. Its advantage lies in creating conditions for large-scale operation and clearing up the obstacle of property rights division.

5.2 Environment for institutional innovation

With the changes in the rural economic and social environment, the following problems have emerged in the agricultural production of Chongzhou: first, with the advancement of urbanization and industrialization, the labor force has transferred from the primary sector to the secondary and tertiary sectors, and agricultural labors are mostly the old or middle-aged population like the elderly, women, resulting in a decline in agricultural capacity; second, the construction of agricultural infrastructure has stagnated after household production quotas, and agricultural technical services are difficult to reach households; third, it is hard to guarantee the quality of agricultural products through standardized production in the context of household operation; fourth, scale operation is hard to realize and production efficiency is low. As a result, the four constrains are intensifying. Agricultural development is facing the dilemmas of “who will farm”, “what kind of land to plant” and “how to farm”.

To solve the problems mentioned above, Chongzhou has undertaken many explorations.

From guiding large farming households to transfer the farmland in the early stage, to bringing in leading agricultural enterprises to farmland leasing, operation and contract farming, and encouraging land cooperatives to operate independently, many attempts have not achieved the expected results. Especially in 2009, after Ying Malong Company’s breakage of the leasing contract of more than 3,000 mu (200 hectares) of farmland in Qiquan Town, peasants were unwilling to take the land back and instead asked the local government to assume responsibility, which caused certain social tension. In order to solve the dilemma, ease the concerns of peasants and maintain the stability of agricultural production and rural development, Chongzhou was forced to undertake an exploration.

5.2.1 Supply and demand of institutional innovation

Institutional economics holds that as an endogenous variable of economic development, institutions, like other goods, there is supply and demand. The process of institutional innovation is actually a process in which the supply and demand of institutions reach a balance in dynamic changes. The development of institutional innovation theory follows two clues: demand and supply. Institutional innovation is to obtain greater profits or save transaction costs. When marginal profits generated by the new system are equal to marginal costs incurred in the old system, institutional innovation will temporarily stop and the institutional structure will reach a certain “balance”. When the environment changes, or the operating cost of a certain system is far higher than its profits, or there is an opportunity to obtain greater profits at the same cost, the demand or supply opportunity for updating the system will rise.

5.2.1.1 Demand for institutional innovation

The grounded analysis in chapter 4 shows that the change of social environment, the change of peasants’ lifestyle, the innovation of rural land operation mode, the inclusiveness and support of political environment, and the attention and participation of academia together constitute the environment for the institutional innovation of the “Agricultural Co-Operation System”. According to new institutional economics, every institutional change takes place in a certain environment, and institutional change always originates from institutional demand.

Factors that lead to new institutional arrangements and institutional changes include: changes in factor price, technological improvements, the rise of human economic value in the process of economic development, changes in market size, and changes in legal order. Under an existing institutional arrangement, if production function is lower than production possibility boundary for long, and the actual revenue of relevant personnel is lower than the potential or

expected revenue in the long run, the lasting pressure of institutional demand will build up.

Reviewing China’s rural land system reform, under the property rights system arrangement of the single collectively owned rural land system, regardless of social costs and social profits, collective costs and collective profits, the huge difference between the micro peasants’ personal costs and profits causes the actual production function far smaller than the production possibility boundary. When the actual income level of peasants and the collective is lower than the expected level for a long time, the system demand is both frequent and strong.

The common practical problems faced by China’s agriculture, including land fragmentation, part-time operations of peasant households, fragility of labor force, agricultural sideline, non-grain production, low agricultural income, dispersed capital and shortage of services, all of these constitute an environment for institutional innovation, which is the source of demand for agricultural operation innovation in Chongzhou. Based on the grounded analysis in chapter 4, Chongzhou’s demand for institutional innovation also stems from the 2009 Ying Malong Company’s breach of contract and rent withdrawal.

Ying Malong Company joining the rural land circulation and participating in agricultural operation is a mode emerging in the process of exploring and practicing the innovation of agricultural operation modes in China. Adhering to the “Household Responsibility System”, modes including family farms, peasant cooperatives, “company + peasant household” and rural land trust have emerged in promoting the innovation of agricultural operation methods and accelerating the construction of a new agricultural operation system. Among them, the organization mode of “company + peasant household” was once considered as an effective choice to achieve a win-win situation for both enterprises and peasants (B. Luo, 2015). For enterprises, this mode alleviates the supply uncertainty faced by companies by stabilizing the product scale. For peasants, because of the stable market price, the market risks faced by peasants have been relieved, and the contradiction between small production of peasant households and large market demand has been addressed. The participation of enterprises in agriculture contributes to the coordinated development of urban and rural areas.

There are two forms of contracts in the agricultural operation organization of “company + peasant household”, which are factor contract and commodity contract. Under the two contract modes, both enterprises and peasants participate as independent economic entities. However, based on the economic rational analysis of participants’ interest preferences, there exist problems of incompatible interests and unstable cooperation between enterprises and peasant. Commodity contracts is a type of contracting mode. Enterprises sign contracts with peasants, and enterprises purchase agricultural products according to market prices. Data show that the

default rate of China's contracting agriculture is as high as 80% at one time (B. Luo, 2015). As a result, commodity contracts in contract farming face the problems of contract instability and default.

Under factor contract mode, the land operation right obtained by the enterprise is attached to the contractual right of peasants. The enterprise leases the land, that is, the land operation right, which is operated by the company, and the peasant obtains the land rent. From the peasant perspective of preference for maximizing self-interest, peasants often ask for a much higher rent from enterprises. Enterprises that have obtained the right to operate agricultural land and formed asset specificity in operation may also be threatened by peasants' opportunism ("rip-off"). Starting from the interest preference of the enterprise, if the enterprise is not well operated, it may break the contract, withdraw the rent or even run away, resulting in difficulties for peasants to collect the rent.

The above theoretical analysis is verified in the Ying Malong case. The Ying Malong incident is a typical failure case under the "company + peasant household" factor contract operation mode. When it comes to the reasons for the failure, Luo Wei's original words are as follows:

Luo Wei: "*(Ying Malong) There are several reasons for the failure. The enterprise has its own operation problem. There is another important and big problem lying behind. Often behind the high turnover price are some high-risk operation projects. The reason why he has a higher turnover price is that there are some operations it conducts behind, which may no longer be grain planting but cash crops. Then it is possible that the company is engaged in some so-called rural tourism, then I will say that there is a more serious problem involved behind this, what is it called? It is how to curb the problem of non-agricultural and non-grain farming. Because as long as it moves towards non-agricultural and non-grain farming, planting various cash crops has its own market risks, and may also break some policies and regulations on land use control. There are also some policy and regulatory risks behind this. Therefore, it is highly possible that Ying Malong will fail, and this is also the reason.*"

Luo Wei: *"To be honest, the control over land use was not too tight in those days, not as tight as it is now. At that time, those with bold moves might have broken through. However, there were some non-agricultural problems that had been investigated and dealt with at that time, while non-grain problems were hardly tackled at that time. Non-grain cash crops will face great market operation risks at that time. For example, the edible fungi cultivated, such as mushrooms, agaricus bisporus, strawberries, grapes and other things, will face market risks. When the year is good, all goes well. When the bad year comes, they may not be able to afford*

the rent, and at that period it is mainly market risk. But now, the control over land use is much stricter. First of all, non-agricultural transformation will definitely be corrected. Non-grain phenomenon will be guided by planning. For example, some places are major grain producing areas, so only grain can be grown, that is, from the government's policy guidance and planning guidance, but this is the case in recent years. At that time, it was a question of market risk, and for Ying Malong, it was more about market risk at that time."

When asked whether Ying Malong encountered peasants' breaking promises or "ripping off" in the course of its operation, Luo Wei's answers are:

Luo Wei: *"I think that peasants' dishonesty is more likely to be on the rent agreement. There may be two aspects. The first is the demand for land rent rise. When enterprises are making money, the rent will be asked to increase again and again. This possibility exists. The other is scale operation. Once the contract is signed, for example, and there is one plot of land in the middle, which is not included in the contact and does not become a whole operation unit. For example, the masses of various households circulate 1,000 mu of land, with dozens of mu scattered in the middle. In the whole plot of land some households would withdraw at their own wills regardless of the company's interests. That kind of behavior is actually a breach of promise, which will definitely bring great inconvenience to the operation of the company. I am not sure if this problem exists in the case of Ying Malong, but this problem often occurs in other cases of land circulation. That is to say, (the company) has transferred 1,000 mu of land, and then suddenly dozens of households with dozens of mu of land withdraw from the contract. But all the infrastructure planning and construction are based on the whole piece of land, and suddenly a few plots in the middle ask for withdrawal, it indeed is a great inconvenience for the operators."*

The impact and consequences brought to peasants and the local government after the Ying Malong case are described in Luo Wei's in-depth interview as follows:

Luo Wei: *"It was a very simple land transfer. The owner of a cannery in Ying Malong, he transferred hundreds or thousands of mu of land at that time. After the land was thrown away, he could not afford the rent, he ran away and left a mess. At that time, the peasants said, 'I do not want the land back now. Since the government encouraged us to transfer the land, you have to take care of it now. You cannot ignore us and then return the land to us so that we can plant it again.' The masses did not want the land back, saying that they are leaving for cities to find jobs. At the beginning, in order to facilitate the operation, the boundary between lands were erased. Now the property rights boundary of lands between peasant households is not very clear. Of course, this is only one of the reasons put forward by the masses. In a word, peasants still want (the land) to be circulated. They do not want to plant the land and do not want to have it*

back."

Luo Wei: *"But there was still an interest-driven reason why it was necessary to establish (cooperatives) because the price of peasants' land circulation was very high at that time. At that time, the transfer contract signed by Ying Malong had a high transfer price per mu of land, which made it impossible to transfer it to other business entities. Other social owners will not accept this price. That is the problem. Then there is the land shareholding cooperative, which actually means that peasants must be involved, so that they know what the true market value of these hundreds of acres of lands, not the value they wish to take."*

According to the "Rural Land Contract Law", the "farmland" attribute of agricultural land is not allowed to change by the land operator, nor can the operator desert or abandon farmlands. Relevant researches and studies have pointed out that there are few cases of grain production by enterprises entering the agriculture industry (S. Zhang, 2010). A survey of 267 villages in 31 provinces in 2014 showed that agricultural enterprises accounted for only 2.74% of all kinds of food production subjects. Of all agricultural enterprises, less than 25% are engaged in grain planting (B. Luo, 2015). Enterprises participating in agricultural land circulation and operation tend to use the farmland for purposes other than agriculture or grain production. Under the leasing mode, some large-scale leasing farms arbitrarily change the use of farmland in pursuit of maximizing economic interests, which brings hidden dangers to the national farmland protection and food security. Therefore, under the "company + peasant household" mode, the transaction cost and governance cost are high, and there is a risk that the function of agricultural land will change and the "abandonment" of agricultural land will run counter to the target of national food security. According to the accounts of Luo Wei and Zhou Weisong, Ying Malong also brought a great and possible political risk.

Luo Wei: *"After Ying Malong Company broke its contract and withdrew its lease, Ying Malong Company really did not want the land and ran away. If this matter was not solved by the local government at that time, it would be a failed land transfer, and then the matter would eventually become an incident that the masses were not satisfied with. Even more serious, it would bring hidden dangers to the protection of the country's farmland and food security."*

Luo Wei: *"This is Chinese characteristics! Peasants are not used to resort to law to find the other party of the circulation, Ying Malong Company. All they want is to come to the government, because first, at the time of land circulation, the government, after all, held a meeting to mobolize them, and then that is always the case, Chinese peasants will always come to the government when things go wrong. The first thing they think of is that even if they resort to law, they still want the government to help them with the law enforcement. This is our Chinese*

characteristics, right? Peasants' dependence on the government is much stronger."

Zhou Weisong: *"At that time, just imagine, the farmland in the Chengdu Plain was abandoned, it was not a trivial matter, it was a major political incident, it was a serious problem, so the government was forced to take actions."*

Luo Wei: *"Because it was actually a very serious problem at that time, that is, the land was abandoned with no one paying the rent. Then the masses were unwilling to take the land back and plant it. And the price was settled before and there was no possibility of retransferring, because the price they signed with the masses at that time was very high. Other companies were unwilling to take it. How to solve the problem? Then came the proposal of establishing a cooperative, all participate in the operation. In fact, the logic is very simple, why, it is to let peasants participate in the whole process of operation. When we transfer the land at a lower price, since peasants are involved in the process, they know how the market works, then they will accept, they will not feel that the government cannot solve the problem. To put it in a simple way, first, the starting point of that cooperation was a failed land circulation case and then it was left for the government to solve the problem. Second, what if the government fails? To get peasants involved is to ensure them participate in the whole process. It does not mean that the government is unwilling to solve the problem, nor does it mean that the government wants to take advantage of peasants. It is to tell them that when we do this, the final income from the circulation of that land can only be at this amount, which is equivalent to rent reduction. Generally speaking, there are two things, one is to ensure the land not abandoned; the second is to have a rent reduction."*

In an in-depth interview with Mr. Zhao, the top leader of the local government of Chongzhou, he says:

Mr. Zhao: *"Generally, the township government or the village party committee will endorse the 'company + peasant household' operation mode. Enterprises are not familiar with peasants. To rent land from peasants, they need an intermediary organization, which is the government. Peasants will blame the government by saying that when the enterprise first came, it was introduced by you (the government). Can it (the enterprise) just quit now? There are some legal issues in this case."*

Mr. Zhao: *"The peasants said, 'Ying Malong Company was endorsed by the government at the beginning. The government said it would carry out large-scale land operation, so you (the government) are still responsible. The enterprise quit and the (land) will be returned. We will not accept it. Whether you plant or not, I will collect the rent of 600 yuan (82.83 euros) per mu (1 mu=0.067 hectare), anyway, I will keep asking you for the rent of 600 yuan, that is it.'"*

Mr. Zhao: *"This kind of situation actually implies that peasants are realistic self-interest in the hope of ensuring income despite of droughts or floods. To some extent, their decisions are the most realistic and they are realistic egoists. If peasants do not accept it, [the land] can't be returned, and the government needs to solve the problem."*

In 2009, the failure of Ying Malong Company's "enterprise+ peasant household" operation mode in Chongzhou forced the rural grassroots and local governments in Chongzhou to carry out innovative practices in agricultural operation modes. In 2010, there was a bold innovative practice of Yangliu Land Shareholding Cooperative in Longxing Town, which provided a source case for the institutional innovation of the later "Agricultural Co-Operation System" and also generated the demand for institutional innovation.

Summarizing the grounded analysis in chapter 4, we discover that factors that contribute to the demand for institutional innovation in Chongzhou include the practical difficulties faced by Chinese agriculture, including land fragmentation, peasants' part-time employment, fragility of labor force, agricultural sideline, non-grain production, low agricultural income, and dispersed capital and shortage of service, which makes Chongzhou's innovation of national significance with a wide range of endogenous momentum, and this momentum generates constant and strong demand for institutional innovation with changes in market size, the advancement of production technology, and peasants' expectations of their own income, which is in line with Davis & North's (1971) analysis of the demand for institutional innovation. Secondly, the Ying Malong's case directly triggered the action of the institutional supply for agricultural operation institutional innovation in Chongzhou. With the combined effects of macro and micro demands, "Chongzhou dilemma" is also the dilemma facing China's agriculture. The innovation of Chongzhou's agricultural operation mode has become "doing the right thing at the right time". It is an innovative practice. The institutional innovation and "institutionalization" of the "Agricultural Co-Operation System" was later written into the "No. 1 central document" of the State Council.

5.2.1.2 Supply of institutional innovation

Although the change of demand is a necessary condition for institutional innovation, it does not constitute a sufficient condition for institutional change, and the supply of institutional innovation cannot be ignored. According to new institutional economics, the system has the attribute of public goods, and its supply mainly depends on the state machine, that is, the capability and willingness to provide new institutional arrangements under the political system. The bottom-up "marginal revolution" does not form a system. In other words, even if it proves

to be effective in grassroots practical innovation, the solution to the problem needs a process of legalization, that is, institutionalization. According to Ruttan (1978), the important supply of institutional innovation necessarily includes the use of many political means by entrepreneurs and innovators in political circles. The supply of institutional innovation is determined by the marginal cost of institutional entrepreneurs, who try to design new systems and solve conflicts between various vested interest groups. If the expected revenue of institutional entrepreneurs from institutional innovation exceeds the marginal cost of using the resources needed for such innovation, the supply of institutional innovation is guaranteed. However, the personal revenue of institutional entrepreneurs is not equal to social revenue, so the supply of institutional innovation of institutional entrepreneurs cannot reach the optimized social level. Therefore, the supply of institutional innovation mainly depends on the power structure or power comparison of vested interest groups in a society, that is, institutional innovation is the result of collective action, a wealth of information from in-depth interviews can support this conclusion.

Luo Wei: *“The logic at that time was very simple. Later, it was found that having the masses participate in the process facilitate the whole operation. First, it is the kind of market game that someone takes the lead, and professional managers with government background take the lead. The business philosophy and market information professional managers have is definitely more professional than peasants conduct land circulation themselves. When professional managers negotiate with market players, his professional and game ability may be stronger. In addition, after the participation of peasants, I found that the mutual trust between the two sides were much higher in the process than in the traditional land circulation. Then, gradually people start to notice that the voice over negotiation in the market is different with someone took the lead to transfer the land. Second, organizing the masses or not organizing them are different for solving various problems followed by. Because the ownership of the land is collectively owned, and the right to use was previously in the hands of people in every household. Organizing the masses is indeed different from the previous land circulation in terms of scale operation. Organizing the masses has laid a solid foundation for preliminary work and scale operation. From this perspective, it was found at that time that the (land shareholding cooperative) thing was quite good. Then it keeps running again, and it is found that there is a professional manager to operate the land. When the manager starts farming, we notice that it is not enough for a professional manager to farm alone, because he is unable to do such things as agricultural machinery and technology by himself, and then he will start building an agricultural service supermarket. Then there is the purchase of orders to provide all kinds of comprehensive services such as seedling raising, breeding, machine farming, machine harvesting. And then it goes on*

step by step, and that is how it worked at that time."

Zhou Weisong: *"What do I do? We are cadres at the grassroots level from the Agricultural and Rural Bureau. We have a department that organizes peasants to set up cooperatives. First of all, if we want to organize peasants together, we must give it a name, a legal institution, and cooperative is a concept that peasants are familiar with, so it is named cooperative."*

Zhou Weisong: *"The premise for establishment of the cooperative is to confirm the right. Chengdu has been issuing certificates for the right to contractual operation of land since 2008. The permanent farmland is yours. When the right is confirmed, every household has been issued a "land contractual operation right certificate", and the land can be planted for a long time without changing the ownership. When we discussed about this work that year, a certification department said that since the peasant was doing this, he was actually taking his contractual operation right of land as shares to set up a cooperative. This is everyone's decision, not my own decision. At that time, we put forward this idea, and immediately someone suggested to set up a shareholding cooperative with the right to contractual operation of land. They were not willing to farm. We proposed to take their contractual operation rights as shares. This was the result of the discussion. Just after 2010, the property rights of farmland were confirmed and issued, which was combined with the establishment of cooperatives by peasants."*

Zhou Weisong: *"Besides, after the Agricultural Development Bureau sealed the establishment of the first shareholding cooperative, the Agricultural Development Bureau could not legitimize it and it must get registered by the industry and commerce bureau. Later, in industrial and commercial registration, the industrial and commercial department said no. Premier Wen Jiabao signed a document prohibiting the establishment of shareholding cooperatives. Why is it strictly prohibited? We have seen the documents, because Chongqing has set up a land shareholding cooperative. Peasants have changed all their lands into real estate and sold them through the land shareholding cooperative. After that incident, it was strictly prohibited to set up a land shareholding cooperative, because their so-called land shareholding cooperative meant that everyone sold the land together. Not what we call agricultural land shareholding cooperatives."*

Zhou Weisong: *"Then we come back and think, can we set up a 'professional cooperative'? Yes, we can. It costs money to set up a professional cooperative. One household pays 2 mu of land, one household pays 200 yuan, and one household pays 300 yuan to set up a cooperative. We do not have a penny; we only have the land. At that time, I was young and had a more active mind, and then I went back to have a meeting to discuss what to do. That was not easy. We evaluated one mu of land. Anyway, we did not really pay for it, we just priced it with the*

contractual operation right of land. Therefore, at that time, we took the right to contractual operation of land and wrote in the articles of association ‘a bid for shares at a price of 900 yuan per mu based on the contractual operation right of land’. That is not true and meaningless, just a few hundred yuan. Not all lands were invested, 101.27 mu of 119 mu were in, 31 households out of 34 households, then we copied all the contractual rights of the shareholders in the cooperative, and 900 yuan per mu was written into the articles of association. For example, if one household has 2 mu of land, equaling to a stake of 1800 yuan. One household has 3 mu of land, equaling to a stake of 2,700 yuan. In this way, the copies were signed and got registered by the industrial and commercial department.”

Zhou Weisong: *“Why did we buy shares at such a price? It was because we wanted a legal identity and then made a marginal move. Why not 1,000 yuan, 2,000 yuan or 3,000 yuan per mu, but one mu in 900 yuan? That is the profit one mu of land could generate in one year. That was the result of group discussion. For peasants, it is unnecessary to price too high. 900 yuan per mu is an acceptable price.”*

Zhou Weisong: *“You asked about how we broke through the policy barriers and got registered when that was prohibited by policy. Why would the industrial and commercial department take such a big risk to help us? In fact, the chief leaders of Chengdu at that time approved this practice, which was the first reason. Second, our practice has had a huge sensational effect. From 2010, 2011 to 2012, we already had a reputation in the central government. The leaders of the industrial and commercial department also thought this was a good thing, and what they have done was also a breakthrough. Because they approved this, they were praised, and gained some political assets. Just a bold act of changing a name could be bragged for many years. We did not generate any political risks to him. After gotten successfully registered, all we did was agriculture. He knew there was no risk in agriculture.”*

Based on the bottom-up and top-down analysis of Chongzhou, it is found that the bold practice at the grassroots level, the encouragement and support of the local government, the cultivation and formation of the agriculture CEO market, farming technology and mechanization promotion all provide a relaxing environment for the innovation of Chongzhou’s modern agricultural operation system, and produce a supply for institutional innovation. The forms of institutional supply include spontaneous or induced institutional changes when people respond to profit opportunities caused by institutional imbalance, and imposed institutional changes caused by government behaviors (Kong,1993).

According to Davis & North (1971), institutional innovation can be carried out at three levels, that is, by individuals, cooperative groups formed voluntarily by individuals, or

government organizations. Justin Lin advances the analysis of institutional innovation supply and put forward the theory of imposed institutional innovation and induced institutional innovation (J. Lin, 1989).

According to Justin Lin’s definition (J. Lin, 1989), induced institutional change refers to the change or replacement of existing institutional arrangements, or the creation of new institutional arrangements, initiated, organized and implemented by individuals or a group (individuals) spontaneously in response to profit opportunities. The occurrence of induced institutional changes must have some profit opportunities from institutional imbalance, and there are four reasons for institutional imbalance: (1) changes in the set of institutional choices; (2) changes in technology; (3) changes in the demand for institutional services; (4) changes in other institutional arrangements.

According to Justin Lin’s definition, after the grounded analysis of the Chongzhou case, we find that the 2009 Ying Malong case broke the institutional balance, that is, the institutional arrangement of “company + peasant household” is no longer the most effective choice of the institutional arrangement of agricultural operation selection set. Moreover, after the company ran away, local peasants refused to take the land back, but turned to the local government to demand responsibility, thus causing certain social contradictions. Institutional economics points out that the institutional structure consists of institutional arrangements. When a particular institutional arrangement is unbalanced, the whole institutional structure is unbalanced. In an institutional structure, many institutional arrangements are related, and the change of a specific institutional arrangement will cause imbalance in other related institutional arrangements. Therefore, the basic methodology of studying the process of institutional change under institutional imbalance is to study the change of a specific institutional arrangement, which is then related and transmitted to other relevant institutional arrangements. Based on the grounded analysis of the Chongzhou case, the Ying Malong incident has caused imbalance in many institutional arrangements. Although in the process of institutional change, most institutional arrangements are inherited from the previous institutional structure, when the changes of individual institutional arrangements accumulate to a critical point, the institutional structure will change, and opportunities for institutional change will arise. The process of institutional change is also similar to an evolutionary process (J. Lin, 1989).

The theory of institutional change further points out that profit opportunities may arise when institutional imbalance occurs. With the benefits of profit opportunities, new institutional arrangements will be created. Chongzhou’s rural grassroots and Chongzhou’s local government were exploring a new agricultural operation system “under pressure”. As a result, there was the

bold innovation of Yangliu Land Shareholding Cooperative in 2010, which is also the source case of the institutional innovation of the “Agricultural Co-Operation System”. From the perspective of institutional supply, the innovative practice at grassroots level in Chongzhou is an induced institutional change, that is, a spontaneous institutional change from bottom to top. When describing the supply of this system, Luo Wei said:

Luo Wei: *“After Ying Malong broke the contract, peasants came to the government, and the demand at that time was very simple, that is, to collect as much rent as Ying Malong promised. That is all the peasants want when they turn to the government. From the government perspective, the main concern is that the land cannot be abandoned, and the company’s breach of contract and lease cancellation can be properly resolved afterwards. Looking back on the process at that time, if there was another social capital that directly and completely accepted the transfer price and took over the land, maybe this reform will not necessarily take place.”*

The induced institutional change originated from some profit-making opportunities that could not be obtained under the original institutional arrangement. For example, the failure of Ying Malong under the “company + peasant household” arrangement brought opportunities to the later Yangliu Land Shareholding Cooperative. According to Justin Lin’s definition, unlike induced institutional changes, imposed institutional changes are introduced and implemented by government orders and laws. The state is an institutional arrangement that has a monopoly on the legal use of imposed means within a given area. The basic function of the state is to provide law and order. The use of imposed force will produce a large-scale economy, so country belongs to the category of natural monopoly. As monopolists, states can provide institutional services at a much lower cost than competitive organizations. State has the ability to design and enforce appropriate institutional arrangements that cannot be provided by induced institutional changes.

If Yangliu Land Shareholding Cooperative is an induced innovation caused by the Ying Malong case, this “unexpected” innovation practice is not enough to cause institutional changes. According to institutional economics, if bottom-up induced institutional innovation is taken as the only source of new institutional arrangements, the supply of institutional arrangements in a society will be less than the social optimal. Institutional arrangement is a public good, and the problem of “free riding” is inherent in the innovation process. Therefore, imposed changes intervened by the state can provide remedies for the continuous insufficient supply of institutions (J. Lin, 1989). After the success of the Yangliu practice, Chongzhou local government duplicated and promoted the successful experience to other areas, and the institutional innovation triggered by it was a top-down “design” and “order” and an imposed

supply. Chongzhou’s institutional innovation practice is the result of the combined force of bottom-up induced institutional innovation and top-down imposed institutional innovation. Imposed institutional change is supported by the interviews with Zhou Weisong, “the first agriculture CEO”, and Luo Wei, the then party secretary of Longxing Town, where Yangliu Cooperative is located:

Zhou Weisong: *“In 2011, we were calling for (Land Shareholding Cooperative) expansion. At that time, the leader assigned every department to set up a cooperative. The minimum target is to set up one cooperative, and the department who meet the target will be rewarded in the year end. At that time, we had an assessment system to evaluate the performance of each department at the end of the year. The cadres of the Agricultural Development Bureau were very young. The section chiefs were all in their 30s and the youngest was only 29. Since the beginning of the year, everyone was motivated to run (set up) cooperatives, and everyone has set up their own cooperatives. Later we established 44 cooperatives with more than 6,000 mu (400 hectares) of land. “*

Zhou Weisong: *“At that time, I was the youngest middle-level leader of the Agricultural Development Bureau. In order to promote this work, Chongzhou government set up a promotion office, and I served as the director. At that time, there were a lot of research materials, and a work plan was drawn up at the beginning of the year. We needed to expand the coverage of cooperatives and promote the practice, and at the same time we were receiving many visitors.”*

Zhou Weisong: *“The comprehensive demonstration base of 100,000 mu (6666.67 hectares) of high-quality farmlands established in 2013 has specific indicators for promotion, and villages and towns in major grain and oil producing areas must be promoted in an all-round way. This needs to be done by the government at the beginning, otherwise some townships and towns attach importance to it, while some townships and towns do not attach importance to it; some townships and towns publicize it well, and some townships and towns do not publicize it well.”*

Zhou Weisong: *“I will remember what Luo Biliang said all my life. Before chatting with me, he told his students that there are two prerequisites for the large-scale production of China’s agricultural system: the first condition is that peasants must leave the land; the second condition is that the government must stand behind and promote the practice with a strong force. After talking with me, he said to his students, you see, the two points I said are exactly the case here. If the peasants do not go out and stay in the fields, how can they gather the lands? And even if peasants have gone out, without the government’s vigorous promotion, it will not succeed neither. “*

Luo Wei: *“After 2015, it came to the stage of promoting from one spot to the entire area. After I started to work in the town, the work I experienced was promotion. To some extent, it was already very mature. We would promote it in practice and study how to improve its operation, including its operating efficiency. From that stage, it is mainly about quality improvement and expansion.”*

According to interviews with Zhou Weisong and Luo Wei, the promotion of innovative practices of land shareholding cooperatives was a major task of the local government from 2011 to 2015. The local government has provided a favorable policy supply environment for institutional innovation. In February 2012, the Chongzhou Municipal Committee of the Communist Party of China and the Chongzhou Municipal People’s Government issued a “Notice on Accelerating the Development of Rural Land Contractual Operation Rights Joint Shareholding Cooperatives” and set up a designated organization “Chongzhou Leading Group Office for Promoting ‘1 + 4’ Modern Agricultural Development Mode” to be responsible for the work. From 2011 to 2014, Chengdu and Chongzhou successively issued eight policy support documents to vigorously promote land shareholding cooperatives, triggering an imposed process of institutional change.

The following is excerpted from a document issued by “Chongzhou Leading Group Office for Promoting ‘1 + 4’ Modern Agricultural Development Mode” in January 2013. In this document, the development of land shareholding cooperatives has become a special work and has become a work target of that year:

“All township governments and relevant municipal departments:

In order to vigorously develop land shareholding cooperatives (hereinafter referred to as land cooperatives), improve the degree of organization of peasants, promote large-scale and intensive grain operation, and promote continuous income increase of peasants, according to the 2013 special work objectives for the development of land cooperatives issued by the municipal government, the ‘assessment measures of Chongzhou 2013 special work objectives for the development of land shareholding cooperatives’ are hereby formulated and issued to you. Please relate to the actual situation and earnestly implement it to ensure a new breakthrough in the development of the city’s land cooperatives in 2013.”

As can be seen from Annex F, Chongzhou local government has implemented top-down imposed promotion for the development of land shareholding cooperatives in different areas. The promotion levels are divided into important town promotion, key promotion and general promotion.

To sum up, the innovation of Chongzhou agricultural operation system is an interweaving

and interacting process both from bottom to top and from top to bottom. Justin Lin (1989) points out that induced institutional change refers to the spontaneous change of a group (individual) in response to profit opportunities caused by institutional imbalance; imposed institutional change refers to changes caused by government decrees. Whereas the promotion of spontaneous institutional changes usually requires government action. In this case, imposed institutional change has a greater effect on the formation of a new system.

5.3 Promoters and driving forces of institutional innovation

According to the research of Davis and North, there are five steps in the process of institutional innovation: (1) the formation of the “first action group “. The first action group is a decision-making unit that dominates the process of institutional innovation in decision-making. The group foresees the existence of potential profits and believes that institutional innovation can bring potential profits. (2) The “first action group” proposes institutional innovation plan. (3) The “first action group” chooses the institutional innovation plan after realizing the profit according to the principle of maximum profit. (4) Form the “second action group”. This is the decision-making unit established to help the “first action group” obtain the expected profits in the process of institutional innovation. (5) The “first action group” and the “second action group” work together to realize institutional innovation. After the above mentioned five steps the institutional innovation is realized and the institutional equilibrium comes into being, that is, a new system will no longer be generated for a period of time.

Accompanied by the whole institutional innovation of the five steps in the process, the institutional innovation promoter and driving forces are important research topics. Different from the previous research conclusions on China’s institutional changes, this study discovers that besides government officials and grassroots practitioners, there is also a third group of institutional innovators of the “Agricultural Co-Operation System”, namely theory researchers. Government officials (referring to local government officials called “institutional entrepreneurs”, as well as decision makers and institutional makers of China’s agricultural policies.), grassroots practitioners (“agriculture CEOs” and peasants joining the cooperative) and theory researchers have become the main participants of institutional innovation in this study. The study finds that the top-down imposed driving force of the government and the bottom-up induced driving force of grassroots practitioners are the two direct forces that generate institutional innovation, and scholars play a coordinating role on these two forces. The coordinating enhancement impact of scholars strengthens the influence of the induced force and

imposed force on institutional innovation, as shown in Figure 5.1:

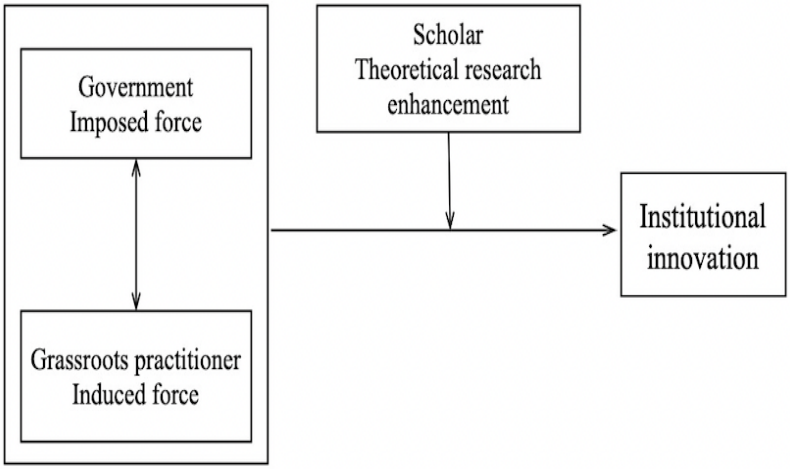

Figure 5.1 Participants and driving forces of institutional innovation

5.3.1 Grassroots practitioners: the induced force for institutional change of the first action group

5.3.1.1 Agriculture CEO

The common situation faced by agriculture in Chongzhou is that, on the one hand, most people left to farm are the elderly and women, which makes it difficult to ensure the labor intensity and operation ability required for production. On the other hand, peasants' demand for social services such as agricultural technology, agricultural machinery and agricultural product sales is increasing day by day. Due to the high transaction cost of matching between peasants and service subjects, a representative who can represent the interests of both parties and coordinate the behaviors of both parties is needed. Therefore, Chongzhou first induced the forming of the intermediary group of professional agriculture managers. Obviously, the introduction of entrepreneurial ability facilitates coordination and "judgmental decisions" while bearing operation risks to realize the accumulation of professional knowledge and division of labor in operation activities.

In interviews with agricultural CEOs Zhou Weisong, Wang Zhiquan, Wang Lingli and Ren Jianzhong, we find that as grassroots explorers of agricultural co-operation practice, agriculture CEOs play a very important role in the whole institutional change.

Zhou Weisong: *"Back in 2010, Chen Yongjian, head of the production team of Liba Village, came to the town government and said, 'No one is farming anymore in our village. We must find a way to prevent the land from being abandoned'. The town government then went to*

Chongzhou Agricultural Development Bureau. Director Chen Xin first asked, 'There were many problems in the circulation of rural land before. Can we do it in another way?' The problem in the circulation of land refers to the fact that some contractors from other places came to Chongzhou to rent peasants' land for a certain number of years but ended in running away one year later. Both the peasants and the government were not satisfied. After Ying Malong broke its contract, some people suggested that the land could be gathered and planted on a large scale, then farmed and operated by other people, with dividends at the end of the year. This idea was accepted by everyone, and it became the initial form of Chongzhou's 'Agricultural Co-Operation System'"

Zhou Weisong: *"At that time, we did not want to set up a (land shareholding cooperative), we were forced to do it. Why do we have to do this? That year was special, it was a period of change in Chongzhou agriculture. The weather that year was very cold. I still remember it clearly. It was very cold in spring and many seedlings raised by peasants died. After that incident, peasants all went to cities to work. At that time, the production team leader went to the village-level and town-level government, and the village chief and the branch secretary went to the village-level and town-level government and said that the seedlings of the peasants were all dead, and none of the peasants were farming. The farmland might be abandoned this year. If the government did not solve the problem, half of the more than 100 mu of farmland might be abandoned. At that time, the abandonment of land in Chengdu Plain could be a major political issue, and it is a serious problem. So, after that situation emerged, the village reported to the township, the township reported to the Agricultural and Rural Development Bureau, and the Agricultural Development Bureau discussed about how to solve this matter."*

Zhou Weisong: *"People came up with many ideas on how to solve this problem. My idea was put forward unintentionally by accident. One night, I remember very clearly that the director of our (Agricultural Development Bureau) chatted with us, talking about when to build a socialized service system this year, and the industrialization of agriculture. And every department was proposing plans. At that time, I said that all the plans proposed were just a deformation of land circulation, that is, if one company fails, get someone else, 500 yuan, 600 yuan, 700 yuan, 800 yuan, 900 yuan, and someone will take the business. At that time, it was a simple and direct method of circulation. Then there are great loopholes with this method. What is it? After so many years of circulation, including the amount of money we have given to subsidize the circulation, in fact, on the whole, the first problem is non-grain production, the second is flowers, seedlings, vegetables, fruit trees. In general, with an area of 10 mu, 20 mu, it would make money. For aeras more than 10 mu, 20 mu, it is more likely to suffer a loss, no*

matter what we do, the loss is inevitable. The leader said he was aware of it. I suggested we change our way of thinking. Think about it, the peasant grows his own land, pays for his own seeds, pesticides and fertilizers, rents tractors to plough the land, and machines to harvest the grains. He has to bear all the costs himself. In fact, the cost is very high because it is the retailing price. I said, if I clustered the lands together and adopt the concept of socialized service system, with the same price, there would be a profit margin."

Zhou Weisong: *"As long as we have 100 mu and 200 mu to do this, it will have a certain profit margin. On the basis of not changing the original investment of the peasants' cooperative, we plant the peasants' lands and after we make a profit, we distribute some to the peasants, then the problem is solved. It is not the traditional method. A company rents a piece of land, gives peasants a cost first, and then invites a group of people to conduct the operation. If it works in two sets of costs, there is a loss of one set of costs. At that time, I put forward the cooperative mode, which is to find ways to make money through socialized service system, intensive production and cost reduction. This was the intention at that time. I thought this idea was good, so it was a coincidence."*

Zhou Weisong: *"At that time, we proposed this concept. When we actually did it, we considered a problem from the top-level design, that is, the purpose of doing this is to make a replicable and promotable one. It is not simply to say that we just solve the problem of these 100 mu of land abandoned. This is not the solution to the problem. Chongzhou has hundreds of thousands of plots of land, how to solve the problem? Chongzhou peasants have about 1 mu of farmland per capita and 30 mu of farmland per household. Moreover, we have always planted rice in this place, and the income from rice is not high. After deducting the expenditure on agricultural materials, peasants may earn 600 to 700 yuan per mu, and 2,000 to 3,000 yuan per 3 to 5 mu, accounting for less than 5% of the family income. The income of peasants in Chongzhou mainly comes from migrate work or doing business in the city. In a word, it does not depend on agriculture. This is the first reason. Second, before the cooperative was established, what was the situation of agricultural farming in Chongzhou in 2010? You would not believe it. At that time, I was already working in the government. My family's land was given to others to farm. My parents had 1.32 mu of land, plus my family's private plot 1.05 mu. I had to give the peasant who farms 200 yuan to subsidize the cost of agricultural machinery, tractors and harvesters. You may think it is incredible. That is really the case. There was no one to farm the land, and money was paid to have someone do the farming."*

Zhou Weisong: *"So when the first cooperative was set up in 2010, we think, since the peasants had this enthusiasm, when we had a meeting with them, we pointed out that your land*

was not planted and you were unwilling to do the farming anyway, why not give it a try. There are 34 households with 119 mu of land. I suggested, 'Now that you were not willing to do it anyway, let us gather the land together. You can set up a cooperative by yourselves. In the form of a cooperative, you elect the board of directors and supervisors, and then you take the lead.' We hired a third-party farming talent. At that time, there were no professional managers. Farming experts were hired to conduct the production."

Zhou Weisong: *"We have also made it clear how to plant this land. We do not directly price the land. No, we do the calculations with the peasants. How much are seeds, pesticides, fertilizers, machine farming and machine harvesting? How much is each mu of land? We calculate all the accounts and then show the cost to the peasants. Do you think the cost is too high? If it is not high, good, the production will be conducted according to this cost. What is the average yield rate of grain per mu? The average yield rate per mu is 500 kilograms, good! Then make a discount to 450 kilograms. If the output is less than 450 kilograms, I will compensate you. If the output exceeds 450 kilograms, you will share with me half of the harvest. However, for these 450 kilograms, you still have to pay for the cost. So, the peasants also have to pay the production cost. I am not the only one who pays the cost. The two of us will calculate the general ledger, how many pesticides and fertilizers we should use, and after planting the land, we will settle the accounts and deduct the cost. Therefore, when I say 450 kilograms, I do not mean 450 kilograms of grain, but the amount of money I get after selling the 450 kilograms of grain. The money remained after deducting the cost will be distributed to the peasants, as long as the peasants agree with the cost. Anyway, many meetings were held in that year, just one meeting was far more than enough to get it done. Many meetings were held to get peasants accept this idea. At last, the peasants knew that this cooperative was not a circulation. After the cooperative was established, all our members were the boss, and the manager was the employee. We sold them with the concept and told them stories. Anyway, a lot of meetings were held before and after that year, once a month, I was really afraid that peasants did not understand, and every meeting notice was all posted on the wall."*

Zhou Weisong: *"One more thing to say. At the beginning, I did not want to do this (agricultural professional manager). I wanted to let others do it. After the establishment of the cooperative, we ignored one thing. When the cooperative was established, peasants all agreed that it was a good thing. They did not need to farm the land anyway. They immediately set up the supervisory board and the executive board, and elected the directors. When all has been done, there were no one to do the farming. We told them that the director of the executive board was responsible for the production, and the director would farm the land. The director said that*

if he wanted to farm, why would they set up a cooperative? The reason why we form the cooperative is that we do not want to farm anymore.”

Luo Wei: *“The game of the market is led by someone; equivalent to a professional manager with a government background, his operation philosophy and information are more professional than the grassroots, and he is more professional and his game capability is stronger when negotiating with market players.”*

Zhou Weisong: *“At that time, I dried the rice on two roads. I fell asleep in the sun on the road. That year, it rained a lot at night, which made it quite difficult to dry the rice. It took a long time. I was about to collapse in some days and nights. Anyway, I got it done in the end.”*

Zhou Weisong: *“The cooperative was small in scale. When there were only a few tens of mu (1 mu = 0.67 hectare) of rice, it can be dried on the road. However, when the area reached 100 mu, 200 mu, 300 mu, and hundreds of thousands of mu in 2014, there was no place to dry the rice. We raised this question in 2013.”*

Zhou Weisong: *“In 2012, we established a socialized service system by attracting investment. This problem was noticed when the agricultural service supermarket was handed over to socialized operation (centralized planting and rapid drying). At that time, the solution was to buy a dryer and solve it through the national “old warehouse drying equipment” project.”*

Wang Zhiquan: *“At first, you tried hard to persuade peasant households to join in, and then they would join in the cooperative willingly. It was difficult at first.”*

Government subsidies are distributed equally among all members of the cooperative, with the remaining 30% distributed proportionally among the peasants who have invested. The quantification of shares enables peasants to enjoy property income and operation dividends.

The emergence of professional managers has effectively solved the problems of “who will farm” and “scientific farming”, and has greatly promoted improved varieties selection, soil testing and formula fertilization, green prevention and control, unified pest control, agricultural machinery and equipment technology, and the promotion and application of scientific and technological achievements. Compared with the household operation of peasants, the average yield of rice operated by professional managers has increased by 825 kilograms per hectare, and the cost of input of production materials and machine harvesting has decreased by 15% (if the labor opportunity cost of peasants’ production is considered, the decrease rate will reach more than 40%).

5.3.1.2 Peasant households

The small scale, dispersion and fragmentation of farmland in our country have always been a

particularly prominent problem. It not only hinders the application of agricultural production to scientific and technological progress, triggers "tragedies of commons" such as farmland water conservancy facilities, and intensifies the contradiction between small production and large market. At the same time, with industrialization, urbanization and population growth, the degree of land fragmentation is deepening. In 1986, the per capita farmland of peasants decreased from 0.61 hectares to 0.49 hectares in 2008. In 2011, the area of farmland contracted for operation nationwide was 85 million hectares, with 228.8 million peasants operating, and the average household operating farmland was only 0.37 hectares. It can be seen that the household operation of agriculture in our country lacks the economy of scale. With the deepening of industrialization and urbanization and the rapid flow of rural land and labor force, the "equal package system" based on small scale, dispersion and fragmentation is facing great challenges.

In 2012, the rural migrant labor force in Chongzhou reached 73.4%. With the flow of rural labor force, the constrains of "fragmented land, fragile labor, dispersed capital and shortage of services" are intensifying, and the dilemma of "agricultural marginalization" is becoming more and more prominent. Since 2010, Chongzhou has been "forced" to undertake new explorations. Following the rural property rights system reform, Chongzhou has guided peasants to voluntarily invest their land operation rights as shares. It has set up the first land shareholding cooperative, Yangliu Land shareholding Cooperative, in Liba Village, Longxing Town, to mobilize and bring in farming experts to operate rice production. With peasants as the core, it has revitalized land resources and increased peasants' income.

The following are excerpts from the original words of the interview with representatives of the participating peasants:

Peasant A: *"In the previous land circulation, the grassroots felt been put in a weak position. In the current cooperative, the grassroots felt that their participation depth and status had greatly improved. Economic benefits have been improved and people are satisfied with the change."*

Peasant B: *"Basically, all the peasants have joined the cooperative. Now they do not want to farm. No one has quit from the cooperative. Yangliu cooperative basically covers all the peasant households in town now. People now realize the benefit of joining in the cooperative."*

Peasant C: *"Dividends are basically stable every year. What we are thinking about now is to retain more in the account to finance construction for further development (of the cooperatives)."*

Peasant D: *"As an important participant, peasants become a part of the "first action group", not only directly participating in the institutional innovation of the 'Agricultural Co-*

Operation System’, but also directly receiving the benefits of institutional innovation. In the original agricultural operation mode, agricultural development is facing major challenges. Under this background, improving agricultural operation mode and increasing the income of agricultural planting have very significant economic benefits. As important participants, peasants participated in the whole process of the practice of the ‘Agricultural Co-Operation System’. From the initial pilot exploration to the improvement and optimization to the final promotion, peasants have shown enthusiasm and creativity to jointly promote the innovation of this new agricultural operation system.”

5.3.1.3 Grassroots cadres: village party secretaries, agricultural development bureau cadres, township cadres

Cadres at the grassroots level are important promoters of the exploration and practice of the “Agricultural Co-Operation System”. Whether it is the proposal of practical innovation at the beginning, the provision of supporting services and the publicity and promotion of the practice, all of these activities involve the participation of grassroots cadres. Through in-depth interviews, we find that at the starting point of the practical exploration, after the Ying Malong case, peasants were reluctant to take the land back and demanded the local government to take responsibility instead. In order to resolve the dilemma, local grassroots cadres “were forced” to undertake new explorations. Following the rural property rights system reform, they have guided peasants to voluntarily invest their land operation rights as shares, and gradually forming a new “Agricultural Co-Operation System”.

The following are excerpts from interviews with Zhou Weisong, a former cadre of the Agricultural Development Bureau, and Mr. Luo, secretary of the Party Committee of Longxing Town:

Zhou Weisong: *“At that time, the section chiefs of the Rural Development Bureau were all very young and ambitious. The director instructed Xiao Zhou to go to one village to develop a cooperative. Each department was asked to go down and develop a cooperative. It is a target. If one gets one cooperative established, that department gets full marks in the annual performance assessment.”*

Zhou Weisong: *“At that time, in order to promote this work, Chongzhou has set up a promotion office, and I was the office directo. There were a lot of research materials. A work plan would be issued at the beginning of the year, and an assessment would be conducted at the end of the year. Cooperatives should be expanded and popularized.”*

Luo Wei: *“The earliest system was very rough and imperfect, but it was the result of*

interaction between grassroots level practitioners and peasants at the beginning, not purely spontaneous by the grassroots; it was not initiated by peasants themselves, and there were guidance, exploration and promotion from the grassroots government from the very beginning.”

Luo Wei: *“The process of implementing the system is crucial; the implementation of the system should be on the right track.”*

Village cadres represented by village party secretaries and village committee directors, grassroots cadres represented by the Agricultural Development Bureau cadres and staff, and township cadres all play a very important role in many aspects of institutional practice and innovation. Up to now, the director and legal representative of most cooperatives are still served by village cadres to represent the collective interests of cooperatives. The grassroots cadres of the Agricultural Development Bureau have played an important role in the promotion of agricultural technology and machinery and scientific planting, solving the problem of the last kilometer of agricultural machinery going to the countryside. At the same time, they have also provided important assistance for professional managers to scientifically plant and improve planting efficiency. Township cadres are representatives of grassroots cadres. On the one hand, they are important promoters of exploring practical innovation; on the other hand, they are important promoters of expanding the scope after the formation of the system. It is because of the existence of grassroots cadres that peasants can be effectively organized to explore new planting modes, and at the same time promote the new system and expand the economic benefits brought by the system.

5.3.2 Government (institutional entrepreneurs): the imposed force for institutional change of the second action group

It is the conclusion of literature research that politicians play an important role in the changes of China’s rural land system, especially the reform of rural land property rights and the initiation of the transformation of land resource allocation methods. This study includes government officials at all levels and ministries, including local governments, officials of the Ministry of Agriculture and the central government, who institutionalizes successful grassroots practices into “No.1 central document”, as a subject of institutional innovation. It should be pointed out that this study focuses on the institutional innovation process of the “Agricultural Co-Operation System”, explaining and analyzing how a rural grassroots operation practice in China is “institutionalized” into “No.1 central document”. Therefore, this study takes the grassroots practice originating from Chongzhou institutionalized to a formal system as the analysis end point of this theoretical study, it does not study the subsequent economic performance after the

“Agricultural Co-Operation System” is “institutionalized” as a national policy.

This study regards the government as a kind of innovative subject, focusing on the local government in Chongzhou, the birthplace of the “Agricultural Co-Operation System”. Here, we are not weakening the role of the central government in institutional innovation. On the contrary, if the successful practice at the grassroots level is institutionalized, whether it could be written into the “No.1 central document” exactly depends on the decision-making of the central government. There is no doubt that the national authority plays a great role in institutional changes. After more than 40 years of reform and opening up, today’s Chinese government is more open-minded, pragmatic and realistic. As long as the spontaneous efforts and innovative practices originating from the grassroots are proved to promote economic growth, the state authority will provide protection and support.

This research studies the role of the local government in Chongzhou. There are not only the township government at the grassroots level, but also the agricultural development bureau, a functional agency of the local government, and the top-down decision-making of the cheif officials of the local government. Regarding the rural grassroots government, the original words from the in-depth interviews with Luo Wei and Mr. Zhao are shown as follows:

Luo Wei: *“Chinese peasants have the same logic. Once things go wrong, they usually go to the township government. If the township government cannot solve it, he will run to the municipal government. Anyway, when an accident occurs, the grassroots government will be turned to. After Ying Malong ran away, the first thing the masses looked for was the Qiquan Town Government. They were not satisfied with the solution, and then they went to the municipal government. But I really do not know whether they went to the municipal government or not, I am not sure, it might be the government.”*

Luo Wei: *“Yangliu Land Shareholding Cooperative was only a single case at first, but this case has its institutional advantages. Once its vitality and advantages are released in practice, it is proved to be efficient in grassroots practice. How can it be legalized and turned from bottom to top? My understanding, in fact, in a sense, Xiaogang Village is not just explored by the dozens of peasants according to their blood fingerprints, there must be some leading cadres behind it, or leading cadres at a certain level to support this matter. In fact, it was nothing more than that they stood behind the scenes, because the external environment at that time was not enough for them to stand in the frontier to push the matter. But now our overall policy environment, including the external atmosphere that is relatively tolerable for reform, whether it is the political atmosphere or the policy scope, the logic behind it is that a lot or some managers, some government officials were involved, and then they felt that it could be practiced, because*

they could feel the vitality of the practice, and then the grassroots micro-pilot and closed pilot were conducted, and then got peasants to agree with our logic and orientation of this pilot, and then the masses would join in. In the beginning, it was actually the result of an interaction between cadres and the masses at the grassroots level. I do not think practices like Xiaogang Village are ideas of common people, and I think there must be some people in the system involved in this matter."

When asked about the motivation and driving force of the first land shareholding cooperative established to solve the problem of farmland abandonment and the participation of the masses after the Ying Malong case and, Mr. Zhao and Luo Wei have the following descriptions:

Luo Wei: *"The driving force is the government, definitely not the masses, but the government. The masses do not care, they have no motive to set up a cooperative. The people's previous demands, their motives and starting point are actually very simple, that is, how much rent (Ying Malong Company) promised, how much rent you pay for me now, I will not plant land, and then you should give me the same amount of rent as Ying Malong did. That is the appeal."*

Mr. Zhao: *"The role of the government in this case is actually based on China's national conditions and the reality of China's rural areas. The government assumes the role of compensating for the peasants' loss infinitely. Because of the role undertaken by the government, we have the driving force. On the basis of our political system, it all comes to the belief of 'realizing, safeguarding and developing the basic interests of the masses'. From this logic, you must do things, realize them well, maintain them well and develop them well. How can you not do it? If you do not do a good job, you have not safeguarded the interests of the masses. If we do not care and leave it unattended, it is not acceptable."*

Luo Wei: *"How much do the people in the system have the motive to change their demands for this system? I think, in general, this will only happen if the system has reached a very backward status. Generally speaking, as a policy maker, he is the one who has the original motivation for system design, system adjustment and system innovation. He has the desire from inside. As common people, many demands mainly are for the solution of the matter itself and some relevant interests, not for the system change. I think it is the same in most cases. Even if, for example, a policy of combining production, teaching and research in a certain university, the policy of individual intellectual property output; or a law, a lawyer management policy, even if it is high-tech, even if he has the ability to think rationally in this area, but for a system itself, he is often not torn by the kind of adjustment or change of the system. What he cares more*

is still his own object as the corresponding object of the policy, the changes and adjustments in interests he enjoys. It is determined by the person's role in this event. For example, peasants, taking the case of Ying Malong as an example, are more concerned about the transfer price of the land and the property rights income of the land itself. He will not pay attention to which way you protect my income and confirm my transfer price. As to whether the cooperative will give me the rent, or a boss will give me the rent, or the government, the peasants really do not care.”

When asked why local governments are motivated to launch such an innovative exploration, or whether the same problem will have the same solution in different places, Luo Wei said:

Luo Wei*: “Different places have different solutions to what happened at that time. As I understand it, in fact, the birth of Yangliu Shareholding Cooperative is divided into two parts, both accidental and inevitable. By chance, that is to say, because after the Ying Malong incident happened at that time, we had to solve this problem. This problem must be solved. This is inevitable. In addition, since Ying Malong is not an individual case in an absolute sense, it is inevitable that similar problems will be constantly emerged in different land circulations. Contingency means that those who went to solve the Ying Malong incident at that time, whether they were front-line practitioners like Zhou Weisong or the decision makers behind them at that time, might have thought of some explorations on the system and mechanism. Some of them were willing to explore and solve this problem fundamentally. Therefore, this is an accidental factor in the practice of our Chongzhou Yangliu Shareholding Cooperative. If it were for others, it would be possible to follow the traditional solution in the past. What is the traditional solution? First, the government bears the loss. Many places will follow this route. If they cannot find another company to undertake these land transfers, then the government will bear the loss. Second, if sufficient compensation is provided for the peasants, they would take back the land, which is the practice in other places.”*

Luo Wei: *“As for this problem, governments in other places may not take the same action as we do. I would say this is our contingency. At that time, when we encountered the problem, we did not simply bear the loss directly, nor did we say that we would give peasants appropriate compensation. For example, the transfer owner would give peasants appropriate compensation, such as half a year's rent compensation, a few months' rent, and then let the masses take the land back. We did not think of such a method. At that time, I thought that since the land was concentrated, then we all realized that the scale operation of land was already a trend, so I thought at that time that I would take another step and try to cross the river by feeling the stones. What I said just now is its contingency, and now because there is a group of people willing to*

take a step forward, therefore, there is also inevitable."

Luo Wei: *"These problems will be solved by any other local government. Then there is something inevitable, that is, we now look back at our system and mechanism, the 'Agricultural Co-Operation System', the land shareholding cooperative itself plus the professional manager system, which has its own scientific and advanced nature, that is to say, maybe if another group of people were there to deal with the Ying Malong case, they did not come up with this solution, but maybe at another point of time, in a certain case, someone may eventually move towards a similar solution to the 'Agricultural Co-Operation System'. The third level of necessity is that because of the scientific nature of the system itself that one day, at some point, this solution will come out."*

When talking about the actions of the government during the transitional period when Ying Malong ran away and the establishment of the Yangliu Cooperative, Luo Wei said:

Luo Wei*: "The handling of the transition period is definitely to solve the interests of the masses first. This is our government's usual solution to problems involving the interests of the masses. First solve urgent problems and calm the masses down. That is to say, take over first and explore later. The government will take over first. This is essential. First, the land cannot be abandoned. From the perspective of practical operation, we cannot let the masses worry about this matter every day. The government will first take over it, and then we will try to find a solution. Then we will send someone to deal with it. Then we will talk about the rent slowly. At that time, it must have been, in the process, a certain commitment to the rent, at least a certain amount of compensation. Gradually, we will improve it in the process of operation. It should be divided into two parts. One is to solve the urgent problem at hand, that is, get the land planted first, and our government will take care of the rent. For example, we will give some promises to the masses, and then slowly talk about how to construct this mechanism. This is also in line with our general working procedures. No matter what path we use to solve the problem, we will first give a promise. This is Chinese government, who will definitely solve problems for the masses. This is our habitual working mode; it will all be like this. We may not be able to figure out how to solve this now, but we will definitely solve it. This is the most distinctive feature of China, people-centered and serving the people. We don't know whether there is a solution or not at present, but we all tell the masses first that it is our born duty to solve the problem. If the problem is not well solved, it is our responsibility. We are responsible for this unlimited responsibility. As for how to solve it, we will see as we go."*

According to Luo Wei's description of "contingency" and "inevitability", the most powerful driving force for Chongzhou's institutional innovation comes from a promising local

government, including specific operators and decision makers of this practice. Although they are forced to solve the problem, their innovative and reformed institutional entrepreneurship makes them willing to explore ways beyond the conventional ones and come up with a new method and a system design.

This research studies the local government, whose authority is in the hands of the region’s top politician, who is more or less immune to civic preferences and pressures. Therefore, according to J. Lin (1989), this research regards the decision-making process of the Chongzhou local government as a process completed through the behavior of politicians in the region as a more satisfactory analysis method, and studies the top politician of the local government, the role he plays in the process of institutional innovation, and the incentive and motivation to ensure the implementation of appropriate institutional arrangements that cannot be provided by the induced institutional change process. “The important role of institutional/political entrepreneur” also lies in the fact that institutional arrangement, as a public goods, faces the problem of “free riding” in its production process, which makes “institutional/political entrepreneur” the most important promoter in formal institutional arrangement.

W. Zhang (2015); Q. Zhou (2013) points out that in an uncertain world, institutional changes can be viewed as venture investments. Almost all institutional changes are initiated by a small group of people, sometimes even by a single political figure. A very small group of visionaries have the ability to see the opportunities for change, to grasp the opportunity, and to have the willpower and courage to alter existing institutions. They either initiate ideas or first adopt new ideas and find ways to implement them through institutional changes such as developing reform policies. The success or failure of any institutional change, to a large extent, will depend on their decisiveness, persistence, and political skills. These people are missionary, visionary, passionate, risk-taking, and decisive.

In the practice from Chongzhou, the driving force of political entrepreneurs to institutional innovation comes from the top official of Chongzhou local government. In many rounds of in-depth interviews with agriculture CEOs, rural grassroots cadres and peasants, we find that Mr. Zhao, the top official of the local government of Chongzhou, is recognized by everyone as a leader with a sense of mission, vision and foresight, passionate and risk-taking, decisive and assertive. He is widely trusted and respected by everyone. He has the ability to grasp opportunities to create greater benefits in uncertainty and work out an innovative institutional arrangement that benefits multiple stakeholders and can produce the economy of scale. Mr. Zhao firmly believes that the new institutional arrangements will enable all stakeholders to obtain greater benefits than before. Therefore, in the whole process of institutional innovation,

he clearly described the new goals to stakeholders and showed the possibility of obtaining new benefits under the new system arrangement. Through the imposed force from the government, he established new rules and provided supporting policies needed for the operation of new rules, gave the institutional innovation the maximum support from top to bottom, thus creating the economies of scale effect of institutional innovation.

Regarding the role of the top leaders of Chongzhou local government in institutional innovation, Luo Wei describes as follows:

Luo Wei: *"Innovators of the system have the driving force for innovation, and it goes back to the most basic logic of the Chinese government discussed just now. First, this matter needs to be solved, right, and then no matter how I solve it, I have to solve this, because this is my duty, this is my responsibility, if I do not solve it, I am an official who are not making the decision for the people, so I have to do this. Then I have to think of a way to solve it. He will naturally think about the solution, that is, to design a system, or to provide a system. The system innovators themselves have this demand, and they have the original motivation to do so. One thing, and then he naturally thinks about system design, a kind of original driving force of system adjustment, because he feels that this is his duty."*

The following is an excerpt from an interview with Mr. Zhao, the then secretary of the Chongzhou Municipal Committee:

Mr. Zhao: *"Why do you want to do this? We should do things that the state and the general secretary concern, focusing on food security, and solving the problem of how to feed the mega-central city (Chengdu). The problem of food security in mega-central cities is a national proposition. I just want to solve this contradiction between supply and demand."*

Mr. Zhao: *"It must be institutionalized. Only by institutionalizing the solution can long-term stability be achieved. Before that, Chengdu carried out a rural property rights system for land ownership confirmation in 2008. 'Nothing will prosper without a clear property right.' We can't let peasants keep their golden rice bowls and beg for a living at the same time. The following set of reform logic all depends on the reform of the property rights system."*

Mr. Zhao: *"I think the reform should be replicable and promotable. If the reform we are carrying out cannot be replicated and promoted, it cannot be called truth. Only in this way can it be proved to be feasible, nothing else. How to build an 'Agricultural Co-Operation System' if this (innovative practice of modern agricultural operation) is to be theorized and abstracted? Through the 'three overall plannings and one main body': overall development planning, overall construction planning, overall fund planning and peasants as the main body to implement the reform."*

Mr. Zhao: *“How to deal with the issue of insufficient funds? The government subsidizes it. However, consideration should also be given to not cause the losing of enthusiasm because of subsidies. The original proposal was to provide the peasants machinery and equipment with 100% government subsidies, I did not agree with it. As the Chinese saying goes ‘Fortune gained easily will not be cherished’, only the grassroots they participate in person, can we improve the stability and continuity in the process, this is an institutional design.”*

Mr. Zhao: *“After the success of the Yangliu Cooperative, the biggest difficulty and challenge is to ensure the reputation of this innovative practice and maintain the reputation of the first case (Yangliu Land shareholding Cooperative). When you become famous, you cannot collapse or be stigmatized. The government should coordinate the contradictions among the participants of all cooperatives, maintain the cases that are in practice and prevent the expansion of policy risks. At the beginning of the exploration is more about operation risks, closed pilot level is ‘scenery in the teapot’, small and controllable. With the expansion of practice and the establishment of theory, this kind of risk will slowly transfer to institutional entrepreneurs, which is a kind of political risk.”*

Mr. Zhao: *“However, institutional* entrepreneurs *are born with originality and are willing to take risks and responsibilities to support institutional innovation and practice. I have a sense of mission to solve the problem, and there is a strong internal demand to trigger the institutional supply.”*

Regarding the risks born by institutional entrepreneurs in the Chongzhou case, Luo Wei and Mr. Zhao describe as follows:

Luo Wei*: “The biggest risk of reform will always be the rule of law risk derived from the superior laws and regulations. In this case, at the beginning of the design of a system, the first thing to avoid is this risk. How to avoid this risk? That is to say, it must be based on an accurate understanding of the country’s laws and regulations, major policies, and the orientation of the rule of law. If this is not grasped well, then all explorations will face the risk of being overturned, or fundamentally denied. This risk is the first question that all system designers must consider. This is also the reason why our ‘Agricultural Co-Operation System’ is better promoted. This is very important. It is very important to put this in a very prominent position from the beginning, and it is accurate from the beginning. To study the laws and regulations and the basic orientation of the central government’s three rural policies at that time, consistency must be ensured, otherwise the reform will be the biggest risk, and this is the biggest risk that must be avoided in any system design. We have done a very good job, that is, we have studied the annual No. 1 document from the very beginning. The central government’s three-rural policy includes*

the scale of land operation, including the type of operation entities. We have not made breakthroughs. The cornerstone of our practice is that we have not only prevented the non-agricultural and non-grain use of land, but we have further ensured stable grain planting area and food security from the beginning, and ensured the agricultural use of farmland. For system design, that is the biggest risk. Of course, we have done a good job. What risks are there in the practical operation in the next step? It is the issue of generalization. Which contexts and environments are suitable for this design? Regarding the operation of the agricultural co-operation system for so many years, we have a basic judgment, that is, the real vitality of the agricultural co-operation system is its efficiency."

Mr. Zhao*: "In order for grassroots independent innovation to truly become an institutional innovation, the government must intervene, otherwise it cannot be institutionalized. In our governing philosophy and logic, the government is ultimately the role that bears the greatest risks. Therefore, the problem of the common people, in the end, is closely related to the government's decision."*

Luo Wei*: "According to normal market operation and business logic, you (the peasants) choose the professional managers yourself, and you (the peasants) form the cooperatives yourself. In fact, it has nothing to do with me (the government) if you fail, but it is not true, this is not China, it is not this logic. The government is the last one and the last resort."*

Mr. Zhao*: "The reality in China is that the government is always the last resort. In fact, the government's role in this is not exogenous, it must be endogenous to the whole process of institutional innovation, otherwise the governance structure will be unstable and there will be even bigger problems. The reality of China, our institutional innovation has never meant a detached, exogenous government, and the role of the government is very important."*

Luo Wei*: "The Chinese government has never been detached. In China, based on the foundation of political establishment, it can be said that if there is a public property, even if it is collectively owned or owned by the whole population, the government will naturally stand for the protection of people or the masses. From the point of view of interests, government is always deeply involved, as long as it involves asset cooperation, even if it is a professional cooperative, the government will assume its duty, and will not follow the western method. The logic of the western method, 'what you want to do in cooperation, it is none of my business', does not work in China. As long as it is that kind of cooperative operation, as long as more people get involved in this matter, we (the government) will go in-depth intervention, this is China's national conditions. For example, the company who hires migrant workers, it is logically a legal and labor relationship issue, but why does the government forcefully promote*

the settlement of migrant workers' wages every year? This is the logic. As long as there are many people involved and the interests of the group are involved, the government will feel that it is its own business."

Through grounded research we find that, as a political entrepreneur, Mr. Zhao, although he bears the political risk of being a local chief leader, he gains intangible personal benefits in the process of institutional innovation and the establishment of new rules. It is manifested in the fact that he has gained greater social prestige, political reputation and political support in Chongzhou. These non-material benefits further reduce the cost of institutional innovation for local government leaders. The increase in peasants' income, the improvement of agricultural production efficiency, and the achievement of economies of scale brought about by the expansion and promotion of land share cooperatives are positively fed back to institutional/political entrepreneurs, making them more motivated to continue innovating, and providing an effective supply of mandatory changes. Finally, this innovative practice originated from the local area was pushed up to the central decision-making level, legalized as a national policy on China's rural land management system, and the institutional innovation was completed.

5.3.3 Scholars: the enhanced force for institutional change of the third action group

The above-mentioned combined effect of the bottom-up induced change of the grassroots practitioners in Chongzhou and the top-down imposed change of the "system/political entrepreneurs" of the local government is the direct driving force for the innovation of Chongzhou's agricultural operation system. What get our attention is that, through grounded analysis, we find that, in addition to induced driving force and imposed driving force, there is also a kind of coordinating impact from scholars to enhance the influence of the two driving forces on institutional innovation.

From the above analysis, it can be seen that Chongzhou local government has the foresight and responsibility to establish a new institutional arrangement. However, due to the limitations of social science knowledge and the limited rationality of policy makers, it is still extremely uncertain whether the new institutional arrangement can achieve the expected benefits and whether the new institutional arrangement can achieve quality improvement and efficiency improvement in the implementation process, which is risky for institutional/political entrepreneurs. If the practice and thoughts of local government institutional innovation are fully theoretically studied and verified by social scientists who have received strict scientific research and training, and if the practice is the result of active participation, interaction and negotiation

by social scientists, rather than the result of planning by a small group of authoritative figures, then the risk of institutional innovation will be reduced. In the Chongzhou practice, scholars have become another kind of innovation subject, and their role is to enhance the influence of induced change and imposed change on institutional innovation, and produce an enhanced coordinating impact.

Starting from the practice of Yangliu land shareholding cooperative, Chongzhou began to explore the construction of a new agricultural operation system combining intensification, organization, specialization and socialization. In 2012, a complete set of modern agricultural operation system was formed, which was named as "1 + 4" modern agricultural development mode with land shareholding cooperation as the core and supported by four service systems of agricultural science and technology service, agricultural socialized service, agricultural public branding service and rural financial service. In August 2012, China Central Television's most influential in-depth coverage column "Focus Interview" gave a 12-minute positive special report on the development mode and practical application of "1 + 4" modern agriculture in Chongzhou entitled as "Professional Managers in the Farmland". In the report, officials such as the Minister of Agriculture Han Changfu and experts fully affirmed Chongzhou's innovative practice.

In October 2012, with the expansion and promotion of Chongzhou's "1 + 4 modern agricultural operation system", Chongzhou has set up land shareholding cooperatives mainly engaged in large-scale rice planting in 141 villages of 21 townships, with 33,600 households and an area of 81,200 mu (54,133 hectares), initially realizing the transformation from fragmented agricultural operation to large-scale and intensive operation. With the completion of Chongzhou's "100,000 mu (6,667 hectares) modern agricultural comprehensive demonstration area", the economy of scale effect produced by the new agricultural operation system has gradually expanded, and Chongzhou's innovation has spread across regions and attracted extensive attention from scholars and policy makers.

Mr. Zhao (then secretary of Chongzhou Municipal Party Committee): "*On June 21, 2013, the minister of agriculture Han Changbin made a special inspection on the large-scale operation of grain and the cultivation of new professional peasants in our city. He strongly approved the '1 + 4' new agricultural operation system innovated and formed in our city. He spoke highly of the practice of promoting the moderate scale operation of grain and cultivating professional agricultural managers to solve the problem of 'who will farm' by developing land shareholding cooperatives. Minister Han was pleased to see all these and thought that our logic for innovation was clear and we represented the direction of future agriculture development.*"

Mr. Zhao: "*In June 2013, the president of Sichuan Academy of Social Sciences led a doctoral team to several villages and towns in Chongzhou to conduct research on professional managers and cooperatives, wrote research reports, and exchanged experiences with Chongzhou. The Sichuan Provincial Department of Agriculture had also invited well-known experts and scholars from all over the country to Chongzhou to hold a national seminar.*"

Mr. Zhao: "*There were a lot of arguments in the process of designing the agricultural operation system. A large number of experts and officials visited Chongzhou for inspection and exchange. Experts and officials at all levels have come to Chongzhou. National, provincial and municipal officials were here to conduct inspection, experts at all levels were here to conduct research.*"

Zhou Weisong: "*In the two years of 2014 and 2015, basically half of my time was devoted to the promotion and development of cooperatives, the formulation of policies, half of the time for reception, and there were many experts coming to exchange thoughts and ideas.*"

In 2013, South China Agricultural University, the Rural Economic Research Department of the Development Research Center of the State Council, and the Sichuan Academy of Social Sciences jointly established a research team on "China's New Agricultural Operation System". The research team have conducted field works in Chongzhou many times. In April 2014, the "China's Agricultural Operation Institutional Innovation Practice Seminar" was held in Chongzhou. Experts and scholars from all over the country gathered in Chongzhou to discuss about the Chongzhou experiment and its demonstration value. The research team developed Chongzhou's "1 + 4" new agricultural operation system up to a "1 + 1 + 1" agricultural co-operation system, that is, "peasants as the main body to voluntarily and autonomously establish land shareholding cooperatives to promote the large-scale operation of agriculture; cultivate professional agriculture managers to promote the professional operation of agriculture; strengthen socialized services to promote organized operation of agriculture. Till then, the "Agricultural Co-Operation System" has been formally proposed.

In the interview, Mr. Zhao talked about the applicability and replicability of Chongzhou's "Agricultural Co-Operation System" in the whole country. He says:

"*Experts have helped us upgrade Chongzhou's '1 + 4'to 'Agricultural Co-Operation System', which played a great role for Chongzhou's innovative practice to be promoted to the whole country. Experts and scholars have studied the applicability and replicability of Chongzhou's 'Agricultural Co-Operation System'.*"

"*Professor Luo Biliang, director of the China Agricultural Industry Development Research Center and professor of the School of Economics and Operation of South China Agricultural*

University, said that the practice of cultivating a team of professional agricultural managers to promote the professional operation of agriculture, having peasants as the main body to voluntarily and independently form land shareholding cooperatives to promote the large-scale operation of agriculture and strengthening socialized services to promote the organized operation of agriculture has achieved the 'co-construction, co-operation, sharing and multi-win' of multiple subjects, it is likely to become a breakthrough point in the reform of China's agricultural economic system. Professor Luo believes that the 'Chongzhou experiment' has effectively cracked the bottleneck of the application of advanced science and technology and modern production methods in household operation, as well as the problem of the weakening of the unified operation level. It has optimized the allocation of agricultural resources, realized the efficient matching of advanced production factors such as modern materials, technology and equipment, entrepreneurial ability and operation methods, improved the land output rate, resource utilization rate and labor productivity, promoted the intensification, specialization, organization and socialization of modern agricultural operation, and enhanced the capacity for the sustainable development of agriculture."

"*Guo Xiaoming, vice-president of Sichuan Academy of Social Sciences, believes that the innovation of our Chongzhou agricultural co-operation mode is mainly reflected in the realization of rural land circulation and large-scale operation at low cost, which fairly solves the problem of high cost in traditional land circulation. This facilitates professional managers with special skills to operate land on a large scale, thus promoting the cultivation of professional peasants. Professor Guo also believes that gathering funds in the form of cooperatives can solve the problem of insufficient investment of funds in the early stage after land circulation."*

"*Of course, we have fully discussed with experts and scholars. We also know that Chongzhou's agricultural co-operation system is an important exploration of the current agricultural land reform, but it is not the only way. The promotion of the Chongzhou mode requires certain conditions, including the technical conditions of agricultural production, irrigation conditions, land flatness, the degree of agricultural mechanization and non-agricultural employment.*"

In 2014, the "Agricultural Co-Operation System" was formally put forward after the refinement of scholars' theories. The innovative agricultural operation mode "Agricultural Co-Operation System", which integrates the "3 in 1" of "land shareholding cooperative + professional agriculture manager + modern agricultural service system", has been highly praised by the China Agricultural Office, the Ministry of Agriculture, the National Development

and Reform Commission and other national departments. In 2015, “No.1 central document” of the Central Committee proposed for the first time to “guide peasants to take shares in cooperatives and leading enterprises with land operation rights”, which means that the “Agricultural Co-Operation System” as a new agricultural operation system has been supported by top-level design and institutional innovation has been realized.

Through grounded theory analysis, we find that after Chongzhou pioneered the “Agricultural Co-Operation System” mode with wide influence in 2010, experts and scholars began to believe that this mode may be an important direction for the innovation of China’s agricultural operation mode. In the process of institutional innovation, the coordinating enhancement impact of the experts and scholars is summarized as follows:

In 2014: The research team has completed a research report titled “Reform Facing Innovation: ‘Reflections on Agricultural Co-Operation System Based on Property Rights Theory and Division of Labor Theory’” at the beginning of the year. The report systematically combed the root causes and practical challenges of China’s agricultural operation pattern, and identified some major theoretical differences in the academia on agricultural operation system, especially the discussion on the division of labor economy of agricultural scale production and operation, the nature of household production and operation, and various innovative experiments at that time, focusing on revealing the innovative value and practical significance of the “Agricultural Co-Operation System” from the theoretical level. Based on the report, a policy proposal “ ‘Agricultural Co-Operation System’: A New Breakthrough in China’s Agricultural Operation System” was published by the Development Research Center of the State Council in “Investigation and Research Report” (April 11, 2014, No. 56) and “ Selection of Investigation and Research Report” (April 15, 2014, No. 46) respectively, and received instructions from the then Standing Committee of the Political Bureau of the Central Committee, Vice Premier Zhang Gaoli of the State Council and Vice Premier Wang Yang of the State Council. The then Sichuan Provincial Party Committee Secretary Wang Dongming gave instruction for the report to be issued to the whole province by the Sichuan Provincial Agricultural Commission on “Rural Work” (No.15, 2014). In addition, based on the research report, the team, Sichuan Academy of Social Sciences and the Rural Economic Research Department of the Development Research Center of the State Council jointly held the “China Agricultural Operation Institutional Innovation Practice Seminar” on April 27, 2014. Many well-known experts and scholars from central and local government departments and scientific research institutions gathered in Chongzhou to conduct in-depth discussions on the innovative value and promotion possibility of the “Agricultural Co-Operation System”. China’s

mainstream media including People’s Daily, Economic Daily, Peasants’ Daily, China Economic Times, First Financial Daily, Current Affairs Report, Sichuan Daily, CCTV, People’s Daily Online, China Finance and Economics, Guangming Network, Fenghuang Finance and Economics and many other media have reported this event successively.

In 2015: At the beginning of the year, the research team has completed the research report “Agricultural Co-operation System: An Innovative Development Direction-Transformation of Agricultural Operation Mode and Interpretation of Chongzhou Experiment”. The report re-summarizes the system core, innovation breakthrough and enlightenment value of Chongzhou experiment, especially further discusses the generalization and replicability of “Agricultural Co-operation System”. According to the report, the “Agricultural Co-Operation System” explored by Chongzhou is an important breakthrough to crack the transformation of China’s agricultural operation mode and indicates an important direction for the innovation of China’s agricultural operation system and mechanism. The Chongzhou example not only enriches the reform practice in China’s rural areas, but also provides “Chinese experience” for the transformation of traditional agriculture in developing countries around the world, which has far-reaching and extensive significance. The report was published in full by the Development Research Center of the State Council in the 6th issue of the Special Research Report in 2015. At that time, Wang Yang, member of the Political Bureau of the Central Committee, Vice Premier of the State Council, and Han Changfu, Minister of Agriculture, gave important instructions to the report respectively. The national onsite meeting on accelerating the transformation of agricultural development mode was held in Chengdu on July 24, 2015. Wang Yang, then member of the Political Bureau of the CPC Central Committee and Vice Premier of the State Council, attended the meeting and delivered a speech. He spoke highly of the “Agricultural Co-operation System” practiced in Chongzhou.

5.3.4 The combined force of institutional innovation under the interaction of the three forces

To sum up, we have constructed a model of the institutional change process of the “Agricultural Co-Operation System”, as shown in Figure 5.2

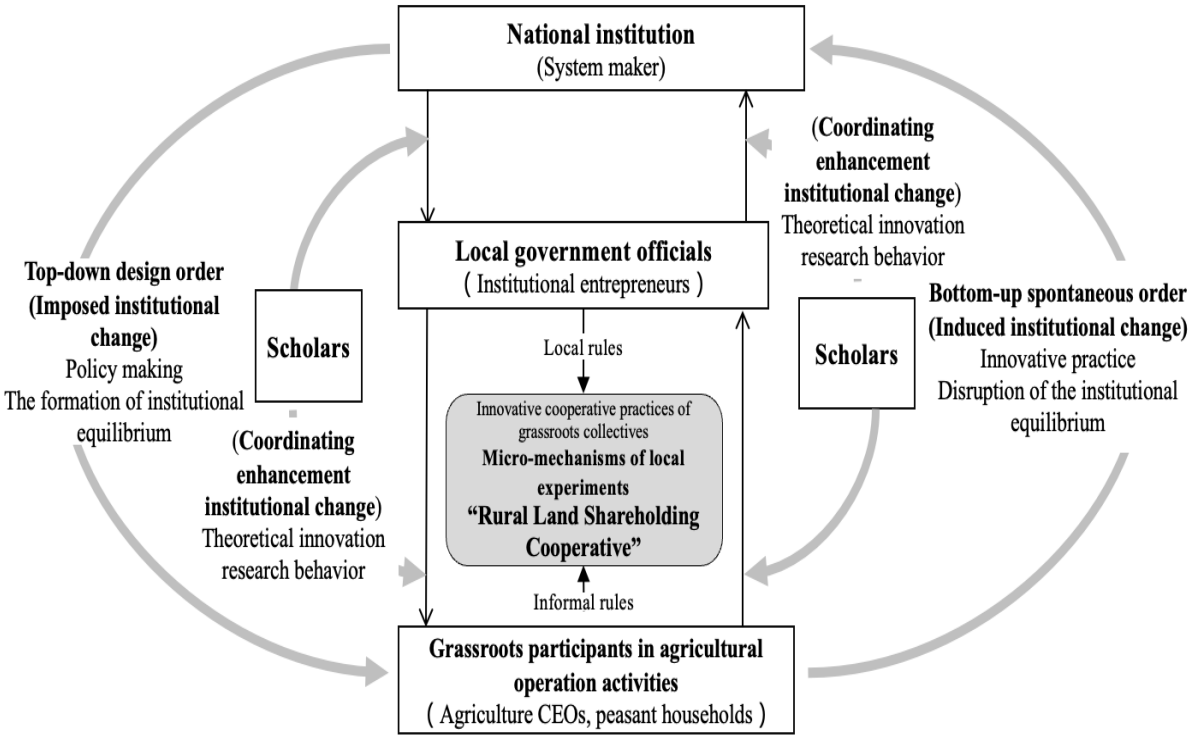

Figure 5.2 The process of institutional change with multi-agent participation

In the Chongzhou case, the interactive process of the two orders is accompanied by the generation of the principal-agent relationship. It is described in the interview as follows:

Luo Wei: *"In the process of this institutional change, the government took over the case (after Ying Malong broke the contract) at the beginning and became the decision maker and designer of the system. The dominant position of the masses is reflected in the beginning of the system design. The high-intensity interaction between the grassroots system designers and the grassroots masses reflects the dominant position of the masses. However, we cannot expect the masses to have a solution for this kind of thing, that is unrealistic. As the designer, you provide a solution, countless solutions, get the masses sit together to analyze the pros and cons, think about the pros and cons, and then talk about which plan is better. If the masses approve this plan, it will go well in the end. It does not mean that the masses will offer some ideas."*

Mr. Zhao: *"There are hundreds of peasants who jointly own the land, and then they will have a spokesperson. When there is a problem, they habitually go to the government, so the government and peasants form a principal-agent relationship to some extent. Of course, the professional manager is the agent of the peasant household, and he acts as an agent to operate the output of the land in which the shares are held. When we talk about the government, the government can be understood as the agent of more than 100 peasants who collectively own land in this principal-agent relationship participating in the cooperation. I think the principal-*

agent relationship between the government and peasants is established. When it becomes the agent, he must perform his corresponding duties and roles, that is, he must do this. Based on the reality in rural China, the role of the government is not only an agent, it also represents the collective. Otherwise, why would the peasants always come to the government if something goes wrong? They think you are the spokesperson of our group, so you should be honest with me. To a certain extent, the government has become the last resort of this institutional innovation and the operating performance of this land cooperative."

Luo Wei: *"In the process of practical operation, the deep cognition of the masses must be that the ultimate responsibility bearer is the government. For example, whether the operation is good or bad, including whether the masses can benefit, the government will be challenged. It is like this at the grassroots level in rural areas. In this sense, the principal-agent relationship between the government and peasants is established. Not only the masses but also the general public thinks this way, as the grassroots government and even governments at all levels. For example, if the matter with the cooperative really breaks down, of course, our system design will not encounter such a serious situation, but if it does break down, all the assets are mortgaged in some way, of course, the current policy cannot support it. It is just an analogy. The rights and interests of the masses are completely lost. At such times, the State Council and the central government will question the local governments, have you safeguarded the interests of the masses in this process? Logically speaking, the relevant government may even be investigated for its dereliction of duty or inaction. So, the government is the one who bears the ultimate responsibility."*

From Figure 5.2, the grassroots participants in agricultural operation activities, the government (this study focuses on local governments) and the multi-subjects of scholars participated in the institutional innovation process of the "Agricultural Co-Operation System". Among them, innovative practical actions from the grassroots broke the original institutional balance and formed a bottom-up spontaneous order. Policy-making actions from the government have formed a new institutional balance and constructed a top-down design order. The two orders interact with each other in the process of emerging new problems and solving problems, forming a joint force that triggers the process of institutional change.

Forty years ago, at the beginning of China's reform and opening up, the institutional innovation process of the rural "Household Responsibility System" was a kind of "ex-post recognition" (Chen Yun's words), that is, local experiments were first carried out, local recognition was gradually absorbed into the central policy, and finally legislative recognition was made. In the book "Logic of Reform", Q. Zhou (2013) points out that "reform is to legalize

the solution to the problem" and "as long as policymakers look down, there are enough solutions to the problem in the spontaneous behaviors of various places". Spontaneous efforts at the bottom are the driving force of China's economic growth. No matter what difficulties China's economy encounters or what problems it expects to solve, the first ones to react are the practitioners in the system. However, whether spontaneous non-governmental efforts can be legally recognized by national policies and under what conditions, scattered, spontaneous and fragmented efforts can converge into policies and institutions are major challenges of institutional changes. At this time, the application of state authority is quite important. Deng Xiaoping's contribution is that he is a politician who faces reality and dares to exercise his political authority to provide experimental protection and legitimate recognition for spontaneous reform practices.

Through analysis, we find that the institutional changes in Chongzhou also show "post-recognition doctrine". First, how the innovative operation mode of Yangliu Cooperative can be promoted step by step, from an "unauthorized" reform to an "authorized" reform, Luo Wei describes in the interview as follows:

Luo Wei: *"Yangliu's mode at that time, after the establishment of the cooperative and the hiring of professional managers, many people, including the decision-makers and practitioners at that time, found that the operation efficiency was higher, the participation of the masses and the satisfaction of the masses were higher. Under this mode peasants no longer feel weak or lack of right of speech as in the previous land transfer. The masses feel that the depth of their participation and their position in it have been greatly improved compared to the traditional method. In addition, this kind of operation itself is also efficient, and the organization of the masses has been further improved. There were many institutional advantages that made many decision makers feel the vitality of the mechanism at that time, and felt that it could be promoted further. In addition, there is another incentive. When our Municipal Party Committee Political Research Office conducted research, the "1+4" was indeed recognized by higher levels, which strengthen our confidence to push forward. This is similar to the practice of many of our reforms, that is, even if we do not authorize the reform first, but to a certain extent, there is a decision-making process of a grassroots exploration and confirmation from the superiors, and then further exploration is carried out. This decision-making process is in line with our general reform practice procedures. For example, for one thing, we first cross the river by feeling the stones with no one to approve it in the higher government level. After we did it to a certain extent, we felt that the system had its advantages, and then we began to write research reports and situation reports in a certain way. Let the higher level know about our practice, if a higher*

decision-making, higher level feels that your system is feasible, or affirmed, then we will transform that kind of unauthorized reform into authorized reform. After the confirmation of the high decision-making level, the reform will be deepened and expanded."

Luo Wei: *"The reflection of the practice should be like this, that is to say, writing something (report), and then Chengdu City, Sichuan Province, including the relevant departments of the Provincial Department of Agriculture and Rural Affairs, feel that your practice is, first, in line with the existing laws and regulations. Under the framework, it fits current policy orientation, and then it is consistent with the policy and system design orientation of agricultural scale operation at that time, and surely you will be told to keep trying, and then you think it makes sense, then it will naturally be promoted. It is really a bottom-up reform of system development, asking for authorization, and then it becomes a top-down deep reform after authorization."*

In the process of the local government's step-by-step promotion, how to complete the process of institutional change through innovative practices, and how to complete the process of institutionalization with the "No.1 central document" is also our focus. In the process of solving new problems, Chongzhou local government and grassroots participants shew up almost at the same time without time lag. Here, the imposed force of Chongzhou local government is manifested as guidance, support and encouragement. After the success of the closed experiment of Yangliu Land Cooperative, the local government carried out a large-scale open experiment with great political courage and commitment. The willpower of the local government is manifested in policy formulation, such as the development and implementation of the land shareholding cooperative formulated by Chongzhou from 2012 to 2015, target assessment for the promotion of the "1 + 4 modern agricultural operation system" and various supporting documents, all of which shape the behavior of grassroots agricultural organizations including restraint and power from top to bottom, which is the imposed force of institutional innovation. At the same time, in the Chongzhou case, we find that there has always been reversed processes, that is, the grassroots participants in rural economic activities constantly change their operation content according to the problems emerging in practice. The top-down and bottom-up processes are constantly intertwined, which jointly affect institutional changes and produce institutional innovations. The causal mechanism works in both directions, from macro to micro, and from micro to macro. The government not only formulates formal regulations, but also makes corresponding adjustments to bottom-up demands and responses, and generates accompanying endogenous demand for institutional change. The participants in agricultural operation activities and the government change and influence the institutional environment through collective actions. The practical exploration at the bottom and the

guidance and support from the local government work together to solve the emerging problems in innovation. In the gradual process of “noticing problems-solving problems”, the “first action group” of institutional innovation has been formed.

Zhou Weisong, “*In practice, we may solve some problems predictably in advance, but in the whole process, from the land shareholding cooperative to “1 + 4” and co-operation system, it is not built in one step. When a problem emerges, we try to solve it by issuing a supporting policy. We solve the problem step by step. It is a gradual process from the promotion of agricultural science and technology in the early stage to the cultivation of professional managers, then the improvement of the whole socialized service system, the improvement of infrastructure, and then the construction of drying centers in the later stage. When the area of farmlands reaches certain amount, problems will emerge. When the area of farmlands reaches to a larger amount, we start to face other problems. We solve the problems one by one. There is strong support from the government in the whole process*.”

Luo Wei: *“In our case, I think it should be like this. The system was very rough and incomplete at first, and even the consideration was not very comprehensive and immature. But what is certain is that the first move is a result of the interaction between grassroots practitioners, managers and the masses, even in the most primitive system design, should be an interactive process. A system design framework should not purely be based on the wishes and demands of the masses.”*

Mr. Zhao, “*At the beginning of the reform, we were not sure what problems we would encounter. In fact, it is a process of ‘crossing the river by feeling the stone’. We pioneer innovation to work on the project, making adjustment at the same time. It is gradual process of finding problems and solving problems.*”

With the formation and expansion of the innovation mode, the effectiveness of innovation has been proved and tested in a wide range. Chongzhou innovation has attracted the attention of the national policy decision-making departments. In many rounds of research and discussion at all levels, Chongzhou innovation has been acquiesced and recognized at the national level. In this process, the “second action group” of institutional innovation was formed. The interaction and positive feedback between the “first action group” and the “second action group” finally got the innovative practice of at the grassroots level written into the “No.1 central document” as a formal system.

In addition, from the grounded analysis of Chongzhou, we find that there is the third type of institutional innovation subject, that is, theory researchers, in the practice. In the previous research literature on institutional innovation and institutional change, scholars and their roles

have never received attention. The innovative discovery of this study is that the research and academic discussion of experts and scholars has formed a theory for the practical experience of the “first action group” and also provided the theoretical foundations and suggestions for the “second action group” to make policies. Therefore, this study believes that scholars are the “third action group” of institutional innovation, and this group plays a coordinating and enhancing role in the process of institutional innovation.

Figure 5.2 depicts the dynamic role of the three types of innovative subjects in the process of institutional change. The interaction is manifested in the induced change force generated by the bottom-up “innovative behavior” of grassroots practitioners and the imposed change force generated by the top-down “policy behavior” of the local government. The coordinating impact on the interaction is realized as the enhancement force generated by the “theoretical innovation behavior” of scholars. The combined efforts of the three forces have led to the institutional innovation of the “Agricultural Co-Operation System”.

5.3.4.1 Bottom-up grassroots practice: efforts at the bottom to solve problems spontaneously

Induced institutional change refers to people’s spontaneous advocacy and implementation of reforms to change or replace the current institutional arrangements and create new institutional arrangements when facing profit opportunities. It is a spontaneous institutional change taking place when people are pursuing profit opportunities caused by institutional imbalance. The subjects of induced institutional changes are individuals (or groups composed of individuals), enterprises (or interest groups) and the government: among them, individuals and enterprises are primary action groups, or first action groups. Their decision-making dominates the process of innovation in institutional arrangements (Davis & North, 1971). The government (or the country it represents) is a secondary action group, or second action group, and is also a decision-making unit. Its role is to help primary action groups obtain income and make some institutional arrangements (Davis & North, 1971) to promote institutional changes.

Looking back on the generation of the “Agricultural Co-Operation System”, we can find that its initial emergence was a bottom-up grassroots practice. Faced with the breach of lease by Ying Malong Company in Qiquan Town in 2009, peasants were unwilling to take back the returned contracted land and instead asked the government to take responsibility, forcing the grassroots government to innovate an agricultural practice to resolve the dilemma and maintain the stability of agricultural production and rural development. In fact, there is a more serious dilemma in agricultural development behind this, that is, the household operation of agriculture

in our country lacks economies of scale.

In this background, the Chongzhou government, grassroots cadres and peasants, as the “first action group”, have jointly carried out an innovative agricultural operation practice. Based on collective land ownership, family contract, peasants as the core subject, and revitalizing agricultural land operation rights as clues, multiple subjects such as land shareholding cooperatives, professional agriculture managers, and social service organizations jointly operate the farmland, thus forming the three paths of “subject cooperation, benefit sharing, and goal compatibility” and achieving the target of multi-subject “co-building, co-operating, sharing and multi-win”.

5.3.4.2 Top-down institutional reform: the exercise of state authority

Imposed institutional change refers to a way of institutional change in which systems are promoted and changed through external imposed forces such as administrative power and legislative means. The formal system of “imposed change” is implemented by the government and is often the product of expert decision-making. A state, as Max (1919) defined it, is an institutional arrangement that has a monopoly over the legitimate use of imposed means within a given area. The basic function of the state is to provide law and order and to protect property rights in exchange for taxes. Since there is a large economy of scale in the use of imposed force, the state monopoly is a type of natural monopoly. As monopolists, the state can provide the above-mentioned institutional services at a much lower cost than competitive organizations. Thus, when the state exists, the total income of society will be greater than the total income of society when individuals have to provide services themselves or receive such services from other competitive organizations. From a normative point of view, the most ideal country can be considered as the smallest country “limited to the narrow-tolerance functions of preventing violence, theft, fraud and protecting the performance of contracts”.

Since the formation of scale in 2012, the Chongzhou Cooperative was named “Chongzhou 1 + 4 Modern Agricultural Operation Development Mode”. In 2014, the Rural Economic Research Department of the Development Research Center of the State Council, the Coordination and Innovation Center for Rural Economic Transformation and Development of South China Agricultural University and the Sichuan Academy of Social Sciences sponsored the “China Agricultural Operation Institutional Innovation Practice Seminar” in Chongzhou to promote Chongzhou’s practice nationwide. At the seminar, the “1 + 4” new agricultural operation system in Chongzhou was summarized and upgraded to the “1 + 1 + 1” “Agricultural Co-Operation System” and the concept of the “Agricultural Co-Operation System” was

formally introduced.

After that, the general offices of the CPC Central Committee and the State Council issued the “Opinions on Guiding the Orderly Circulation of Rural Land Operation Rights to Develop Moderate Scale Operation of Agriculture”, which generally requires “adhering to the collective ownership of rural land, realizing the separation of ownership, contract rights and operation rights, guiding the orderly circulation of land operation rights, adhering to the basic position of household operation, actively cultivating new operation entities, developing various forms of moderate scale operation, and consolidating and improving the basic operation system in rural areas”. In the following “No.1 central document”, it was mentioned many times that the right to operate should be released to encourage the development of cooperatives. “No.1 central document” of the Central Committee in 2014 proposed, “On the basis of implementing the collective ownership of rural land, stabilize peasants’ contractual rights, release land operation rights, and allow the operation rights of contracted land to be mortgaged and financed by the financial institution group. Pay close attention to the confirmation, registration and certification of the right to contractual operation of rural land, and fully rely on the independent consultation of the grassroots of peasants to solve the contradictions and problems encountered in the work. The right and the land can be confirmed, or one can choose to confirm the right and the share without confirming the land”. “Support the development of new agricultural operation entities. Encourage the development of professional cooperation, shareholding cooperation and other forms of peasants’ cooperatives, guide standardized operation, and strive to strengthen capacity building. Financial project funds are allowed to be directly invested in qualified cooperatives, and assets formed by financial subsidies are allowed to be transferred to cooperatives for holding and operation.” In the 2016 “No.1 central document”, it is proposed that “various forms of agriculture should play a leading role in moderate scale operation, support new agricultural operation entities and new agricultural service entities to become the backbone of the construction of modern agriculture, and accelerate the formation of a policy system to cultivate new agricultural operation entities”. In 2017, the “No.1 central document” proposes: “Vigorously cultivate new agricultural subjects and service subjects, and accelerate the development of land circulation, service-driven and other forms of scale operation through various forms. Summarize and promote the pilot of socialized services throughout agricultural production, and support the cultivation of commercial social organizations.” In the 2018 “No.1 central document”, it is proposed, “Improve the system of ‘three rights separation’ of rural contracted land, and equally protect the land operation rights on the premise of protecting collective land ownership and peasants’ contractual rights in accordance with the law. The right

to contracted land operation in rural areas may, in accordance with the law, obtain financing guarantees from financial institutions groups and acquire shares to engage in industrialized agricultural operations.” By 2019, Article 5 of No.1 Document of the Central Committee proposes to comprehensively deepen rural reform and stimulate rural vitality. So far, the innovative practice at the grassroots level has been institutionalized through the acquiescence, attention and research of the “second action group”. The “Agricultural Co-Operation System has gradually been recognized at the national level and has been generalized and implemented nationwide.

5.3.4.3 Theoretical enhancement and regulation: to enhance the intensity of the interaction between the two forces

Through grounded theoretical analysis, we find that in the process of institutionalization of agricultural co-operation innovation, the “third action group” represented by experts and scholars has played a very great role in the process of institutional change. On the one hand, the research and academic discussion of experts and scholars have provided a direct promotion for the “first action group” to finally upgrade the summary of practical experience to theory. On the other hand, it also provides theoretical support for the “second action group” to finally institutionalize the innovative practice at the grassroots level, and provides wisdom and suggestions for policy formulation and promotion.

The formation of the innovative “third action group” has played a significant role in promoting the interaction between the “first action group” and the “second action group”. In the practice of the “Agricultural Co-Operation System”, grassroots cadres and peasants were given priority in the early stage to undertake practical exploration experience. After the exploration practice gradually achieved initial results, it attracted the research of experts and scholars from universities and scientific research institutes and gradually combed the exploration experience to form the “Chongzhou 1 + 3 modern agricultural operation mode”. This is the embryonic form of the “Agricultural Co-Operation System”. With the further expansion of practice, the effect of practice has gradually attracted the attention of higher-level government officials. Under this background, scholars further sublimated the innovative practice theoretically, promoted its institutionalization process, and finally generated the institutional concept of “Agricultural Co-Operation System”. At the same time, the participation of experts and scholars has also greatly promoted the promotion of the “Agricultural Co-Operation System” at the top level of the government. Many scholars, together with experts from the Development Research Center of the State Council, have actively participated in and

promoted the research of China’s new agricultural operation system, promoted the connotation and practice of the “Agricultural Co-Operation System”, realized its application in policy documents, and made it a system that can be generalized nationwide. It can be concluded that the “third action group” mainly represented by experts and scholars plays a very important role in regulating and promoting the institutional changes of the whole “Agricultural Co-Operation System”.

5.4 Micro-system of institutional innovation: land shareholding cooperative

After sorting out the records of several rounds of field research and interview, this study restores the source case of the institutional innovation of “Agricultural Co-Operation System” - Chongzhou Yangliu Land Shareholding Cooperative (hereinafter referred to as Yangliu Cooperative) as the analysis object of the micro-system of institutional innovation.

Yangliu Cooperative is the first land sharholding cooperative with the right to contractual operation of land in Chongzhou established in the whole country. It was initiated and established in May 2010 by 15 groups of 30 peasants in Liba Village, Longxing Town. Following the rural property rights reform, it voluntarily invested 101.27 mu (6.75 hectares) of contractual operation rights (0.01 mu per share). Each mu was priced at 900 yuan (124 euros) as a contribution. It was discussed and approved by the members’ meeting and written into the “Articles of Association” of the cooperative, see Annex G for details. It was later verified by the industrial and commercial department and got registered. After its establishment, the cooperative has achieved good results and made rapid development. By the end of 2012, the cooperative had 102 peasant households and 281.7 mu (18.78 hectares) of land, engaged in large-scale cultivation of rice, wheat, rape and edible fungi. This is the first cooperative in the country in which peasants did not pay, but used the land right as a contribution and formally got registered in the Industrial and Commercial Bureau.

5.4.1 Introduction to the practice of cooperatives

(1) The evaluation and pricing of the right to contractual operation of land

The evaluation and pricing of the right to contractual operation of land is the prerequisite for the right to contractual operation of land to become a share in the establishment of a land shareholding cooperative. The important condition for the stability of rural land contract relationship is the confirmation of land property rights. The registration and certification of collective land ownership will implement ownership to collective organizations that legally

exercise ownership. After the ownership is confirmed, it includes “Collective Land Ownership Certificate”, “Collective Land Use Right Certificate”, “Housing Ownership Certificate”, “Rural Land Contractual Operation Right Certificate” and “Forest Ownership Certificate”. The ownership certificates of these lands are issued to collective economic organizations such as villages and groups, and the use right is issued to every peasant. At the beginning of the planning for the establishment of the Yangliu Cooperative, because professional cooperatives needed to be established at a cost, peasants did not want to pay at that time, what they had was the land (contractual operation right). After discussion at the meeting, everyone thought that “One mu (0.07 hectare) of land generates a profit of about 900 yuan (124 euros) a year, and it is appropriate to take the profits as shares”. They decided to use the land contractual operation right as a contribution. The price was determined based on the average harvest. In the articles of association, it was written that “the land contractual operation right is converted into shares at a bid price, and 900 yuan (124 euros) is discounted per mu (0.07hectare)”.

(2) Respect the wishes of peasants, the right to contractual operation as shares

On the principles of voluntary admission, freedom to withdraw from the cooperative, benefit sharing and risk sharing, the peasant households voluntarily pay the share price of the land contractual operation right. After signing and pledging between the peasant and the cooperative, “it issues the cooperative with the land operation right certificate, historical number 001, by imitating the format and content of the land contractual operation right”. Finally, they discussed and decided to convert the land operation rights held by peasants into shares and become shareholders to set up cooperatives.

(3) Land shareholding cooperatives promote industrial and commercial registration reform

At first, due to policy restrictions, there has never been a land shareholding cooperative with the right to contractual operation of land receiving the industrial and commercial registration. It could only be registered as a professional cooperative linked by products. In 2011, this kind of exploration operation mode produced a great sensation effect, which attracted the attention and recognition of the chief officials of Chengdu. In 2012, the industrial and commercial department recognized its registration as a land shareholding cooperative. “They have done a great deed with an open mind, that is, a change of name, and they have also enjoyed the achievements of the reform”, Zhou Weisong said in an interview. Although this policy was not allowed in industrial and commercial registration at the beginning, Chongzhou made some moves through practice. After the reform came to fruition, Chengdu’s industrial and commercial department was forced to approve the registration of the cooperative with an open mind.

(4) Protect the interests of peasants, distribute dividends as per share ratio

The cooperative is converted into one share according to 0.01 mu of land joined by the cooperative, and the net operating income of agricultural land in spring is divided into dividends according to the agreed proportion. In 2010, net profits after capital were divided according to the ratio of 1:2:7, with10% of net profits used as provident fund, risk fund and working expenses, 20% of net profits used as commission for professional agriculture managers, and 70% of net profits used for dividends for members’ land shares. In 2011, the net operating income was used for land shares after paying the operation fee of 100 yuan/mu (200 euros per hectare) for modern professional agriculture managers and retaining 20 yuan/mu (40 euros per hectare) for provident fund.

(5) Unified operation to improve the efficiency of agricultural production.

The cooperative elects the executive board and the supervisory board in accordance with its articles of association. The executive board is responsible for production and operation and decides “what to farm and how to farm”. The executive board decided to employ Zhou Weisong, a professional manager of modern agriculture, as the production manager, and signed a contract with him on production indicators, production costs, awards and compensation. He was responsible for implementing order production, implementing the “three unified purchases” of seeds, fertilizers and pesticides, and unify machine farming, machine prevention, machine harvest and operation according to the agricultural public brand standards and quality standards.

(6) Use reform outcomes to obtain mortgage loans for further development

After the industrial and commercial registration, Yangliu Land Shareholding Cooperative applied the “Rural Land Operation Warrant” for 101.27 mu (6.75 hectares) of land from Chongzhou Rural Development Bureau. The cooperative used the obtained land operation right as a mortgage loan to develop characteristic and efficient agriculture. On December 1, 2010, the cooperative mortgaged the 5-year operation right of 101.27 mu (6.75 hectares) of land and obtained a loan credit of 160,000 yuan (22,088 euros) from Chongzhou Agricultural Commercial Bank. The first batch of loans 60,000 yuan (8,283 euros) were used for the production of morel and wheat in 2011 and the principal and interest were repaid in April 2011. On December 1, 2011, another loan of 100,000 yuan (13,805 euros) was made for the cultivation of morel and the production of wheat and rape in 2012, and the principal and interest were repaid in April 2012.

5.4.2 Governance structure of cooperatives

The land shareholding cooperative take shares with the right to contractual operation of rural land from the peasant households. The cooperative gathers the land. The members of the

cooperative set up a representative assembly of the members of the cooperative. The Executive Board and the Supervisory Board are elected through the representative assembly of the members of the cooperative. The Executive Board is responsible for the production and operation decisions of the cooperative, and the Supervisory Board is responsible for supervising the implementation of production and operation, financial revenue and expenditure. Cooperatives employ professional agriculture managers to farm for cooperatives, distribute profits according to the standards agreed in the employment contract, and manage the production process with the Executive Board and supervise the Supervisory Board. The ultimate goal of setting up a land shareholding cooperative is to solve the problem of who will farm in the future, let more people go out to work to increase their income, promote stable grain production, high yield, high agricultural efficiency and increase peasants’ income, and finally realize large-scale, mechanized and intensive grain production. The land shareholding cooperative formulates the articles of association. According to the articles of association (see Annex G for details), the governance structure of the cooperative is as Figure 5.3.

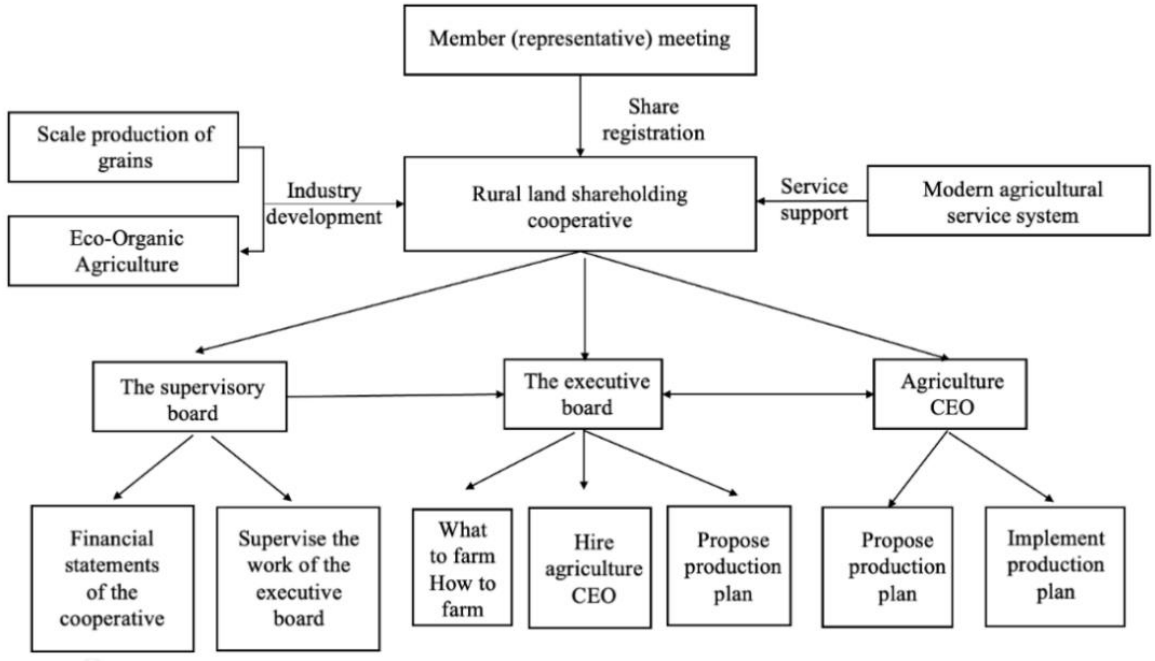

Figure 5.3 Governance structure of Yangliu Land Shareholding Cooperative

5.4.3 The motivation mechanism of cooperatives

(1) Motivation of cooperative members

1. A stable income from food economy without losing the land: The development of land cooperatives stems from the fact that peasants who join the cooperatives can obtain stable income from land without directly engaging in land production and operation. In 2013, the

cooperatives planted barley and rape with a dividend of 328 yuan per mu (643 euros per hectare), and the rice yield was 576 kilograms per mu (8,229 kilos per hectare), which was 87 kilograms higher than those peasants who did not join the cooperatives. The dividend was 569 yuan per mu (1,122 euros per hectare), and each member received a dividend of 897 yuan (124 euros) a year. Peasants received a stable income from food economy.

2. Increasing income from migrant works: There is an increase of 37 cooperative members being transferred to cities for migrant works, 52 short-term workers became long-term workers, and the average household income increased by around 6,000 yuan (828 euros). It can be said that taking the operation right as a share to join a cooperative reduces the restriction of land on peasants to a certain extent. It is conducive to the increase of their income.

3. Wage income for working in the cooperative: In 2013, the cooperative spent 287 yuan per mu (566 euros per hectare) on wage costs, totaling 145,222 yuan (20,049 euros) on labor wages. Cooperatives provide a large number of work opportunities, and peasants who do not go out to work increase their income by working in cooperatives.

(2) Motivation of cooperatives

The development of cooperatives originates from changes in the production and lifestyle of the cooperative members, the inefficient agriculture and unmanned farming, and the collective economic benefits from cooperative operation of provident funds and public welfare funds. With exploration and practice, it is found that cooperatives have their own vitality. It integrates peasants and professional managers, making cooperatives a platform for new agricultural production and operation methods, and it has the vitality of self-development.

(3) Motivation of professional agriculture managers

The income of professional agriculture managers is divided into professional income such as agricultural labor, agricultural machinery and seedling raising provided by cooperative organizations, and remuneration and incentive income of cooperatives. In 2013, Yangliu Cooperative signed an agreement with professional agriculture managers to withdraw 20% of the net operating profits to pay the employment fee of professional agriculture managers, 10% of the provident fund and 70% of the land equity dividends when the rice output is more than 450 kilograms and the wheat output is more than 250 kilograms (If the output didn’t meet the amount stipulated in the contract, the agriculture manager should compensate for the loss.). In 2013, the cooperative production manager received 11,480 yuan (1,585 euros) in income from agricultural machinery and seedling raising. The cooperative distributed the dividend after deducting the principal at the rate of 1:2:7. The professional manager received 94,761 yuan (13,082 euros) in planting remuneration. That year, he received a total income of 106,241 yuan

(14,667 euros). Professional managers increased their income through large-scale production. Their income was guaranteed, higher than those working in the cities, and they could also take care of their families. By the end of 2013, seven young college students under the age of 30 had taken their posts through competition, and professional agriculture managers had become a profession full of vitality.

5.4.4 Operating mechanism of cooperatives

Peasants use the land operation right to set up shareholding cooperatives. The Executive Board exercises the right to operate on behalf of the peasants. The Supervisory Board supervises and the professional agriculture managers are responsible for the implementation. On the basis of completing the certification of rural land ownership, Yangliu Cooperative actively promotes the innovation of agricultural operation system and mechanism, explores and practices the “1 + 4” modern agricultural development mode with land share cooperation as the core and the four service systems of agricultural science and technology service, agricultural socialization service, agricultural public brand service and rural financial service as the support. It has fairly solved the problems of “who will farm” and “how to farm”, promoted the large-scale production of grain, promoted the transformation of agricultural development mode, and created a new situation of food and agricultural production. Yangliu Cooperative is the starting point of the exploration of the “1 + 4” new agricultural operation system in Chongzhou. It is an integrated system practice.

(1) Operation decision-making

The Executive Board of the cooperative carries out daily work such as production and operation on behalf of its members, and puts forward “what to farm” and specific plans for production and operation. The Executive Board of the cooperative shall discuss and decide with the members’ meeting, fully respect the opinions of the members, and allow the members to participate in the whole process of production and operation decision-making.

(2) Production operation

First, the Executive Board of the cooperative shall employ professional agriculture managers to engage in production, operation and operation, and sign agreements on output, expenses, awards and compensation with professional agriculture managers. Different cooperatives make certain agreed adjustments and modifications according to the actual situation of cooperatives. For example, one cooperative would require professional managers to pay a certain deposit in advance as a guarantee.

The second is that the professional manager puts forward the specific implementation

proposals of “how to farm”, production cost budget, output index according to the decisions made by the Executive Board on planting varieties and development projects, and submits them to the Executive Board for discussion and approval, and publicizes them in the publicity column of the cooperatives, then organizes the implementation after the members have no objections.

Third, cooperatives adopt the “three unified purchases” of seeds, fertilizers and pesticides, and the “four unified” services of machine farming, machine prevention, machine harvesting and machine insertion, which reduces the production cost by 100 yuan per mu (197 euros per hectare).

(3) Agriculture CEOs

In 2013, based on the principle of “ training for needs, training for better performance, training for higher efficiency”, Chongzhou set up “four platforms” for the training of professional agriculture managers, talent operation, talent development and policy support, established and improved the “double training” mechanism for professional peasants, created a good environment conducive to the cultivation and development of professional agriculture managers and professional peasants, and greatly solved the problem of “who will farm”. At present, 1,460 professional agriculture managers and more than 4,500 professional peasants have been trained respectively. At the same time, Chongzhou encourages professional agriculture managers to join the pension fund system, with the government providing a subsidy of 60% of the total amount, which relieves professional managers of their retirement worries.

(4) Supporting services

Provide supporting services like agricultural science and technology services, socialized professional services and branding service. The development of the agriculture industry cannot develop without financial support. Yangliu Cooperative pushed forward the reform and initiated the country’s first loan for the right to contractual operation of land. There were obstacles at the very beginning of loan application. Cooperatives are not legal entities and have no collateral, otherwise they need guarantees to get loans. Zhou Weisong describes about agricultural financial services in the interview:

Zhou Weisong, “*Everyone thinks that when the mortgage company comes, things will be different. Then we decide to try to negotiate with the bank. Tell the bank, what are you afraid of, 100 mu of land (6.67 hectares) to borrow a loan of 50,000 yuan(6,903 euros), 60,000 yuan (8283 euros), still worried about not being able to afford it? How about give it a try? Give some support on agriculture development, rural areas and peasants. The president of that bank (Chongzhou branch of Chengdu Agricultural Commercial Bank), from my perspective, is a man of vision. Let us grant the loan anyway. We are advocating reforms. Why do not we give it a try?*

But all the procedures need to be strictly followed in accordance with the bank's loan application requirements. If this is successful, we can also copy and promote it.”

Zhou Weisong, *“In the end, they creatively imitated the format and content of the right to contractual operation of land and issued land operation warrants to the cooperatives. According to the data from the bank, all the contractual operation rights of each household have been mortgaged, and all 31 peasants have signed, taken photos, and it was happening, the loan was granted.”*

In addition, Chongzhou explores ways to enhance the reputation of professional managers' certificates. Professional agriculture managers who have obtained the “Professional Manager Qualification Certificate” and are serving on the position can obtain direct credit loans (primary 100,000 yuan/13,805 euros, intermediate 200,000 yuan/27,610 euros, senior 300,000 yuan/41,415 euros) from banks with certificates, and enjoy the discount support from the government, which further stabilizes the team of professional managers and stimulates their enthusiasm for agriculture operations. To effectively resolve risks such as natural disasters, Chongzhou expands the coverage of policy-based agricultural insurance and. The coverage rate of land shareholding cooperatives has reached 100%, thus establishing a guarantee system for cooperative agricultural production.

5.5 Performance of institutional innovation

5.5.1 Economic performance

The ultimate goal of institutional change is to seek the best performance (H. Zhang, 2002). By 2017, there are 246 land shareholding cooperatives in Chongzhou, with 316,000 mu (21,067 hectares) of contracted land, accounting for 61% of the city's farmland. 92,000 peasant households have joined the cooperative, accounting for 61% of the city's peasant households. The moderate scale operation rate of farmland reached 75%, the proportion of peasant households joining the cooperative reached 84.6%, and the coverage rate of agricultural standardized services reached 92%. Through the development of land shareholding cooperative operation, the collective ownership of land has been adhered to, peasants' contractual rights have been stabilized, land operation rights have been liberalized, and the separation of three rights has been realized. At the same time, peasants' decision-making rights and income rights have been guaranteed, thus truly enabling peasants to “leave the land without suffering loss of interests”. The output of rice, the main grain crop, has shown a steady rising trend since 2013.

The yield of rice has increased year by year, especially in the rice producing areas dominated by the co-operation system, with the yield reaching 575 kilograms per mu (8,214 kilograms per hectare). 259,000 rural labor force has been transferred to cities for employment, the per capita net profits of peasants has reached 19,543 yuan (2,698 euros), and the per capita net profits of peasants in the city has increased by an average of 16.5% in the past seven years.

Compared with the traditional family operation of peasants, the average yield of rice planted by professional agricultural managers increased by 10% and more than 55 kilograms per mu (785 kilograms per hectare) in 2017, and the input of means of production and the cost of mechanical farming machine decreased by 15%, about 90 yuan (12 euros). There was an increase of 2100 yuan per mu (4,143 euros per hectare) in 2017 and the rice price was increased by more than 50%.

In 2017, the per capita annual income of professional managers in the city has reached over 60,000 yuan (8,283 euros). On average 75 yuan per mu (148 euros per hectare) is retained as cooperative provident fund; after recovering the production cost, the peasants who join the cooperative directly increase their income by about 545 yuan per mu (1,071 euros per hectare).

5.5.2 Social effect

Chongzhou’s innovative practice has produced a major institutional supply and a social impact on the development of modern agricultural production and operation in China. It is a grassroots innovative experiment upgraded into a “national plan” and finally institutionalized to a national modern agricultural operation system. The practice were fully affirmed by Wang Yang, then member of the Standing Committee of the Political Bureau of the Central Committee, Wang Dongming, secretary of the Provincial Party Committee, and relevant officials such as the Central Political Research Office, the Central Agricultural Office, the National Development and Reform Commission, and the Ministry of Agriculture, and became the site for the “China On-site Conference to Accelerate the Transformation of Agricultural Development Mode”.

In April 2014, Chongzhou “Agricultural Co-Operation System” was affirmed by Zhang Gaoli, then member of the Standing Committee of the Political Bureau and Vice Premier, and Wang Yang, Vice Premier of the State Council. In 2015, then member of the Standing Committee of the Political Bureau and Vice Premier Wang Yang and Minister of Agriculture Han Changfu spoke highly of the system at the on-site conference.

The Chongzhou practice has won the “2016 Sichuan Top Ten Reform, Transformation and Development Case Nomination Award” and was included in the “Selected Cases of Central Reform” and “Typical Cases of Sichuan Province Reform Pilot”. CCTV, People’s Daily,

Guangming Daily, Economic Daily and other authoritative mainstream media have repeatedly publicized and reported on it, providing important examples and beneficial enlightenment that can be learned and replicated to speed up the transformation of agricultural operation mode.

In 2019, the first episode “Vigorous Land” of the documentary “China’s Grain Miracle” jointly produced by the Central Radio and Television Station and the Ministry of Agriculture and Rural Affairs was broadcast on CCTV. The “Agricultural Co-Operation System” was introduced as a typical case in the program.

In January 2022, the authoritative official media People’s Daily Online made a special report on Chongzhou’s institutional innovation under the title of “The Force to Change China: The Great Creation of Billions of People with Vigorous Vitality”. Cai Fang, former vice-president of the Chinese Academy of Social Sciences, said, “This is a great reform. It is as influential as the ‘Household Responsibility System’.” and “This is a historic change in China’s agricultural operation”. Ye Xingqing, director of the Rural Economic Research Department of the Development Research Center of the State Council, said: “The separation of three rights liberates peasants from the land, so that they can transfer the land to professional operators and new business entities. Thus, the agricultural productivity is greatly improved.”

5.5.3 Stakeholder satisfaction survey

5.5.3.1 Satisfaction questionnaire design and distribution

In order to further study the performance of institutional innovation, we conducted a satisfaction survey on the stakeholders of 50 land shareholding cooperatives in Chongzhou in March 2019. Please refer to Annex H for the questionnaire. The implementation plan: 1) the total number of samples to be distributed: 2200; 2) distribution of questionnaires: 50 members of the Executive Board, 50 members of the Supervisory Board, 50 professional managers and 50 representatives of social enterprises, totaling 200; 50 cooperatives were distributed to peasants joining the cooperative, 40 copies per cooperative, totaling 2,000 copies. 3) Organization method: The first step is to select 50 cooperatives (1 member from the Executive Board, 1 member from the Supervisory Board and 1 professional manager) and 1 representative of 50 social enterprises, totaling 200 people, have a mobilization meeting and fill in the questionnaire. The second step is to ask professional managers to distribute 40 questionnaires to peasants in their cooperatives respectively. 4) Fill in the questionnaire by scanning the QR code of the questionnaire website, and there is no need to answer the questionnaire on paper. There is a total of 51 QR codes, of which 200 people use one QR code at the meeting and fill in the questionnaire at the venue.

The remaining 50 QR codes, each one is corresponding to a professional manager, whether the professional manager has completed 40 samples online can be monitored.

2200 questionnaires were handed out, 1876 were collected, with a collection rate of 85.3%. Among the questionnaires collected, 1403 were valid, with an effective rate of 74.8%. Table 5.1 shows the demographics of respondents.

Table 5.1 Demographics of the respondents

Characteristic variable	Variable description	Frequency	Percentage
Gender	Male	806	57.5%
	Female	597	42.5%
Age	18-29	44	3.1%
	30-39	155	11.1%
	40-49	335	23.9%
	50-59	457	32.6%
	over 60	411	29.3%
Education level	Primary school	461	32.9%
	Junior high school	690	49.2%
	Senior high school/ Vocational high school/ Technical secondary school	217	15.5%
	Collegial	32	2.3%
	Graduate schooling	2	0.1%
Identity(ies) in the land shareholding cooperative	Peasant joining the LSC	1367	97.4%
	Director/Member of the Executive Board	22	1.6%
	Director/Member of the Supervisory Board	15	1.1%
	Agriculture CEO	48	3.4%
	Socialized service enterprise	9	0.6%

5.5.3.2 Descriptive statistical analysis

Shown in Annex I, overall, respondents’ satisfaction rate with various indicators is at a relatively high level. Date shows that the average value is concentrated between 5.6 and 5.66, and is between 93.3 and 94.3 in percentile.

Through the analysis of the average satisfaction rate of the first-level indicators, it can be

seen that all respondents have the highest satisfaction rate with the two indicators of the role of agricultural managers and the effect of policy operation, reaching 5.66. Secondly, the satisfaction rate with the index of policy guarantee is also high. Respondents’ satisfaction rate with operation and governance structure is the lowest, only 5.6.

In Table 5.2 below, we calculate the mean and standard deviation of each sub-indicator to study the differences between the sub-indices, and find that within different sub-indicators, their distributions vary. We find that compared with other indicators, there is a large inconsistency among the participants in the satisfaction of agricultural e-commerce and the role of the board of supervisors, and the average of the two is significantly lower than other indicators. It can be inferred that respondents are more disapproval of the role the agricultural e-commerce and the Supervisory Board play in land shareholding cooperatives.

Table 5.2 Mean, variance and standard deviation of satisfaction rate

Sub-index	Mean	Standard deviation
The role of the Executive Board	5.64	0.662
The role of the Supervisory Board	5.57	0.729
Reasonable structure of the cooperative	5.59	0.639
Peasants actively participating in operation	5.58	0.679
Financial disclosure	5.62	0.632
The role of the CEO	5.65	0.606
CEO training	5.68	0.577
CEO Incentive	5.66	0.594
Agricultural science and technology	5.68	0.566
Agricultural professional services	5.65	0.590
Agriculture inputs	5.66	0.608
Agricultural branding	5.59	0.669
Agricultural e-commerce	5.54	0.746
Agricultural informatization	5.63	0.620
Property rights mortgage	5.54	0.696
Agricultural insurance	5.61	0.668
Rights confirmation and issuance	5.61	0.696
Grain subsidy	5.68	0.610
Lowest price protection	5.64	0.674
Income increase	5.67	0.609
Reasonable income distribution	5.66	0.607

1) Satisfaction rate of cooperative governance structure

As is shown in Annex I, we can find that among the major indicators of governance structure, 70.76% of the respondents agree with the role of the Executive Board in the cooperative governance structure, significantly higher than the satisfaction rate with the role of the Supervisory Board in the land shareholding cooperatives and with the cooperative governance structure. At the same time, 0.14% strongly disagreed with the role of the

Supervisory Board in the land shareholding cooperative, which was twice as much as the role of the Supervisory Board and the reasonable governance structure of the cooperative.

2) Satisfaction rate of the cooperative operation

From Annex I, it can be found that, relatively speaking, the scores of major categories of operation indicators are not very high. Respondents have different opinions on the active participation of peasants in the operation of land shareholding cooperatives and the important role of financial disclosure in the operation of land shareholding cooperatives. Through comparison, we notice that the majority of the respondents agree that financial disclosure plays a role in the operation of land shareholding cooperatives, and only 0.93% of the respondents disagree, most of whom slightly disagree. On the other hand, for the satisfaction survey of peasants who have actively participated in the operation of land shareholding cooperatives, it is found that 3% of the respondents either strongly disagree, or disagree, or slightly disagree, far exceeding the sub-index of financial disclosure. Therefore, the mobilization of peasants to participate in the operation of the land shareholding cooperative plays a very important role in improving the satisfaction rate of the operation of the “Agricultural Co-Operation System”.

3) Satisfaction rate of the role of the professional manager

As can be seen from Annex I, in the analysis of the three sub-indicators under the first-level indicators of professional agriculture managers, we find that the scores of the role of professional agriculture managers, the necessity to train professional agriculture managers and role of the incentive policy for professional agriculture managers in stabilizing the team of professional agriculture managers are relatively consistent, and the proportion of “satisfied” and “very satisfied” is between 96% and 97%, accounting for a very high proportion.

4) Satisfaction rate of socialized service of cooperatives

In Annex I, we analyze the 8 indicators of socialized services and find that the satisfaction rate of the respondents of the important role agricultural science and technology playing in the output of land shareholding cooperatives, the important role agricultural professional services (agricultural machinery, drying and storage) playing in the output of land shareholding cooperatives, and the important role the quality of agricultural inputs (seeds, pesticides, fertilizers) playing in the output of land shareholding cooperatives, is the highest. The satisfaction rate of the roles of rural e-commerce in the product sales and agricultural brand marketing in the income increase of the land shareholding cooperative, is the lowest.

5) Satisfaction rate of the policy support

From Annex I, we can see that in terms of policy guarantee evaluation, the confirmation and certification of contracted land has played an important role in the enthusiasm of peasants

to participate in land shareholding cooperatives, the subsidy for grain scale planting has played an important role in the operation of land shareholding cooperatives, and the minimum protective price for grain purchase has played an important role in the operation of land shareholding cooperatives. The satisfaction rate of these three indicators has reached more than 98%, of which the proportion of people who hold very much agreement is above 69.4%. For grain scale planting subsidies, the proportion of “strongly agree” with the important role in the operation of land shareholding cooperatives is as high as 73.11%. It can be seen that the policy support has played a great role in the effective implementation of the agricultural co-operation system and achieved good results.

6) Satisfaction rate of the operation effect of cooperatives

From Annex I, it can be found that in the analysis of the operation effect of the “Agricultural Co-Operation System”, all participants have a high degree of approval for the land shareholding cooperative to improve income and reasonable income distribution, with a “extremely satisfied” proportion exceeding 70%. From this, we can draw a conclusion that the “Agricultural Co-Operation System” effectively organizes all participants in the form of land shareholding cooperatives. At the same time, through a certain system and mechanism design, it greatly increases the income of peasants and obtains relatively good operation performance.

5.5.3.3 Satisfaction survey conclusion

To sum up, we can find that the “Agricultural Co-Operation System” is an institutional innovation and has achieved good institutional performance. The participants of the “Agricultural Co-Operation System” are all very satisfied with the implementation effect of the policy innovation. Through the implementation of the “Agricultural Co-Operation System”, rural land has been intensively and efficiently utilized, large-scale operation of land has been realized, land abandonment and non-agricultural and non-grain trends have been prevented, which is conducive to ensuring China’s food security to a certain extent and has strong social benefits. On the other hand, for peasants, through the form of land shareholding cooperatives, the land operation right can be released under the condition that their contractual rights remain unchanged, and dividends can be obtained through the form of setting up cooperatives at the price of the operation right to increase agricultural income. Moreover, for peasants who go out to work, the losses caused by having to temporarily stop their work due to busy farming can be avoided, and the comprehensive income of peasants can be increased. At the same time, after the formation and practice of the “Agricultural Co-Operation System”, the development and evolution of rural economic organizations have also shown a trend of diversification, and more

and more supporting organizations have emerged. This diversification is not only reflected in the type difference between formal economic organizations led by the government and informal organizations established by the private sector, but also in the ownership form, scale level, organizational structure, service function and other aspects of economic organizations, which together enrich the provision of rural operation services and realize the expansion of benefits of all participants.

In summary, the system incentives generated by the new “Agricultural Co-Operation System” are diversified and self-growing, bringing new agricultural surplus or incremental accumulation, which is a win-win situation for rural areas, agriculture, peasants and agricultural service providers. At the same time, this institutional innovation has greatly improved the allocation efficiency of resources of all parties, reduced the transaction costs of decentralized operation, optimized the operation structure of agriculture through cooperatives, and promoted the all-round development of peasants, agriculture and rural economy.

5.6 Realization of institutional innovation: the “3 in 1” “Agricultural Co-Operation System”

In the process of solving the “four constraints and three dilemmas” in agricultural production and operation, Chongzhou’s continuous innovation practice has finally formed a new agricultural operation mode of “land shareholding cooperative + professional agriculture manager + modern agricultural service” trinity, the “Agricultural Co-Operation System”, which has solved the following problems in China’s agricultural production and operation:

5.6.1 Solving the problem of “who will operate”: land shareholding cooperatives

In response to the problem of “who will operate”, Chongzhou has made full use of the outcomes of registration and certification of rural land contractual operation rights, boldly released the land operation rights, and took the lead in exploring the establishment of land shareholding cooperatives nationwide to solve the problem of “who will operate” in agriculture and promote the scale of agricultural operation (see Figure 5.4).

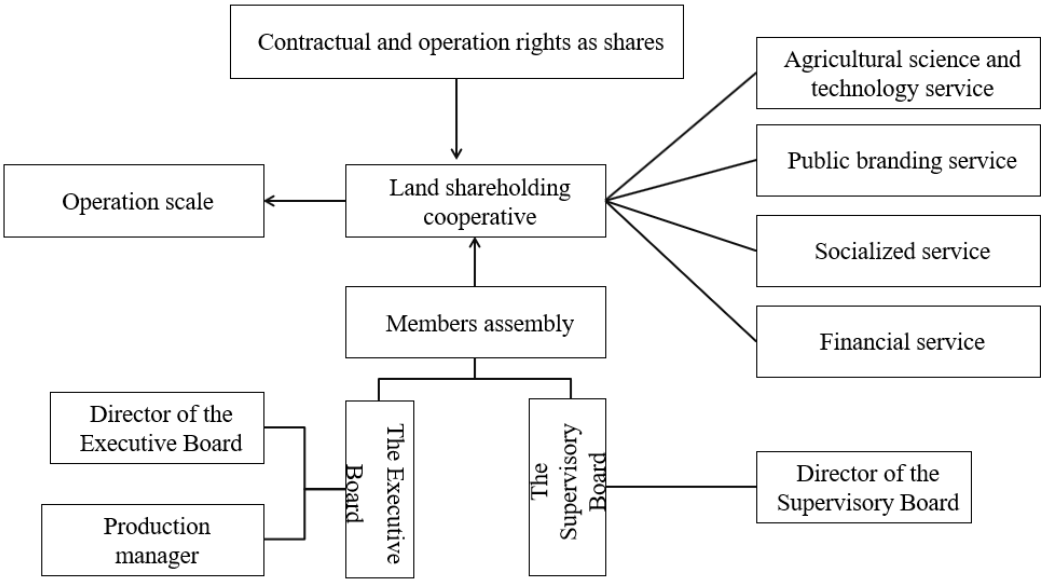

Figure 5.4 Structure of a land shareholding cooperative

The establishment and operation of land shareholding cooperatives are guided by the following principles:

First, on the premise of peasants’ willingness, ensure that peasants are willing to join in. Based on the principle of “voluntary admission, free to withdraw, benefit sharing and risk sharing”, peasants are guided to convert the land operation right into shares. Then the shareholding cooperative will receive the industrial and commercial registration. The Executive Board and the Supervisory Board, the director of the Executive Board, and director of the Supervisory Board will be elected in accordance with the Articles of Association. Various rules and regulations of the cooperative will be established and improved.

Second, cooperative members should be the main body to ensure that peasants have the final say. Drawing lessons from the modern enterprise governance system, professional agriculture managers are selected through open competition to form an operation mechanism of “the Executive Board + professional managers + the Supervisory Board” (see Figure 5.5). The Executive Board decides “what to farm” on behalf of the members who join the cooperative. The Supervisory Board is responsible for supervising the implementation of the cooperative’s financial revenue and expenditure. Professional agriculture managers are responsible for “how to farm”.

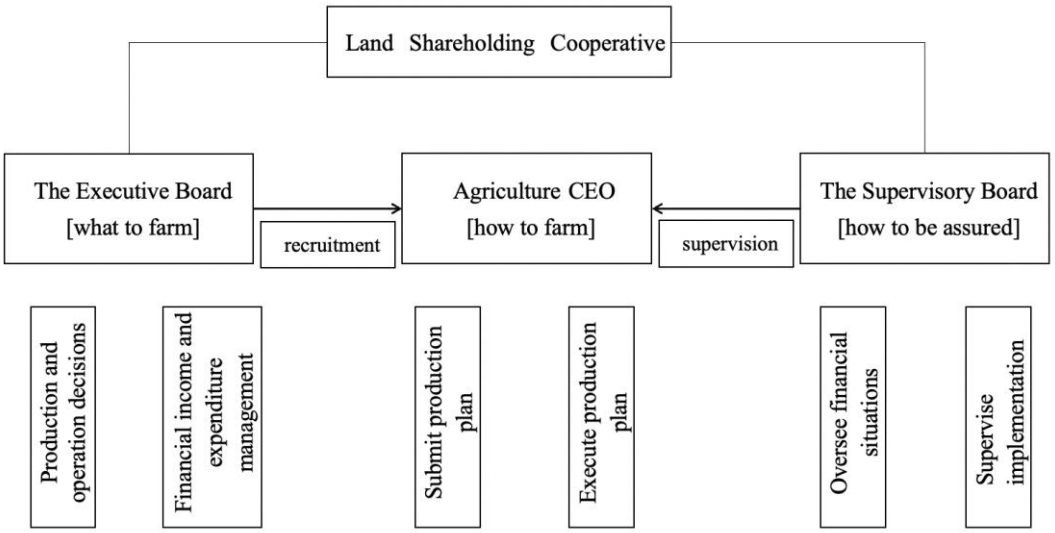

Figure 5.5 Standardized operation mechanism of land shareholding cooperatives

Third, it is guaranteed by the binding of interests to ensure the common interests of all participants. In line with the principle of multi-party sharing of operation income and flexible and diverse distribution methods, professional managers and members of the cooperative will jointly negotiate and determine to ensure the income of cooperative members by means of proportional sharing of operating net profits, guaranteed income plus second-time dividends, and over-production bonus. (See Figure 5.6).

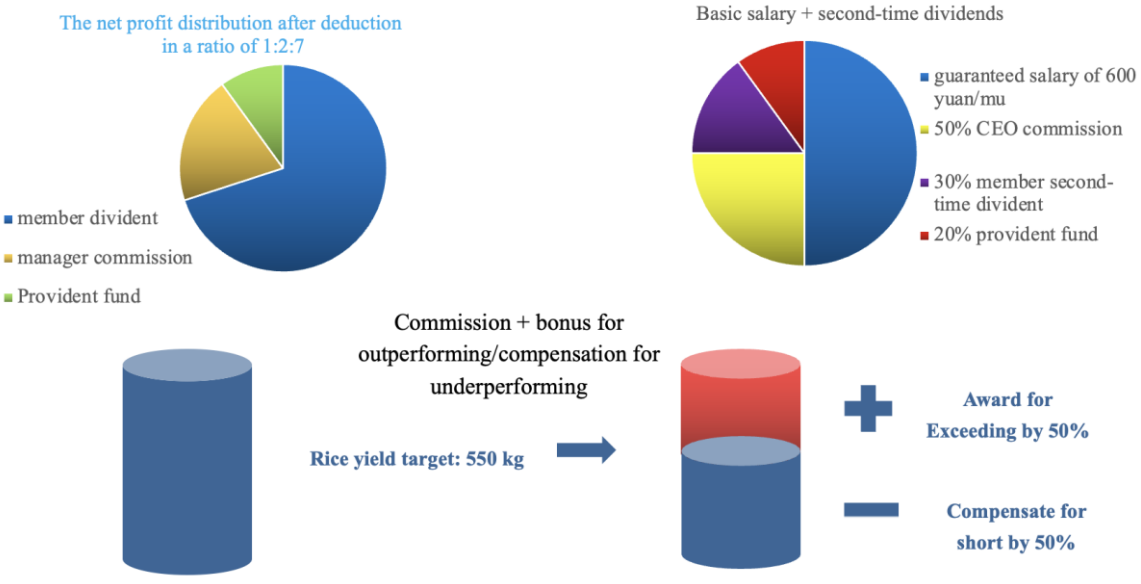

Figure 5.6 Profit distribution mechanism of land shareholding cooperatives

5.6.2 Solving the problem of “who will farm”: professional agriculture managers

In response to the question of “who will farm”, Chongzhou has cultivated new professional

peasants and promoted the specialization of agricultural operation. Based on the principle of “training for needs, training for better performance, training for higher efficiency”, Chongzhou set up “four platforms” for the training of professional agriculture managers, talent operation, talent development and policy support to cultivate a group of new professional peasants, professional agriculture managers (agriculture CEOs) to solve the problem of “who will farm” and promote the specialization of agricultural operation (see Annex J). On one hand, establish the breeding mechanism. Select college and secondary school graduates who are interested in agriculture, returning migrant workers and farming experts as the training objects, establish a teaching faculty team with experts, scholars and agricultural technology promotion personnel, form the “double training” mechanism for professional peasants, and provide training for production and operation, professional skills and social service. On the other hand, improve the operation mechanism of professional agriculture managers. Establish a promotion evaluation system, operation system and assessment system for professional agriculture managers of the primary, intermediary and senior levels, and build a professional production and operation management team of “professional agriculture managers + professional peasants”. Finally, construct the incentive mechanism of professional agriculture managers. Formulate and improve the professional agriculture manager industry, social security, finance and other support policy systems, and become a national demonstration county for the cultivation of new professional peasants. Under such conditions, professional agriculture managers have gradually changed “peasants” from a previous identity cognition to a professional concept.

As of 2017, Chongzhou has cultivated 7,329 new-type professional peasants, of whom 1,883 are professional agriculture managers, managing 316,000 mu (21,067 hectares) of farmland, accounting for 66% of the city’s total farmland. It has become a national demonstration county for the cultivation of new-type professional peasants.

5.6.3 Solving the problem of “who will serve”: new agricultural comprehensive service system

In response to the problem of “who will serve”, Chongzhou has explored and constructed the “four service” system of agricultural science and technology, branding, finance and socialization through government guidance, market participation and diversified cooperation and promote the socialization of agricultural services. Especially in terms of rural financial services, Chongzhou has improved the rural property rights financing guarantee center, the rural equity transaction service center and the rural land contract circulation service center, improved the agricultural and rural investment and financing platform, explored the practice of rural

property rights mortgage loans, professional agriculture managers’ credit loans, agricultural industry risk mutual assistance and cooperative members’ fund mutual assistance, and built a rural financial service system, with a total of 2.45 billion yuan (338 million euros) of financing used for the appropriate scale operation of agriculture.

In terms of agricultural science and technology innovation, Chongzhou has made great efforts to solve the specific problems of how to transform agricultural science and technology achievements, who will generalize them, how to apply them and how to develop them. It has explored effective ways to cross “the last hurdle” of agricultural science and technology transformation, and “the last kilometer” of generalizing agricultural science and technology. It has built four agricultural science and technology service platforms “with the agricultural expert station as the transformation core, the agricultural science and technology service team as the link, the land shareholding cooperative as the application carrier, and the application value of achievements as the goal”, initially forming a new agricultural science and technology service system integrating the transformation, promotion, application and value demonstration of agricultural science and technology (see Annex K).

In response to the question of “who will serve”, Chongzhou has established service supermarkets through innovation, promoted the socialization of agricultural services, built Chongzhou Base of the service headquarters of Sichuan Agricultural University for the transformation of scientific and technological achievements and talent incubation, built two agricultural expert stations, set up 225 agricultural science and technology promotion teams, to promote the integration of “production, study and research” links of agricultural science and technology.

In terms of improving social services, through the introduction of agricultural service companies and agricultural service supermarkets to provide full-chain services such as technical consultation, labor outsourcing, field operation, seedling raising, food banks, agriculture can be effectively promoted to specialization, standardization and scale operation. Peasants’ division and differentiation of labor can be promoted, and socialized mass production can be achieved (see Annex K). At the same time, the government initiated a pilot project to purchase public welfare services and enhance the comprehensive service capability of grassroots public welfare agriculture. Social capital was brought in to facilitate the construction of rural socialized service headquarter base and 10 “one-stop” agricultural service supermarkets to meet the appropriate scale of operation for farming, planting, operation, collection, marketing and other links of diversified service needs.

In terms of improving public branding, through the establishment of a national

comprehensive agricultural standardization demonstration city, relying on Chengdu’s “Tianfuyuan” public brand, the regional brand of “Chonggeng” was launched, accompanied by enterprise brand of “Tianfu high-quality rice”. By creating these brands and further shaping the brand value of agricultural products, it is conducive to promoting the adjustment of agricultural industry structure, standardization of product standards, enhancing consumer recognition, and leading the transformation of agriculture from extensive to quality. (See Annex K)

In terms of financial service support, Chongzhou has carried out a pilot reform of comprehensive rural financial services, set up platforms of “Internet + rural finance” and “agricultural loan pass”, explored the “1 + 3 + 7” mode of rural property rights mortgage financing, promoted the free flow of agricultural production factors, effectively resolved the capital bottleneck encountered in agricultural production, guided all kinds of funds to invest in “agriculture, rural areas and peasants”, and unblocked the development channel of financial capital into the entire agricultural industry chain. Up to now, a total of 2.45 billion yuan (338 million euros) of innovative loans of rural property rights has been granted (see Annex K).

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Chapter 6: Conclusion and Discussion

6.1 Main findings

China’s reform and opening up, especially rural reform, has made universally recognized achievements. The practice of Chinese peasants has triggered great changes in the rural economic system and rapid economic development. This shows that peasants are not only adapting to the system, but also promoting the system reform (Y. Lin, 2000). The key to the success of rural reform is that peasants can operate independently to ignite their passion to start their own businesses. In the process of collectivization in China’s rural areas in the 1950s, peasants had the freedom to withdraw when they set up primary cooperatives, but when they developed into people’s communes, peasants did not have the possibility of withdrawing from the cooperative and were deprived of the right to independent farming. The difficulty in collective labor supervision led to “free riding” and laziness, which caused disastrous consequences. Discussion papers believe that without the right to quit, it may encourage peasants to work hard and help each other in the process.

Same as other regions, the agricultural operation mode of Chongzhou in Sichuan Province faces similar problems. For this reason, Chongzhou has undertaken various innovative experiments and finally develop an “Agricultural Co-Operation System” mode that involves small peasants in the development of modern agriculture.

6.1.1 Environment for institutional innovation

With the changes in the rural economic and social environment, the agricultural production and operation in Chongzhou is facing four constraints of “fragmented land, fragile labor, dispersed capital and shortage of services” and a challenge to national food security brought by non-agriculturalization and non-grain production.

Chongzhou has done many explorations to try to resolve the dilemmas. Many attempts have not achieved the expected results from inducing large producers to transfer farmland in the early stage, introducing leading agricultural enterprises to lease farmland and do contract farming, and encouraging peasants’ land cooperatives to operate independently. In 2009, after Ying Malong Company’s breakage of the leasing contract of more than 3,000 mu (200 hectares) of farmland in Qiquan Town, peasants were unwilling to take back the land and instead asked the local government to assume responsibility, thus caused certain social tension. In order to solve

the dilemma, ease the concerns of peasants and maintain the stability of agricultural production and rural development, Chongzhou was forced to undertake an innovative exploration.

6.1.2 Participants and process of institutional innovation

6.1.2.1 Participants in institutional innovation

(1) Professional agriculture managers, member peasants of the cooperative and grassroots cadres have jointly become grassroots practitioners in the formation of the “Agricultural Co-Operation System” and constitute the first action group for institutional changes.

Professional agriculture managers participated in many life cycles of institutional development, from the initial practical exploration to the gradual formation of “1 + 4 modern agricultural operation system” and then to the expansion and promotion after institutionalization. The emergence of professional agriculture managers has effectively solved the problems of “who will farm” and “scientific farming”, promoted the realization of agricultural modernization and increased the benefits of agricultural planting.

As an important participant, peasants who join the cooperative become a part of the first action group, not only directly participated in the institutional innovation of the “Agricultural Co-Operation System”, but also directly benefited from the institutional innovation. Village cadres represented by village party secretaries and village committee directors, grassroots cadres represented by agricultural development bureau cadres and staff, and township cadres all play a very important role in many aspects of institutional practice and innovation. It is exactly because of the existence of grassroots cadres that peasants can effectively organize themselves to explore new planting modes, and at the same time promote the new system and expand the economic benefits brought by the system.

(2) The local government and the central government have formed a new institutional equilibrium through policy formulation, constructed a top-down design order, and formed the second action group of institutional change.

In the process of exploring new problems, Chongzhou municipal government did not respond passively, but actively participated and guided the process. Chongzhou local government and grassroots participants appear at the starting point of institutional innovation practice almost at the same time. Here, the imposed force of Chongzhou local government is manifested as guidance, support and encouragement. After the success of the closed experiment of Yangliu Land Cooperative, the local government carried out a large-scale open experiment with great political courage and commitment. The will of the local government is manifested

in policy formulation. For example, the development and implementation of the land shareholding cooperative formulated by Chongzhou from 2012 to 2015, the promotion of the target assessment of the construction of “1 + 4 modern agricultural operation system” and various supporting documents all shape the behavior of grassroots agricultural organizations including restraint and power types from top to bottom, and promote the formation of “Agricultural Co-Operation System”. With the formation and expansion of innovation mode, the effectiveness of innovation has been proved and tested in a wide range. Chongzhou innovation has attracted the attention of the national policy decision-making departments. In many rounds of research and discussion at all levels, Chongzhou innovation has been acquiesced and recognized at the national level. In this process, the “second action group” of institutional innovation was formed. The interaction and positive feedback between the “first action group” and the “second action group” finally institutionalized the innovative practice of solving problems at the grassroots level into “No.1 central document”.

(3) The participation of experts and scholars has strengthened the influence of induced change and imposed change on institutional innovation, produced an enhanced coordinating impact, and constituted the “third action group” of institutional change.

In the process of institutionalization of the innovation of “Agricultural Co-Operation System”, the “third action group” represented by experts and scholars has played a very important role. On the one hand, the research and academic discussion of experts and scholars have provided a direct promotion for the “first action group” to finally upgrade the summary of practical experience to theory. On the other hand, it also provides theoretical support for the “second action group” to finally institutionalize the innovative practice of solving problems at the grassroots level, and provides wisdom and suggestions for policy formulation and promotion.

The formation of the innovative “third action group” has played a significant role in promoting the interaction between the “first action group” and the “second action group”. In the practice of the “Agricultural Co-Operation System”, grassroots cadres and peasants were given priority in the early stage to carry out practical exploration experience. After the exploration practice gradually achieved initial results, it attracted the research of experts and scholars from universities and scientific research institutes and gradually sorted out the exploration experience to form the “Chongzhou 1 + 4 modern agricultural operation mode”. With further expansion of the practice, the effect of the practice has gradually attracted the attention of higher-level government officials. In this background, scholars further refined the innovative practice theoretically, promoted its institutionalization process, and gradually

defined the institutional concept of “Agricultural Co-Operation System”.

6.1.2.2 The process of institutional innovation: from “1 + 4” to “Agricultural Co-Operation System”

After the Ying Malong case, the leaders of Chongzhou local government realized that, on the one hand, the “company + peasant household” mode cannot simply conduct land lease operation, and social capital entering agriculture sector cannot simply rent the land and kick peasants out of agricultural operation. On the other hand, in view that a large number of peasants migrate to cities to work, the increasingly serious problem of idle land must be practically solved. Thus, Chongzhou initially took a bold and innovative experiment in agricultural operation in Longxing Town, Chongzhou.

In 2010, 30 of the 33 households in 15 groups in Liba Village, Longxing Town registered and established the first land shareholding cooperative, namely Yangliu Land Shareholding Cooperative (hereinafter referred to as “Yangliu Cooperative”), with 101 mu (6.75 hectares) of farmland contracted at a price of 900 yuan (124 euros) per mu. Zhou Weisong, a staff member dispatched by the Municipal Agricultural Development Bureau, was the professional manager of the cooperative and was later called “professional agriculture manager” or “agriculture CEO”. Based on the successful closed experiment of Yangliu Cooperative, “Qianfeng Cooperative” and “Qiangong Cooperative” were established in Qiquan Town in 2011 and 2013, and got registered in the Industrial and Commercial Bureau. On this basis, they carried out innovative exploration of “1 + 4” modern agricultural operation mode.

“1” refers to the land shareholding cooperative. According to the principle of voluntary admission, freedom to withdraw from the cooperative, benefit sharing and risk sharing, peasants voluntarily convert the right to contractual operation of land into shares and invest in the formation of rural land contractual operation right shareholding cooperatives. The cooperative elects the Executive Board and the Supervisory Board in accordance with the Articles of Association, as well as a director of the Executive Board and the director of the Supervisory Board, establish and improve various rules and regulations.

“4” refers to the four service systems. One is the public agricultural science and technology service system. Chongzhou municipal government has carried out “institution-city cooperation” with key agricultural scientific research institutions in the province, and has set up the first comprehensive agricultural expert station in Sichuan province to carry out research and development and pilot-scale transformation of agricultural scientific and technological achievements. The second is a market-oriented agricultural socialized service system. Adhering

to the direction of diversification of participants, specialization of services and marketization of operations, the government has given full play to the role of agricultural public service institutions and improved a new type of agricultural socialized service system that combines public welfare services with operational services and coordinates special services with comprehensive services. Third, a high-end agricultural public brand service system. Being market oriented, high-end industry oriented, science and technology supported, the system focuses on the quality and safety of agricultural products, building public brands of agricultural products, setting up a public brand service system for agriculture, and promoting large-scale, standardized, facility-based production and brand operation of agriculture. Fourth, the new rural financial service system. Chongzhou has accelerated the construction of an agricultural investment and financing platform, setting up Shuxing Investment Co., Ltd. and Shuxing Rural Property Rights Financing Guarantee Co., Ltd., building strategic cooperative relations with Chengdu Agricultural Commercial Bank and village banks, establishing rural property rights mortgage financing risk funds and industrial risk mutual funds, and promoting direct mortgage loans for land contractual operation rights and collective construction land use rights.

However, the “1 + 4” mode faces two problems. First, it ignores the importance of professional managers in cooperatives. The key to the lack of sustainable development of traditional agricultural cooperatives is the lack of entrepreneurial capacity. The new type of land shareholding cooperative tested in Chongzhou has made important innovations. Second, it ignores the deepening of agricultural division of labor and the dynamics and expandability of agricultural socialized services. With the subdivision and activation of the property rights of the contractual operation rights, the deepening of the division of labor in agriculture and diversified circuitous investments will continue to expand the operation room of agricultural socialized services.

Chongzhou’s innovative experiment actually constructed a centralized mechanism for land circulation (land shareholding cooperative system), an entrepreneurial capacity trading mechanism (professional managers) and a productive service trading mechanism (agricultural comprehensive service platform), thus forming an institutional framework for multiple participants to jointly operate agriculture. Therefore, the “1 + 4” mode was subsequently officially renamed as the “Agricultural Co-Operation System”.

The institutional concept of Chongzhou’s “Agricultural Co-Operation System” lies in that it takes collective ownership of land as the premise, household contracting as the basis, peasants as the core subject, and revitalizing the operation rights of agricultural land as the core string, and constructs a “3 in 1” mechanism, that is, having peasants voluntarily and autonomously

form land shareholding cooperatives to promote the large-scale operation of agriculture, cultivating a team of professional agriculture managers to promote the specialized operation of agriculture, and strengthening socialized services to promote the organized operation of agriculture, thus to form a new multi-subject “co-construction, co-operation and sharing” agricultural operation mode.

6.1.3 Institutional framework of “Agricultural Co-Operation System”

6.1.3.1 Cultivate three types of subjects: deepening agricultural division of labor

(1) Innovating the cultivation mechanism and establishing a team of professional agriculture managers.

Chongzhou introduces entrepreneurial capacity through the intermediary group of professional agriculture managers, and makes coordination and “judgmental decisions” while taking business risks, thus forming knowledge and division of labor in operation activities. In order to cultivate and standardize the team of professional agriculture managers, Chongzhou has explored and formulated a series of supporting operation mechanisms.

The emergence of professional managers has effectively solved the problems of “who will farm” and “scientific farming”. Compared with the family operation of peasants, the average yield per mu of rice cultivation operated by professional managers increased by 10% , more than 110 catties, and the input of means of production and the cost of mechanical harvesting are reduced by 15%, about 90 yuan (12 euros). If the opportunity cost of labor produced by peasants themselves is considered, the decrease is more than 40%. By 2020, Chongzhou has trained 2,358 professional agriculture managers, 761 of whom have obtained primary qualification certificates, 337 have obtained intermediate qualification certificates and 377 have obtained senior qualification certificates. A team of competitive professional managers who “have knowledge, understand technology, are good at operation and capable of fine management” has been established.

(2) Guide peasants to cooperate and establish land shareholding cooperatives.

Following the reform of rural property rights system, Chongzhou, in accordance with the principle of voluntary admission, freedom of withdrawal, benefit sharing and risk sharing, guides peasants to convert their land contractual operation rights into shares to join the cooperative and form an open land shareholding cooperative.

The principal-agent relationship between the cooperative and professional managers mainly adopts the scheme of dividend distribution after deducting the principal, that is, after

excluding the production cost, the remaining net income is distributed at a ratio of 1:2:7, 10% is used as the cooperative’s provident fund, risk fund and working funds, 20% is used as the commission income of professional agriculture managers, and 70% is used for peasants’ land shares and dividends, forming a close interest connection mechanism. By the end of 2018, 246 land shareholding cooperatives had been set up in Chongzhou, covering 316,000 mu (21,067 hectares) of land, accounting for 54.48% of the city’s farmland, attracting 94,900 households, accounting for 61.74% of the city’s peasant households (153,700 households).

It should be pointed out in particular that the cooperative built in Chongzhou is different from the cooperative as an independent operation entity, it is a trading device. The essential characteristics are: (1) it is neither for the purpose of production cooperation nor for the purpose of product sales, but only a centralized mechanism to form rural land operation rights; (2) it does not involve collective assets and their rights and interests sharing, nor seeking overlap with community economic organizations, but only a way to form a certain contiguous scale of neighboring land; (3) the concentration and scale of peasants’ land contractual operation rights are mainly to attract professional agriculture managers’ competitive entry. Cooperatives, then, become a trading platform for the subdivision of peasants’ operation rights and entrepreneurs’ human capital; (4) it is not the trust of agricultural entrepreneurs or agricultural enterprises to peasants’ land, nor is it a complete substitute for peasants’ operation, but it maintains the main rights and interests of peasants’ in-place control of land property rights in the principal-agent relationship between cooperatives and professional managers.

(3) Strengthen socialized services and establish a “one-stop” professional service system

Professional agriculture managers must purchase numerous social services when implementing the cooperative’s operation plan. In order to reduce the cost of outsourcing service, a “one-stop” agricultural socialized service supermarket is created and the market-oriented development of various specialized service organizations is induced.

It is through the cultivation of the above three major operation entities that Chongzhou agriculture extends from the co-operation of land to the co-operation of services, from the single operation of peasants to the independent operation of cooperatives, and then to the joint operation of cooperatives, professional managers and socialized service organizations.

6.1.3.2 Build three platforms: improve transaction efficiency

(1) Equity transaction platform: land shareholding cooperative

Chongzhou’s cooperatives are not independent operation entities, but a cooperative trading platform to form a moderate concentration of land and match the land operation with

entrepreneur operation. Its value lies in: first, it avoids the endowment effect and high transaction costs of peasants in the circulation of agricultural land. On the one hand, it retains the close connection between the subject of property rights and the object of property rights through joint-stock cooperation, thereby respecting peasants’ “personalized property traits” to land. On the other hand, it preserves peasants’ screening of professional managers and the final decision-making power of production and operation, thus satisfying peasants’ demands for in-place control and the status of operation entities; second, the concentration and scale of peasants’ land operation rights can be effective to attract the competitive entry of professional agriculture managers, cooperatives have thus become a trading platform for the subdivision of peasants’ operation rights and entrepreneurs’ human capital, and further achieve the matching of “entrepreneurial capacity” and its scale of operation services.

(2) Entrepreneurial capacity trading platform: professional agriculture manager market

The subdivision of agricultural land operation rights has formed the main body of entrepreneurs who provide “operation knowledge” as intermediate products (services), improving the knowledge division and decision-making and operation efficiency of agriculture. First, the formation of the manager market competition mechanism has effectively reduced the cost for cooperatives to find and identify agents with operating capacity. Second, the bidding mechanism and collective bargaining mechanism for multiple managers can greatly reduce the negotiation, contract signing, withdrawal and takeover costs for managers to enter. Third, the competitive entry of outstanding professional managers stimulated by the expansion of land scale avoids the drawbacks of relying on talents in the community cooperative model.

(3) Service trading platform: “service headquarters” of agricultural production

The subdivision of agricultural land operation rights has formed a productive subject-socialized comprehensive service headquarters, which provides “professional production” as an intermediate product/service, and has improved the technical division of labor and production operation efficiency in agriculture.

To sum up, the three trading platforms have expanded the room for peasants to obtain “service economy of scale” and division of labor economy through the conversion of land circulation transactions into land operation rights subdivision transactions, the matching of entrepreneurial capacity with agricultural productive service, and to a certain extent have answered the practical problem of “how to farm”.

6.1.3.3 Form three paths: to promote co-operation and multi-win

The innovative value of the “Agricultural Co-Operation System” tested in Chongzhou is shown as

follows: to cultivate a team of professional agriculture managers to promote the specialized operation of agriculture, to voluntarily form land shareholding cooperatives with peasants as the main body to promote the large-scale operation of agriculture, and to strengthen social services to promote the organized operation of agriculture. Thus, three paths of “subject cooperation, benefit sharing, and goal compatibility” have been formed, and the goal of “co-construction, co-operation, sharing, and multi-win” of multiple subjects has been achieved.

(1) Subject cooperation: The fundamental feature of the “Agricultural Co-Operation System” is that through the subdivision of agricultural land operation rights and its trading platform, a new agricultural operation organization system with multiple subjects such as land shareholding cooperatives, professional managers and social service organizations has been formed.

Chongzhou’s “co-construction and co-operation” is an ingenious organizational system arrangement: 1) It has solved the problems of land fragmentation and scattered operation, realized the concentration and scale of land, and effectively solved the dilemma of “what kind of land to farm”. 2) The decision-making control of land operation is still in the hands of peasants. Peasants jointly make operation decisions and supervise, ensuring the status of the main body of operation, ensuring that cultivated land is not abandoned, and preventing non-agricultural and non-grain production in the process of land circulation. 3) Through the property rights subdivision of operation rights and service outsourcing, on the one hand, it has captured and generated the entrepreneurial capacity and cultivated a team of professional managers; on the other hand, it has attracted a large number of young and middle-aged people to return home to start their own businesses and cultivated a new team of professional peasants, thus promoting the division of labor and specialization in agriculture, reconstructing the mechanism of agricultural technological progress, and effectively solving the problems of “who will farm” and “how to farm”.

(2) Benefit distribution: The concentration of co-operation and sharing of land, the aggregation of modern productivity factors and the co-operation of entrepreneurs have greatly improved the economy of scale, division of labor economy and cooperative surplus of agriculture, formed a “co-operation and sharing” benefit community and sharing mechanism, and effectively reduced the cost of governance. 1) Peasants can get dividends after bearing the production cost. 2) Professional agriculture managers enjoy commissions, policy incentives for scale operation and urban social security. 3) Land shareholding cooperatives withdraw provident funds and enjoy corresponding special policy support, thus strengthening the collective economy. 4) Agricultural socialized service organizations obtain operation income

and service economy of scale by undertaking outsourcing of agricultural productive services.

The vast number of peasants have been freed from the dependence of small-scale decentralized operation, and the labor force has changed from “short-term workers” to “long-term workers”. Its significance lies in: 1) In addition to going out to work and sharing the fruits of agricultural co-operation, peasants can also obtain various opportunities such as engaging in family farms, participating in professional services or labor organizations to increase income through multiple channels. 2) It has resolved the problem of part-time employment of peasants and promoted the professionalization of peasants and industrial workers. 3) The formation of land circulation mechanism and agricultural division of labor mechanism may accelerate the flow of agricultural population, thus becoming an active support force for new urbanization in rural areas.

(3) Target compatibility: Co-operation and multi-win. From the micro-subject level, the “Agricultural Co-Operation System” ensures the corresponding rights and interests of the participants and mobilizes the enthusiasm of all parties. Among them, peasants abandon the small-scale peasant economy and participate in the socialized division of labor, remaining to be the real subject of agricultural operation decision-making. Cooperatives avoid cooperation risks and improve the stability and sustainability of joint operation through operation plans and member supervision. Professional managers have realized entrepreneurship and income increase through entrepreneur operation and scale operation. Socialized service organizations have transformed agriculture from “land scale operation” to “service scale operation” through outsourcing of productive services.

From the perspective of macro policy objectives, the “Agricultural Co-Operation System” has effectively protected and rationally utilized cultivated land resources, truly implemented the policy objectives of grain production and food security, effectively guaranteed the rights and interests of peasants, and significantly enhanced the level of agricultural productivity and sustainable development capabilities. Therefore, the “Agricultural Co-Operation System” takes into account the interests of peasants, professional organizations, collectives and the state, and realizes a win-win situation of “incentive compatibility” between the operation objectives of micro subjects and the national macro policy objectives.

As an important innovation of the agricultural operation system in the new context, Chongzhou’s “Agricultural Co-Operation System” adheres to the bottom line of the institution, maintains the institutional target, cracks the bottleneck of the application of advanced science and technology and modern production methods in family operation and the weakening of the unified operation level, optimizes the allocation of agricultural resources, realizes the efficient

connection between advanced production factors such as modern material, technology and equipment, entrepreneurial capacity and operation methods, promotes the intensification, specialization, organization and socialization of modern agricultural operation, and enhances the sustainable development ability of agriculture, thus provides an example for the transformation of agricultural operation mode in China.

6.2 Discussion

6.2.1 Institutional contribution of Chongzhou practice

Small-scale peasant operation has both historical inheritance and world universality. In China, small peasants are the core subject of agricultural operation and the basic force for inheriting agricultural civilization and maintaining social stability. The large number and long-term existence of small peasants is the basic national condition of China. Therefore, it is an inevitable requirement for China’s agricultural modernization and high-quality development to realize the organic connection between small peasants and the development of modern agriculture.

The main body of Chinese agriculture is composed of scattered 230 million peasants. The decentralized and small-scale operation pattern not only confines the room for potential efficiency improvement, but also defines the endogenous constraints of introducing modern production factors. If the quality of agricultural labor force, the capacity of peasants and the scale of operation are far below the bottom line required by the level of modern productivity, scientific and technological progress with peasants as the main body is bound to be challenging. In fact, it has become an important policy choice to induce land circulation and concentration and cultivate new agricultural operation subjects to promote the scale operation of agriculture. The key to expanding the scale of operation is to induce the entry of modern production factors and improve the efficiency of resource allocation. However, the circulation of agricultural land in China is the circulation of agricultural land operation rights derived from peasants’ attachment to collective land contractual rights, and it faces multiple risks: first, if the circulation of agricultural land operation rights occurs between peasants, it is still a copy of “small peasants” with efficiency risks; second, if peasants withdraw and transfer agricultural land to other operation entities, it is bound to weaken the underlying agricultural operation system, and facing political risks; third, if peasants’ operation rights are transferred out, which is related to their agricultural operation capabilities, career choices and their land emotional preference, it may pose social risks.

In 2019, the General Office of the CPC Central Committee and the General Office of the State Council issued the Opinions on Promoting the Organic Connection between Small Peasants and the Development of Modern Agriculture, which pointed out that China has a large population with scarce land, and the endowment conditions of agricultural resources vary greatly from place to place. Many hilly and mountainous land lots are fragmented. It is not possible to fully implement large-scale operations in a short period of time, nor can all places realize centralized and contiguous scale operations. At present and for a long time to come, small-scale household operation will be the main mode of agricultural operation in China. Therefore, while encouraging the development of various forms of moderate scale operation, it is also necessary to strengthen social services for small peasants and introduce small peasants into the track of modern agricultural development.

Chongzhou’s “Agricultural Co-Operation System” provides a “third path” different from the “capital agriculture” in the United States and Japan, which is suitable for China’s national and agricultural conditions. The direct investment and self-service of family farms in the United States or Japan have the characteristics of involuted path dependence. Efficiency comes from division of labor, and the essence of division of labor is specialization and service economy. To build the organic connection between small peasants and modern agriculture, we must take the “third path” with Chinese characteristics. Its core is “serving small peasants”, that is, introducing technical funds through socialized services to improve roundabout investment, and introducing entrepreneurial capabilities and transaction organization methods through operation services, thus involving small peasants in the division of labor economy. The cultivation of the two types of participants of “production service and operation service” and the matching of circuitous investment and service contract are not only conducive to bringing peasants to modern production factors, but also can improve the modern operation level of peasants and promote their integration into the value chain of agricultural division of labor. Eventually, a new agricultural operation mode of “professional farming of peasants, social circuitous investment, outsourcing services of the capable, and competitive market transactions” will be formed.

6.2.2 Expansion of Chongzhou practice

The basic rural operation system is an important part of China’s fundamental institutional arrangements. The more than 70 years of reform in New China, from land reform to cooperative movement and agricultural collectivization, to the “Household Responsibility System”, have profoundly expressed the fundamental impact of the basic rural operation system on China’s

economy and society, especially on the countryside, agriculture and peasants. Therefore, it is of great strategic and historical significance to stabilize and improve the basic rural operation system, innovate the agricultural operation system and management system, and accelerate the transformation of agricultural operation methods.

Rural land system and “Household Responsibility System” have always been the core issues of China’s rural reform. In the process of changes in China’s agricultural operation system over the past 30 years or so, there has been almost no fundamental change in the pattern of “collective ownership, equal land contract and family operation”. With the deepening of industrialization and urbanization and the rapid flow of rural land and labor force, China’s agricultural operation pattern is facing many difficulties and major changes.

The major bottleneck in the process of China’s agricultural modernization is how to promote the transformation of agricultural operation methods and accelerate the construction of a new agricultural operation system on the premise of adhering to the basic position of family operation in agriculture. What must be attached great importance to is that if the quality of agricultural labor force, the capacity of peasants and the scale of agricultural operation are far below the bottom line required by the level of modern productivity, the related agricultural facilities and equipment, scientific and technological applications, product quality, market access, subsistence income and enthusiasm from agriculture will become increasingly unsustainable.

The diversity of regional types, the complexity of the agricultural industry and the variability of resource endowment, operation objects, market conditions and technical conditions determine that China’s agricultural operation mode and its organizational form must “adjust measures to local conditions” and “adjust measures to the environment”. It is obviously inappropriate to try to regulate with one institutional arrangement or institutional mode. It should be said that due to the “context-dependent” nature of institutional arrangements and their efficiency, each type of institutional framework in agricultural operation has its comparative advantages and disadvantages. However, it is important to note that an institutional mode is replicable, demonstrable and promotable if it demonstrates a strong capacity for self-adjustment, self-repair and self-implementation that is constantly adaptable to environmental conditions. It should be recognized that Chongzhou’s “Agricultural Co-Operation System” mode and its initial success have special environmental conditions. For example, relatively contiguous plain areas are easy to form large-scale operation, and relatively homogeneous rice cultivation is easy to form specialized and standardized production. However, this does not mean that its internal operating mechanism has geographical limitations. The core of the mode of “Agricultural Co-

Operation System” with enlightening value lies in activating the scattered and solidified operation rights of agricultural land, cultivating diversified participating operation entities, setting up mutually matching trading platforms, reducing the organizational cost of agriculture, improving the efficiency of division of labor, and enhancing the surplus of cooperation, namely “activating property rights, diversified operation, optimizing transactions, promoting division of labor, co-operation and multi-win”.

Therefore, a moderate scale of operation entities, managing professional teams, professional service organizations and their diverse and flexible matching of division of labor transactions can be used to meet the needs of various practices. To promote and perfect the innovative practice of Chongzhou’s “Agricultural Co-Operation System”, we must carry out adaptive transformation according to local conditions on the premise of adhering to the core of the mode.

Shifting from traditional agriculture to modern agriculture, promoting the transformation of agricultural operation methods and accelerating the construction of a new agricultural operation system are not only problems faced by Chinese agriculture, but also common problems faced by “small-scale peasant economy” in the world. The “Agricultural Co-Operation System” explored by Chongzhou may be an important breakthrough to the transformation of China’s agricultural operation mode and indicate an important direction for the innovation of China’s agricultural operation system and mechanism. The example of Chongzhou not only enriches the reform practice in China’s rural areas, but also provides “Chinese experience” for the transformation of traditional agriculture worldwide, which has far-reaching and extensive significance.

6.3 Research limitation and future research

There are three main research limitations and research prospects of this study. First of all, this study follows the grounded theory research paradigm, and conducts research in-depth without any presupposition and research hypothesis. In field work, through multiple rounds of in-depth interviews with many people, a large number of original data are obtained, and the collected data are openly coded, axially coded and selectively coded in strict accordance with the grounded theory research steps. By generating concepts, supporting categories, overarching categories and the core category, a theoretical model of this study is constructed and the research conclusion is reached. Through the research on the process of institutional change in Chongzhou, we find that in addition to the two forces of top-down imposed institutional change

and bottom-up induced institutional change that have been studied in the literature, there is also a third type of institutional change force, that is, the coordinating enhancement impact of scholars’ theoretical innovation research on the interaction of top-down and bottom-up forces. This finding is obtained in a natural state, through direct contact with the researcher and the grounded analysis process of the research under multiple rounds of face-to-face in-depth interviews. There is no preset or expectation in advance. This finding is “unexpected” but also “reasonable”. The achievement of this important research finding is precisely because that this research adheres to the “grounded spirit”, abandoning any theoretical hypothesis before the research, immersing deeply in the phenomena and practical experiences emerging in reality without any preset, and constructing new theories and models through constant comparison analysis.

Following the theoretical saturation testing approach of grounded theory, a theory reaches saturation when new data no longer yields new theoretical insights. In our in-depth interviews, when the concept of scholars and their theoretical contributions emerges, more ideal and solid research should include in-depth interviews with scholars. Since the field work of this study coincided with the outbreak of the COVID-19 epidemic, the physical space of field work was limited. Therefore, this study does not conduct direct in-depth interviews with scholars and their theoretical innovation research, which may become a new force in institutional innovation, but on the basis of fully studying the existing literature of relevant scholars, adjust the existing research design, extract multi-party information through in-depth interviews with existing theoretical samples, pass the triangulation test, and finally include scholars as the third force of institutional change in the construction of the theoretical model. The lack of direct in-depth interviews with scholars who participated in the institutional innovation of the “Agricultural Co-Operation System” is both a regret and a limitation of this study. Future research will include in-depth interviews with the scholars, and study their motivation to participate in institutional change and their interaction with other institutional change forces.

Second, this research focuses on the institutional innovation of Chongzhou’s “Agricultural Co-Operation System”, mainly on the process of institutional change, studying how a grassroots innovation practice was “institutionalized” into a new agricultural operation system in China. Therefore, the “Agricultural Co-Operation System” being written into the “No.1 central document” is regarded as the cut-off point for the completion of the institutional change process and the achievement of a new institutional equilibrium. In view of this, this study does not include the nationwide promotion and economic performance of the “Agricultural Co-Operation System” as a new agricultural operation system after it was written into the “No.1

central document”, which leaves a direction and room for the follow-up research. In the future, we can pay more attention to the economic performance of the “Agricultural Co-Operation System” in various regions, study the vitality and sustainability of this institutional innovation, and provide empirical evidence for the optimal design and improvement of the system.

Finally, concerning about the research method, this study adopts the grounded theory approach, which is essentially a qualitative research method. This research method is chosen because institutional innovation and institutional change are complex social phenomena and social behaviors involving multiple agents. It is necessary to understand not only the event itself, but also the sociocultural and historical background of the event and its relationship with other events. The study of the connection, wholeness and relationship between events is very important. Therefore, qualitative research is more suitable for this study, and conductive to achieving the research purpose and obtain high research validity. Future research can involve quantitative empirical research after the connotation and extension of this study have been well explained and widely supported: describe variables and test the causal relationship between variables, quantitatively verify the theory, and further illustrate the institutional effectiveness and correlation of the “Agricultural Co-Operation System” through large sample data collection and data analysis. Combining qualitative research and quantitative research, we can conduct high-quality research on the “Agricultural Co-Operation System” with higher validity and reliability in terms of research methods and research techniques.

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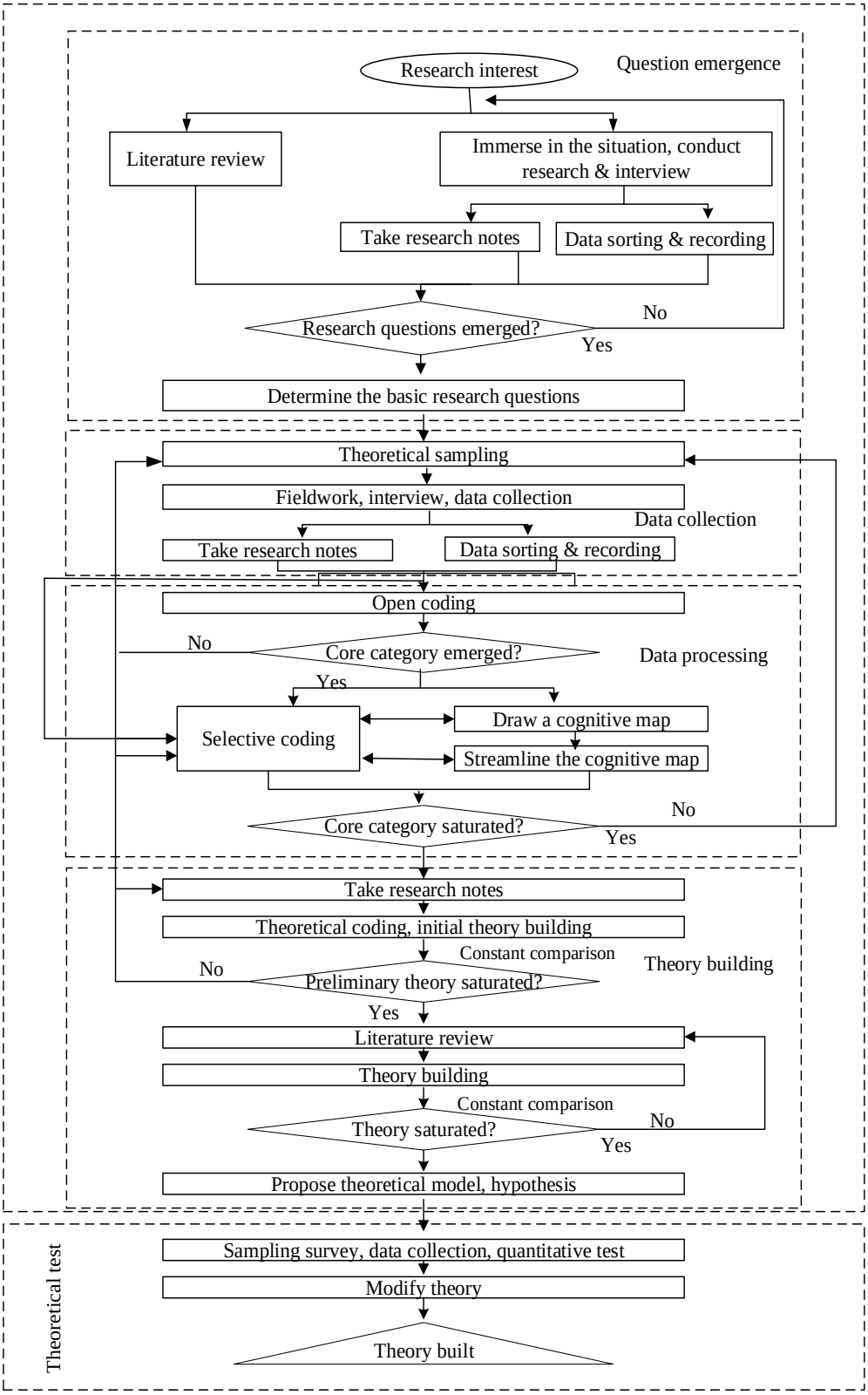
Annex A: The Research Paradigm of Grounded Theory Research in China



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Annex B: Outline of In-Depth Interviews

1. Interview Outline: Mr. Zhao

Part I: Interviewee Information

Q1: Please introduce yourself, your position changes or status changes since 2009.

Part II: A Failed Practice: Ying Malong company breaks contract and withdraws the lease

Q2: Please restore the Ying Malong Company’s breach of contract and rent withdrawal in 2009.

Q3: What do you think is the reason for Ying Malong’s breach of contract and rent withdrawal? What are the roles of companies, peasants and the government in this, and what have they done right and what have they done wrong? (“The company broke the contract, the peasant broke the promise, and the government made a mistake”; the failure of “company + peasant household”)

Q4: Please restore what happened during the transition period from the breach of contract and rent withdrawal of Ying Malong Company to the establishment of “Yangliu Land Shareholding Cooperative in Longxing Town” in 2010.

Part III: Bold Attempt: Yangliu Land shareholding Cooperative in Longxing Town

Q5: Please restore the establishment process of “Longxing Town Yangliu Land Shareholding Co-operative” in 2010, and please introduce the reasons, motives, sponsors of the establishment in detail.

Q6: Please introduce how the “land operation rights are priced into capital and shares in the cooperative” is implemented? How is the quantitative confirmation of equity implemented?

How can peasants voluntarily buy shares with land operation rights? What is the specific measure?

How to operate “pricing the land operation rights as capital and shares in cooperatives”?

Q7: Please talk about the ways of raising funds for the production and operation of land shareholding cooperatives, and the specific measures?

Self-financing: mutual assistance of production and operation funds

Financing: Mortgage loan for land operation rights

Q8: Operating Mechanism of Land shareholding Cooperatives

Decision-making mechanism: the roles of members, the executive board, professional agriculture managers, and the supervisory board

Operating mechanism: production cost, production expenditure

The mechanism and distribution of benefits

Q9: Can you talk about the changes in peasants’ income before and after joining the cooperative?

Q10: After the establishment and operation of the cooperative, are there any peasants who quit or joined? Why do they quit? How to implement?

Q11: Do you think:

What problems have “Rural Land shareholding Cooperatives” solved? (Solve “who manages” and realize large-scale operation)

What problems have “professional agriculture managers” solved? (Solve the problem of “Who farms” and realize specialized operation)

What problems have “new agricultural integrated services” solved? (Solve “who serves” and realize socialized operation)

Part IV: Institutional design of rural land shareholding cooperative

Q12: Property rights:

Please introduce the “three rights separation” of rural land in Chongzhou (the property rights foundation of the “Agricultural Co-Operation System”: ownership, operation right and contractual right).

Can you talk about how the land operation right becomes a shareholder in the land shareholding cooperative? What are the specific steps?

How has the ownership of land operation rights realized the transformation from decentralized operation to intensive operation and centralized operation?

Q13: Governance structure: the executive board + professional managers + the supervisory Board

Please introduce the process of the “Articles of Association” of the land shareholding cooperative.

Please introduce how the member (representative) meeting, the executive board and the supervisory board of the land shareholding cooperative are formed. How are the directors and members elected?

How are professional agriculture managers hired?

How do the executive board, professional managers and the supervisory board operate?

Q14: Principal-agent relationship:

How are professional agriculture managers hired? (Professional agriculture managers market)

How do professional agriculture managers sign contracts with cooperatives? What matters

will the contract stipulate? Can you provide an agricultural professional manager employment contract? (If necessary, please do desensitization and densification treatment)

How to motivate and assess professional agriculture managers? How is the reputation mechanism formed?

Q15: Do you think the “rural land shareholding cooperative” has formed a “community of shared future” of “co-operation, win-win and sharing”?

Part V: Institutional change and institutional innovation

Yangliu Land shareholding Co-Operative is a grassroots marginal revolution initiated by peasants and grassroots cadres and formed by the spontaneous efforts from the bottom level to solve problems spontaneously. It starts from 101 mu of land in Yangliu Village, a closed pilot with controllable risks and system exploration, and is gradually promoted until it is promoted nationwide as a national system.

Q16: Beginning with the exploratory closed pilot of the Yangliu land shareholding cooperative, the rural land shareholding cooperative gradually developed and promoted, and was finally written into the State Council’s No. 1 document with the “Agricultural Co-Operation System” to promote nationwide and became a national system. Please talk about your experience in the process of system innovation.

What was the biggest resistance you encountered?

What is the biggest risk you take?

What motivates you to innovate?

What did you do right? What did you do wrong again? What needs to be done right?

Q17: How do you think this bottom-up innovation is institutionalized? What is the role of local government?

Q18: How does the government provide institutional guarantee for rural reform through “top-level design”?

Q19: Is there an institutional entrepreneur in the process of innovation? If so, who is it? What role does he play in the institutional changes of agricultural co-operation?

Q20: The institutional innovation environment of the “Agricultural Co-Operation System”: Can it not be changed under the environment at that time?

Bottom-up induced institutional change

Top-down imposed institutional change

The institutional environment of the interaction between spontaneous order and design order

Q13: Supply and demand analysis of institutional innovation

Q14: The process of institutional innovation

Q15: Institutional innovator

Innovators: Peasants and grassroots cadres in the “marginal revolution”

Institutional entrepreneur: the role of the government (what has the government done right), the government is the provider of the system

2. Interview Outline: Luo Wei

Part I: Interviewee information

Q1: Please introduce yourself, your position changes or status changes since 2009.

Part II: A failed practice: Ying Malong company breaks contract and withdraws lease

Q2: Please restore the Ying Malong company in 2009 to break the lease.

Q3: What do you think is the reason for Ying Malong’s breach of contract and rent withdrawal? What are the roles of companies, peasants and the government in this, and what have they done right and what have they done wrong? (“The company failed, the peasant failed, the government failed”; the failure of “company + peasant household”)

Q4: Please restore what happened during the transition period from the breach of contract and rent withdrawal of Ying Malong Company to the establishment of “Yangliu Land shareholding Cooperative in Longxing Town” in 2010.

Part III: Bold attempt: Yangliu Land shareholding Cooperative in Longxing Town

Q5: Please restore the establishment process of “Longxing Town Yangliu Land Shareholding Co-operative” in 2010, and please introduce the reasons, motives and sponsors of the establishment in detail.

Q6: Please introduce how the “land operation rights are priced into capital and shares in the cooperative” is implemented? How is the quantitative confirmation of equity implemented?

How can peasants voluntarily buy shares with land operation rights? What is the specific measure?

How to operate “pricing land operation rights as capital and shares in cooperatives”?

Q7: Please talk about the ways of raising funds for the production and operation of land shareholding cooperatives, and the specific measures?

Self-financing: Mutual assistance of production and operation funds

Financing: Mortgage loan for land operation rights

Q8: Operating mechanism of land shareholding cooperatives

Decision-making mechanism: the roles of members, the executive board, professional agriculture managers, and the supervisory board

Operating mechanism: production cost, production expenditure

Mechanism and distribution of interests

Q9: Can you talk about the changes in peasants’ income before and after joining the cooperative?

Q10: After the establishment and operation of the cooperative, are there any peasants who quit or join in? Why do they quit? How to implement?

Q11: Do you think:

What problems have “rural land shareholding cooperatives” solved? (Solve “who manages” and realize large-scale operation)

What problem does “agricultural professional manager” solve? (Solve the “who farming”, to achieve professional operation)

What problems have “new agricultural integrated services” solved? (Solve “who serves” and realize social operation)

3. Interview Outline: Zhou Weisong

Part I: Interviewee information

Q1: Please introduce yourself, your position changes or status changes since 2009.

Part II: A failed practice: Ying Malong company breaks contract and withdraws lease

Q2: Please restore the Ying Malong company in 2009 to break the lease.

Q3: What do you think is the reason for Ying Malong’s breach of contract and rent withdrawal? What are the roles of companies, peasants and the government in this, and what have they done right and what have they done wrong? (“The company failed, the peasant failed, the government failed”; the failure of “company + peasant household”)

Q4: Please restore what happened during the transition period from the breach of contract and rent withdrawal of Ying Malong Company to the establishment of “Yangliu Land shareholding Cooperative in Longxing Town” in 2010.

Part III: Bold attempt: Yangliu Land shareholding Cooperative in Longxing Town

Q5: Please restore the establishment process of “Longxing Town Yangliu Land Shareholding Co-operative” in 2010, and please introduce the reasons, motives and sponsors of the establishment in detail.

Q6: Please introduce how the “land operation rights are priced into capital and shares in the cooperative” is implemented? How is the quantitative confirmation of equity implemented?

How can peasants voluntarily buy shares with land operation rights? What is the specific measure?

How to operate “pricing land operation rights as capital and shares in cooperatives”?

Q7: Governance structure: the executive board + professional managers + the supervisory Board

Please introduce the process of the “Articles of Association” of the land shareholding cooperative.

Please introduce how the member (representative) meeting, the executive board and the supervisory board of the land shareholding cooperative are formed. How are the directors and members elected?

How are professional agriculture managers hired?

How do the executive board, professional managers and the supervisory board operate?

How are professional agriculture managers hired? (Professional agriculture managers market)

How do professional agriculture managers sign contracts with cooperatives? What matters will the contract stipulate? Can you provide an agricultural professional manager employment contract? (If necessary, please do desensitization and densification treatment)

How to motivate and assess professional agriculture managers? How is the reputation mechanism formed?

How do the executive board, professional managers and the supervisory board operate?

Q8: Please talk about the ways of raising funds for the production and operation of land shareholding cooperatives, and the specific measures?

Self-financing: mutual assistance of production and operation funds

Financing: mortgage loan for land operation rights

Q9: Operating mechanism of land shareholding cooperatives

Decision-making mechanism: the roles of members, the executive board, professional agriculture managers, and the supervisory board

Operating mechanism: production cost, production expenditure

Mechanism and Distribution of Interests

Q10: Can you talk about the changes in peasants’ income before and after joining the cooperative?

Q11: After the establishment and operation of the cooperative, are there any peasants who quit or join in Why do they quit? How to implement it?

Q12: Do you think:

What problems have “rural land shareholding cooperatives” solved? (Solve “who manages” and realize large-scale operation)

What problem does “agricultural professional manager” solve? (Solve the “who farming”, to achieve professional operation)

What problems have “new agricultural integrated services” solved? (Solve “who serves” and realize social operation)

Q13: Do you think the “rural land shareholding cooperative” has formed a “community of shared future” of “co-operation, win-win and sharing”?

Part IV: Institutional change and institutional innovation

Q14: How many stages do you think this institutional innovation process can be divided into? Which areas of Chongzhou have the institutional innovation of each stage been expanded to and how many new peasant households have joined in?

Q15: The institutional innovation environment of the “Agricultural Co-Operation System”: Can it remain unchanged under the environment at that time?

Q16: Please talk about your experience in the process of institutional innovation.

What was the biggest resistance you encountered?

What is the biggest risk you take?

What motivates you to innovate?

What did you do right? What did you do wrong again? What needs to be done right?

Q17: How do you think this bottom-up innovation is institutionalized? What is the role of the local government?

Q18: How does the government provide institutional guarantee for rural reform through “top-level design”?

4. Interview Outline: Wang Zhiquan, Wang Lingli, Ren Jianzhong

Part I: Interviewee Information

Q1: Please introduce yourself.

Part II: Development and current situation of cooperatives

Q2: Please tell us about the development of your cooperative.

Q3: Please introduce the current situation of your cooperative.

Part III: Selection and Motivation of Professional agriculture managers

Q4: Selection, generation and contract process of professional agriculture managers

What is your motivation for being an agricultural professional manager?

How do professional agriculture managers choose what to farm?

How do professional agriculture managers sign contracts with cooperatives? What matters will the contract stipulate? Can you provide an agricultural professional manager employment

contract? (If necessary, please do desensitization and densification treatment)

Q5: Incentive and assessment of professional agriculture managers

What is the main job content of professional agriculture managers?

Please introduce the assessment methods for professional agriculture managers. During your tenure as an agricultural professional manager, have there been any changes in the assessment methods?

How to motivate professional agriculture managers? What are the incentives and measures? Have there been any changes in incentive measures during your tenure as an agricultural professional manager?

Part IV: Operating mechanism of land shareholding cooperatives

Q6: Talk about the operation mechanism of land shareholding cooperatives from your perspective

Generation mechanism: how are the members (representatives) assembly, the executive board and the supervisory board of the land shareholding cooperative elected? How are the directors selected?

Decision-making mechanism: what are the roles of members, the executive board, professional agriculture managers and the supervisory board? How do the executive board, professional agriculture managers and the supervisory board operate?

Operation mechanism: production cost, production expenditure

Benefit linking mechanism and distribution mode

Q7: What difficulties have you encountered in the operation of land shareholding cooperatives? How to solve it?

Q8: What are the events that are of great significance to you in the specific measure process of your land shareholding cooperative?

Q9: Talk about your greatest gains and regrets in participating in cooperative operation over the years.

Q10: Do you think the “rural land shareholding cooperative” has formed a “community of shared future” of “co-operation, win-win and sharing”?

Annex C: The CVs of Interviewees

A1: Mr. Zhao

The highest leader of the local government of Chongzhou City: Mr. Zhao

Mr. Zhao took office in Chongzhou City in 2010 and served successively as Deputy Secretary, Deputy Mayor, Acting Mayor, Mayor and Secretary of the Chongzhou Municipal Party Committee. His appointments are as follows:

06/2008-08/2010 Deputy Director of the Urban and Rural Work Committee of Chengdu City, Sichuan Province,

08/2010-12/2010 Deputy Secretary and Deputy Mayor of Chongzhou City, Sichuan Province

12/2010-01/2011 Deputy Secretary and Acting Mayor of Chongzhou City, Sichuan Province

01/2011-02/2013 Deputy Secretary and Mayor of Chongzhou City, Sichuan Province

02/2013-03/2019 Secretary of Chongzhou City Party Committee, Sichuan Province

A2: Luo Wei

2009-2011: Worked in the Chengdu Policy Research Office, during which he participated in the research work of the Chongzhou Rural Land Cooperative.

2011-2013: Worked in the Chongzhou City Government Office, summarized and refined the “1+4 model” of the agricultural co-operation system, and started the pilot project the Yangliu Cooperative to explore the feasibility of the system.

2013-2015: Worked at the Chongzhou Municipal Party Committee Office, summarized the practice of Chongzhou Land Shareholding Cooperatives and formed the “1+4” modern agricultural development model in Chongzhou, and expanded it throughout the region.

2015-2019: Transferred to a township and served as Secretary of the Party Committee of Longxing Town, Chongzhou, focusing on cooperatives, agricultural professional managers and third-party service organizations to improve operational efficiency and profits.

2019: Transfer back to Chongzhou Municipal Party Committee Office.

B1: Zou Weisong

2001-2004: Graduated from an agricultural secondary school, and worked as an agricultural technician in Qiquan Town, Chongzhou.

2005-2008: Chongzhou Rural Development Bureau, agriculture promoter at the grassroots

level.

• From the end of 2009 to the end of 2010: “Experts Courtyard” of the Rural Development Bureau of Qiquan Town, Chongzhou, engaged in agricultural science and technology services and scientific research.

• May 2010: The first contractual operation of rural land right shareholding cooperative “Longxing Town Yangliu Land Shareholding Cooperative” was established. Serving as an agriculture manager.

• 2011: Established “Qiquan Town Agricultural Service Supermarket” (also known as “Agricultural Comprehensive Service Station”), the first agricultural service supermarket in Chongzhou, serving as the stationmaster, and engaging in the reform of the grassroots agricultural service system.

• 2012:

-August 27: CCTV’s “Focus Interview” conducted a special report entitled “Professional Managers in Farmland” to Zhou Weisong;

-October: Chongzhou formed the “Leading Group for Promoting ‘1+4’ Modern Agricultural Development Mode” (“Chongnong Promotion Leading Office”), serving as the office director;

- In the second half of the year: Qiquan Agricultural Service Supermarket was handed over to socialized operation, left the position as stationmaster.

• 2013-2014: The model effect of the Yangliu Cooperative has attracted more and more attention. Half of the energy was put to the promotion and development of the cooperative, and the formulation of policies; half of the time was taken to receive leaders and experts coming for doing research.

-September 2013: no longer served as the professional manager of the Yangliu Cooperative, and Wang Zhiquan, who won the open competition, took over.

• January 2015: Transferred from the Chongzhou Agriculture and Rural Bureau and left the Chongzhou “1+4” Leading Group.

• January 2015-January 2018; transferred to Longxing Town, served as deputy mayor, in charge of agriculture.

• February 2018: Left Longxing Town (deputy mayor status was retained until February 2019), transferred to the newly established “Chongzhou Modern Agricultural Functional Zone of Chengdu Preparatory Team”, serving as a member of the preparatory team.

• After 2019: “Chongzhou Urban Agriculture Industry Functional Zone of Chengdu Operation Committee” (formerly “Chengdu Tianfu High Quality Grain and Oil Integrated

Development Functional Zone Operation Committee”) was established, serving as the director of the Base Development department (originally called “High Quality Grain and Oil Development Department”) until now.

B2: Wang Zhiquan

Born in 1968, a peasant in group 5, Shunjiang village, Xinglong Town, Chongzhou, and a member of the Communist Party of China; the agriculture CEO of three land shareholding cooperatives in Chongzhou, the first agriculture CEO in Chongzhou to obtain loans with the qualification certificate of professional agriculture manager; the Yangliu Land Shareholding Cooperative, Longxing Zhiquan Land Shareholding Cooperative, Shima Land Shareholding Cooperative and Zhiquan Agricultural Machinery Professional Cooperative. He operates and manages nearly 4000 mu (267 hectares) of farmland with an annual income of RMB one million yuan. He is one of the most renowned peasants in China.

• Year 2007: Worked in the city, led a group of 20 to 30 people to work for house decoration in Chengdu.

• Year 2010, was elected as the production team leader of the fifth group of Shunjiang Village, Xinglong Town.

• Year 2011:

-One day in September, the village party secretary called him to go home for a meeting to discuss about the establishment of an agricultural cooperative;

- In October, 20 villagers with a total land of 82.8 mu (5.52 hectares) joined in and established the “Chongzhou Longxing Zhiquan Land Shareholding Cooperative”, served as the agriculture CEO.

• Year 2012:

-May: Passed the professional agriculture manager examination and obtained the “Professional Agriculture Manager Intermediate Certificate”;

- The cooperative was well operated, more villagers wanted to join in. The scale of operation was expanded, and the farmland under operation has increased to 380 mu (25.33 hectares).

• 2013: The farmland he operated reached 1,100 mu (73.33 hectares).

-September 30, won the recruitment campaign of professional managers in the Yangliu Cooperative and was hired. At that time, the land of the Yangliu Cooperative was 470 mu (31.33 hectares), which was later increased to 1270 mu (84.67 hectares).

-On December 25, obtained a loan of 120,000 yuan from Chongzhou Shangyin Rural Bank

(Chongzhou’s first exclusive loan issued with a professional agriculture manager certificate) for the purchase of tractors required for agricultural mechanized farming, became the first professional agriculture manager in Chongzhou to obtain a bank loan with a certificate of professional agriculture manager.

• In 2014: Zhiquan Cooperative distributed an average dividend of 700 yuan per mu (1370 euros/hectare).

-March: Shima Land Shareholding Cooperative recruited professional managers, won over another candidate and was hired.

-October: As one of the students selected by Chengdu, participated in a 7-day intensive learning at China Agricultural University in Beijing.

• 2015:

-In January, Wang Yang, Vice Premier of the State Council, went to Chengdu for inspection and visited the cooperative run by Wang Zhiquan;

-In May, the grain drying storage and transportation center was completed and started operation;

-In August, his daughter Wang Lingli graduated from Chengdu Normal University and chose to come home to work as a professional agriculture manager with her father, and he has a successor in his career.

• 2016:

-In September, all supporting facilities of the Grain Drying Storage and Transportation Center were completed;

-In November, the first sum of dividend from the drying storage and transportation center was distributed.

• 2017: the farmland he operated reached 3,500 mu (233.33 hectares).

B3: Wang Lingli

Born in 1993, a representative of the Chengdu Municipal People’s Congress and the youngest agriculture CEO in Chongzhou; together with the father Wang Zhiquan an agriculture CEO himself, they become a household of agriculture CEOs for two generations, managing more than 1,000 households and over 3,000 mu (200 hectares) of lands from Chongzhou Yangliu Land Shareholding Cooperative, Chongzhou Longxing Zhiquan Land Shareholding Cooperative, Chongzhou Shima Land Shareholding Cooperative and Chongzhou Zhiquan Agricultural Machinery Cooperative. They have led the peasants to common prosperity (Wang & He, 2019; Yang, 2017; Yun, 2018).

2014: Returned to the hometown in Chongzhou for the internship program, learning farming knowledge from the father Wang Zhiquan; when watching her mother fell ill due to farming load, she came up with the idea of “helping with the farming” and seriously considered to be an agriculture CEO in the future.

2015: Graduated from Chengdu Normal University, chose to return to her hometown to follow her father Wang Zhiquan to manage the land shareholding cooperative; participated in the agriculture CEO training program and obtained the certificate of junior agriculture CEO.

• July 2017: Obtained the intermediate certificate of agriculture CEO.

• November 2019: Selected by the Central Committee of the Communist Youth League and the Ministry of Agriculture and Rural Affairs as the “Eleventh National Rural Youth Enrichment Leader”.

B4: Ren Jianzhong

Born in 1973, Qingqiao Village, Longxing Town, Chongzhou; secretary of the Party Branch of Qingqiao Village, Chongzhou; agriculture CEO of Qingqiao Land Shareholding Cooperative; one of the first batch of certified agriculture CEOs in Chongzhou; a witness to the development and advancement of the “ACOS” and “beneficiary” of the institutional innovation and reform.

• 1992: After graduating from high school, went back to school for half a year, but did not pass the entrance examination to college, thus gave up his studies.

• 1993-1996: Worked in a rice factory in Chongzhou, and then went to work in Guangxi province with his cousin.

• 1996: Returned to Chengdu and worked in a food factory, and then left due to poor operation of the factory.

• 1996-February 2011: Returned to Chongzhou to farm, and bred laying hens to increase income at the same time.

• 2011:

-In March, hired as an agriculture CEO of the Chongzhou Qingqiao Land Shareholding Cooperative through an open election campaign; participated in the agriculture CEO training organized by the Chongzhou Agricultural Development Bureau;

-In August, obtained the Chongzhou Agriculture CEO Certificate, one of the first batch of 9 certified agriculture CEOs trained in Chongzhou;

-In December, elected as the representative of the 17th National People’s Congress of Chongzhou.

• 2012: honored as “Excellent Agriculture CEO in Chongzhou”.

• 2013: Obtained the “Chengdu Intermediate Agriculture CEO Certificate”; seized the opportunity of the “100,000 mu(6666.67 hectares) of Fertile Land” project in Chongzhou to build and improve the cooperative farmland infrastructure and lay the foundation for industrial development; built one seedling drying storage center and two ecologically recycling farms for planting and breeding; finished the construction of winter strawberry and grape bases, which became a highlight of the fund projects in Chongzhou; and created the Qingqiao Land Shareholding Cooperative Farm for tourism reception.

• 2014: Took the lead in the country to implement the quantification of asset equity formed by fiscal subsidies invested in cooperatives, and carried out the quantitative reform of asset equity formed by fiscal subsidies for the seedling drying and storage center project, increased peasants’ property income by giving play to the benefits of financial subsidy investment to form assets, and ensured the continuous increase of peasants’ income.

2015: Obtained the “Chengdu Senior Agriculture CEO Certificate” and was named “Chengdu Top Ten Agriculture CEOs”.

2016: Built the Qingqiao Marketing Center, added the display and e-commerce platform of agricultural products.

Annex D

Table 1 Examples of original words from the interview with Mr. Zhao

Original words	No.
Rent relationship-equity relationship, generally backed by the government's endorsement; previous petitions arise mainly because that the rent relationship between enterprises and peasants has not been resolved: government + base + peasants; to some extent, peasants are "realistic self-interest in the hope of ensuring income despite of droughts or floods."; the government has a special organization responsible for this matter...	A1-001
Seed picking, the government can't compensate for the peasants' loss infinitely. How to solve the problem? Slowly a land shareholding cooperative was formed (the Chengdu Coordinating Committee at that time was responsible for these things). The peasants did not want their land back. The reason was that the government mobilized them at the beginning, now the government can't just leave them alone...	A1-002
It must be institutionalized. Only an institutionalized solution can solve the conflict and stabilize the society. Prior to this, Chengdu's 2008 rural property rights system had confirmed land rights. "The property rights are unclear, all things do not prosper." Begging for a living while keeping the golden rice bowl at hand, this set of logic behind depends on the reform of the property rights system.	A1-003
Increasing agricultural efficiency and increasing peasants' income has always been our research focus. Modern enterprises operate in the countryside, industrial and commercial capital flow to the countryside, at that time: colleges + bases + peasants, companies + bases + peasants, and now cooperatives + bases + peasants, these are the basic elements of agricultural modernization. We make up for what is missing...	A1-004
Four dilemmas facing the agricultural and rural sector: where does the money come from (financial services), where do people go (to towns, to the secondary and third industries), and who will grow the land (land shareholding cooperatives are also an effective resort, but not the only resort), how to gain people's trust (political perspective: party building, there are benefits behind it, so that the people can gain greater development benefits...	A1-005

Table 2 Examples of original words from the interview with Luo Wei

Original words	No.
The rent-returning incident of Ying Ma Long Company originated from an unfinished land transfer; the owner of the cannery transferred hundreds of acres of land, and due to poor operation, the rent could not be paid, so he ran away...	A2-001
The peasants came to the local government for help. They refused to take the land back with the reason that it is the government who mobilized them (to participate), now the government can't just leave them alone.	A2-002
Some people have already found a job and are unwilling to farm again; the land has been fragmented, and the property rights of the previous households are no longer clear; (peasants) still want to continue the transfer of their land (the contract signed between the Ying Ma Long Company and peasants pays high rent); the rent paid before is high, higher than the market price, so it also gives enlightenment to the later practice, to let the peasants participate in and know the market price.	A2-003
The land is abandoned with no one to farm and no rent to be paid; the price signed previously is high, and the possibility of subleasing is very low; establishing a cooperative to involve the peasants, even though the land price is lower compared with before, the peasants will still accept it; let the grassroots know and participate in the market game...	A2-004
The intentions for the establishment of a cooperative: 1. The unfinished land circulation incident relies on the government. 2. Getting peasants to participate in the whole process does not mean that the government is unwilling to solve the problem...	A2-005

Table 3 Examples of original words from the interview with Zhou Weisong

Original words	No.
The peasants moved to storied buildings and live upstairs (the peasants were resettled together. There must be a place for pigsty and chickens in the countryside, and there must be a place for storage of agricultural machinery. Peasants' production style has changed) and they no longer farm.	B1-001
The establishment of the cooperative in 2010 was forced by the situation. In 2010, the weather was extremely cold, a lot of the seedlings died, so many peasants went to cities to seek for a job, abandoning their farmlands. Chongzhou as a grain production area, land abandonment there could be a serious problem and a political event.	B1-002
The village level reported to the township, and the township to the Agricultural Development Bureau. The Agricultural Development Bureau discussed about how to solve the problems of the social service system and agricultural industrialization, and put forward a lot of ideas. Every department was proposing plans, but all the plans favored the way of land circulation, just in different forms, if you do not farm, get someone to farm it for you, paying you 500, 600, or 900 yuan.	B1-003
Zhou Weisong accidentally put forward an idea: try something new to solve the problem! Change the original cooperatives and farm, after making money, distribute the money to the peasants, solve the problems within a set of systems. It is not the traditional way of land circulation (a company rents a piece of land, gives the peasants one set of costs, and after the peasants set the cost, they invite a group of people to farm the land at the other set of costs, there are two sets of costs). We operate at one set of costs. The cooperative model makes money through the establishment of a social service system, intensive production, and cost reduction. This proposal was considered to be a good one.	B1-004
At the very beginning, it was considered that the model should be reproducible and generalizable. It is not just to solve the problem of these 100-acre lands, but the problem of hundreds of thousands of acres of lands in Chongzhou.	B1-005

Table 4 Examples of original words from the interview with Wang Zhiquan

Original words	No.
In the 1980s, a household contract was implemented to solve the problem of food and clothing. In 1982, the produce of rice from one mu (0.067 hectare) was only around 500 kilograms. At that time, farmlands were important to peasants, since they needed the land to provide food and clothing.	B2-001
In 2010, farmlands were abandoned and transferred through circulation. Peasants went to cities to look for labor work. Because the gross income per mu of land has been only around 1,000 yuan from 2010 until now. Each household planted more than 3 mu of land, with a total gross income of more than 7,000. There wasn't much left after the cost.	B2-002
Young people would find gig work or start a business in the city. The daily salary for gig work was 200 yuan in Chongzhou. Their monthly income was about the same as the annual income from farming, so no one would farm anymore.	B2-003
In 2010, the government initiated a pilot project in Yangliu Cooperative. With farmlands from the cooperative taken in as a share, the country's first professional cooperative was established in September 2010. The Board of Directors, the Supervisory Board, the director of the board, and the director of the Supervisory Board were elected. At last, the professional agriculture manager was hired to solve the problem of who would farm.	B2-004
By then, we grew a type of mushrooms and each person received a dividend of more than 1,000 yuan. If we grew grains, one could get around 800 yuan per mu.	B2-005

Table 5 Examples of original words from the interview with Wang Lingli

Original words	No.
Grown up in the countryside, I always wanted to leave the countryside when I was a child. In my sophomore year, when talking with my parents on the phone, I could sense their hardness, since their voices were hoarse. At that time, the degree of mechanization of farming was very low, a lot of farm work was done by human labor. One night the truck my father drove was rolled over and my father was injured. After this accident, I started to consider coming back to help my parents with the farming.	B3-001
At that time, the agriculture CEOs were all peasants of old age, and there were few young people. Meanwhile, my parents wanted me to come back, and I also believed that there would be a lot of opportunities to start a business in the countryside.	B3-002
The original plan was to go out to study and find an office job. When I came back, I found that the present agriculture CEOs were getting old. It was a great shock to me. The development of the countryside calls for the involvement of a younger generation.	B3-003
Currently the work at the cooperatives includes not only farming, but also a lot of financial and clerical work. It is a systematic project.	B3-004
After graduating from college, I began to learn about farming. In March and April, it’s time for raising seedlings and I began to learn some agricultural knowledge. The knowledge and operation skills I learned in college may be useful in the normalization and standardization of cooperatives. Agricultural knowledge is something I need to learn from scratch.	B3-005

Table 6 Examples of original words from the interview with Ren Jianzhong

Original words	No.
Established in 2011, 11 cooperatives were formed by 13 production teams. In 2012, each cooperative only had around 100 mu (6.67 hectares) of farmland, experienced a scale plantation on the more than 1,300 mu (86.67 hectares) of farmland, two managers were hired that year. In 2013, it was proved that sectional planting didn't work out, thus Qingqiao Land Shareholding Cooperative was formed.	B4-001
Bottleneck: the grain drying problem. built the current drying center. In 2014, the Qingqiao Land Share Cooperative was put into operation and generated profits, it undertook a reform task in Sichuan Province.	B4-002
The Third Plenary Session of the Eighteenth Central Committee proposed to increase the people's asset income, quantify equity with assets formed by fiscal funds, and distribute dividends to cooperative members.	B4-003
The studying at the China Agricultural University in 2015 was very touching. I planted watermelons. In November, we built a grape and strawberry base and established an agricultural product exhibition center.	B4-004
It was completed in 2015 and put into use in 2016, which brought relatively good profits. In 2017, the cooperative continued to upgrade, processing centers, rice deep processing, and established our own brands and trademarks. In 2018, cooperated with other companies to sell rice. In 2019, the agricultural company was transferred to Huachuan Group. There is a concept that runs through the increase of agriculture efficiency and the increase of people's income depends on the extension of the agricultural industry chain. With resources such as the wetland park, how to integrate agricultural products with the tertiary industry is worth pondering.	B4-005

Table 7 Examples of original words from the interview with Council members

Original words	No.
When the cooperative was established, Wang Lingli had not yet graduated. Over a year later, she graduated and came back. At the beginning, we didn't think she would do her work well. But after a period of time, we could see her working with her father in the field every day.	C-001
Young, highly educated, more sensitive than the elderly, embrace new things; experienced. Everyone learns from each other. In the first two years, there were still some differences. Lingli argued that we should plant good seeds, however we felt that the yield of good seeds was low. What to plant was decided together by everyone in the group. When we first started planting high-quality rice, there was still a lot of controversy, a period of adapting. A dispute existed when signing the contract with Huachuan, because large companies didn't allow cash transactions.	C-002
I have been working in agriculture for a long time. I started farming at the age of seventeen and now I have a little bit more experience.	C-003
There are meetings to be held; members are usually on call, based on themes. A lot depends on the season, when it is the farming season, the meeting may be delayed.	C-004
The guaranteed system was contractual. At that time, there were still a lot of manual work and frequent meetings. The Yingmalong company couldn't afford the rent of more than 1000 yuan per mu and ran away. After that, we operated the farmlands in the form of cooperatives. Now we work together in this cooperative, and everyone has shares.	C-005

Table 8 Examples of original words from the interview with Supervisory Board Members

Original words	No.
The biggest problem the cooperative facing at present: sales and sales is the pain point; at present, there are many channels for selling agricultural products in community stores, as gifts or to enterprises and government institutions, but the postage cost is quite high; we still want to sell our products in community stores and gift packages. Currently, the production capacity is sitting idle because the terminal market has not been fully explored yet.	D-001
Added-value cannot be increased: 1. There are not enough hands in the cooperative and how to keep young people is a question. 2. Funding issues, display products in supermarkets. 3. The government should have incentives. Incentives are of vital importance.	D-002
The annual sale amount is about 200 tons, and the idle rate is 80%; in terms of products, indica rice. Lack of local brands, it's just like the Chinese saying goes "the scenery in the teapot--too tiny to be noticed": the brand of food has a high requirement on the region of origin, the brand promotion requires the efforts of the government.	D-003
Once a year, October / November. The Supervisory Board participates in the whole process. The members' meeting is held once in March and once in October every year. Before, it was held three times a year, but now since things are on the right track, it is held twice a year. The Supervisory Board has 3 to 6 members, mainly responsible for financial supervision. There are 3 to 5 members in the Executive Board, each selected by every member in the cooperative, serving a five-year term.	D-004
Qingqiao Land Shareholding Cooperative (639 households) has seedling raising (operation and supervision), drying (operation and supervision) and family farms. Unified operation, independent financial accounting, representing a new collective economic organization, several new operation entities. Cooperatives are composed of several operation entities, rather than individual households. The cooperative center cannot violate regulations in terms of land operation and land use.	D-005

Table 9 Examples of original words from the interview with enrolled farmer

Original words	No.
Peasants work in cooperatives, grow the rice, harvest the rice, do the labor work for one's own cooperative first, and then go to work at other cooperatives, earning more than 10,000 yuan (over 1,300 euros) a year (working time: four to five months). In addition to dividends, they find gig work during busy farming time, with salary calculated by the hour, and paid every day. Forty-five yuan (6 euros) per hour in busy farming season. The transparent operation of the cooperative is accountable. Play mahjong, placing a wager of at least 5 yuan (0.7 euro) per hand.	E-001
The big decisions such as purchasing a grain dryer, and the earnings brought by the equipment are enjoyed by everyone.	E-002
Basically, all peasants have joined the cooperative, and now they do not want to farm anymore. No one has dropped from the cooperative. The Yangliu Cooperative has basically recruited all the households now. People have realized the advantages of cooperative operation.	E-003
How to convey the opinions of members? You can directly contact the director, talk to him when encountering him on the way, or give feedback on WeChat. The sense of responsibility of the peasants has been raised a lot, because the distribution of dividends concerns everyone.	E-004
The term of agriculture CEOs generally expire in five years. The mechanism of competition. The incentive mechanism, accepted by the people. So far, there isn't any agriculture CEO who quits before the five-year period ends.	E-005

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Annex E: The Process of Open Coding

No.	Concept	Category
A1-001	Rent relationship; peasants moved to storied buildings and live upstairs	Environment change
A1-002	Government serves as the last resort; solve the problem from its origin	Government awareness; strategic thinking
A1-003	Institutional solution; confirmation of land rights; reform of the property rights system	System design; property right system
A1-004	Improve agricultural efficiency; increase peasants’ income	Operation effect
A1-005	Agricultural and rural issues; agricultural finance issue; talent issues; uniting people; leading by party building	Overall policy planning
A1-006	Overall planning; overall construction planning; overall fund planning;	Policy planning
A1-007	National issues; food security; mega central city; seed engineering	Strategic thinking; policy planning
A1-008	Cooperative registration; land taken in as a share after evaluation; break registration procedure;	Policy innovation
A1-009	Rural social governance	Environment change
A1-010	Government grain purchase and storage; government endorsement;	Government participation
A1-011	Insufficient funds; government subsidies (incomplete subsidies)	Government participation
A1-012	Insurance system; benign system	Socialized service system
A1-013	Expert contribution; homestead reform	Theory driven
A1-014	System recognition; replication and promotion; direction anticipation	Policy planning
A1-015	Closed experiment; spot pain points	Mechanism design
A1-016	Industry linkage; three rural issues	Service system
A1-017	Policy exploration; bear political risks	Institutional entrepreneur
A1-018	Earnings distribution of agriculture CEOs; political risk prevention	Mechanism design; risk awareness
A1-019	In-depth participation of the grassroots; no longer in weak position; improved organization degree	Grassroots participation; government policy
A1-020	Higher efficiency, lower exploration cost; adjust measures to local conditions	Operation effect
A1-021	Closed pilot project; grassroots participation	Mechanism design
A1-022	Combine with the practical situation; adjust measures to local conditions	Policy planning
A1-023	Land circulation; scale operation	Mechanism design
A1-024	Social environment change; land cooperative	Environment change
A1-025	Agricultural technology; technology promotion	Agricultural science
A1-026	Member decision-making; agricultural use	Mechanism design; risk aversion
A1-027	Protect cultivated land	Policy planning; risk

		aversion
A1-028	Agricultural service; efficiency improvement	Service system
A1-029	Socialized service; integrate resources	Mechanism design
A1-030	Market orientation; technology support; agricultural brand	Service system
A1-031	Agricultural investment and financing; product quality; financial service	Service system
A1-032	Transformation of agricultural science and technology; science and technology promotion	Service system
A1-033	Reform of the property rights system	Institutional foundation
A1-034	Property rights foundation	Institutional foundation
A1-035	Benefit cooperation; equity relationship	Benefit sharing
A1-036	Government endorsement	Government participation
A1-037	Institutional solution	Institutional norms
A1-038	confirmation of land rights	Property rights system
A1-039	confirmation of land rights	Property rights system, instructional foundation
A1-040	Strategic thinking	Policy planning
A1-041	Labor liberation, industrial upgrading	Environment change
A1-042	Practice driven, overall thinking	Policy planning
A1-043	National issue	Policy planning
A1-044	Fiscal support, peasants join the cooperative	Operation mechanism, government support
A1-045	Value evaluation	Operation mechanism
A1-046	Community with a shared future	Community with a shared future
A1-047	Social governance	Social governance
A1-048	Scale operation, government subsidy	Government support, scale operation
A1-049	Price protection	Government serves as the last resort
A1-050	Policy replication and generalization	Policy planning
A1-051	Pilot risk	Risk assessment
A1-052	Integration of three industries, agricultural modernization	agricultural modernization
A1-053	Industry chain	Industry chain
A1-054	Standard Exploration	Institutionalization process
A1-055	Interest coordination mechanism, openness and transparency	Mechanism design
A1-056	Policy risk, operation risk	Risk control
A1-057	Labeling, stigmatization	Risk control
A1-058	Non-agricultural and non-grain	Risk control
A1-059	Grassroots participation	Operation mechanism
A1-060	System generalization, adjust measures to local conditions	System generalization
A1-061	Institutionalization	Policy planning
A2-001	Social environment change	Environment change
A2-002	Government responsibility	Government responsibility
A2-003	Social environment change; consciousness transformation	Environment change
A2-004	Grassroots participation	Grassroots participation
A2-005	Government responsibility, grassroots participation,	Government awareness,

	mechanism design	operation mechanism
A2-006	Risk awareness, reduce costs	Risk awareness
A2-007	Grassroots participation, policy continuity	Grassroots participation
A2-008	Agriculture CEO market	Agriculture CEO market
A2-009	Market-oriented operation; scale operation	Service system
A2-010	Agriculture CEO; integrated services	integrated services
A2-011	Grassroots participation; cooperatives	Grassroots participation
A2-012	Risk and earnings; operation risk	Operation mechanism
A2-013	Policy requirements; non-agricultural and non-grain	Policy risk
A2-014	Government responsibility; policy continuity; motivating grassroots participation	Government awareness
A2-015	Chinese characteristics; government responsibility; government action	Government awareness
A2-016	Land shareholding cooperatives; operation efficiency; grassroots satisfaction	Operation effect
A2-017	In-depth participation of the grassroots; degree of organization	Grassroots participation
A2-018	Leadership recognition; expansion and generalization	Government leader traits
A2-019	Scholar participation; top-down authorization	Scholar participation; institutional supply
A2-020	Closed pilot; grassroots participation; practical work at the grassroots level	Operation mechanism
A2-021	Grassroots interest; innovative awareness of policy makers	Reformer traits
A2-022	Government responsibility; institutional supply; in-depth participation of the grassroots	Government awareness
A2-023	Risk awareness; national policy	Risk awareness
A2-024	National policy	Reformer traits
A2-025	System design; to answer the call of the country	Reformer traits
A2-026	Agriculture CEO capacity; operation; role of party organizations	Agriculture CEOs
A2-027	Agriculture CEO training; supporting policies; performance evaluation	Operation mechanism
A2-028	Socialized service	Socialized service
A2-029	Risk aversion; risk awareness	Policy risk awareness
A2-030	Constant modification	Mechanism design
A2-031	System implementation	Mechanism design
A2-032	Agriculture CEO power	Agriculture CEOs
A2-033	Grassroots participation; institutional mechanism; openness and transparency	Grassroots participation; Operation mechanism
A2-034	Talent shortage; role of the Supervisory Board	Mechanism design
A2-035	Government supervision; government subsidies; indirect supervision	Government role
A2-036	Market behavior; government responsibility; role internalization	Government awareness; socialized service
A2-037	Government responsibilities	Government responsibilities
A2-038	Mechanism design	Mechanism design
A2-039	Property rights design	Property rights design
A2-040	Land shareholding cooperatives; mechanism design	Mechanism design
B1-001	Change of lifestyles; change of production modes	Social environment

		change
B1-002	Climate change; peasants migrate from rural to urban areas; labor shortage	Natural environment change; social environment change
B1-003	Government attention; socialized service system; agricultural industrialization	Government attention; socialized service system
B1-004	Solve problems in one system; socialized service system; intensive production	Socialized service system; intensive scale production
B1-005	Policy reproducibility; policy foresight	Government policy design
B1-006	A bold attempt; the recruitment of a third-party production expert	Attempts to explore and practice
B1-007	Policy constraints; grass roots organizations and participation; conversion of operation right into shares	Government policy constraints ; vitality of grass-roots organizations
B1-008	Lack of market pricing; historical income of peasants; standard stipulation	Standard stipulation
B1-009	Revenue and expenditure accounting; openness and transparency; guaranteed revenue; revenue sharing	Transparent and open mechanism design; revenue sharing mechanism design
B1-010	Spread ideas; change circulation	Transformation of traditional ideas
B1-011	Shortage of agriculture CEOs; generalization of agriculture CEOs	Agriculture CEOs
B1-012	Confirmation of operation rights and issuance of certificates; confirmation of land rights	Land policy
B1-013	Industrial and commercial registration denied; policy background; central government document	Government policy
B1-014	Industrial and commercial registration completed; land shareholding cooperatives	Government policy
B1-015	Sensational effect; Leadership attention; Industrial and commercial approval	Senior leadership attention
B1-016	Chongzhou practice; forced the reform of industrial and commercial registration reform; land shareholding cooperatives	Government policy change
B1-017	Rename of industrial and commercial registration; reform approval; political risk; legal status	Legitimacy; risk awareness
B1-018	Sensational effect; leadership support for reforming; industrial and commercial breakthrough	Local government policy
B1-019	No. 1 central document; Chongzhou practice prototype	No. 1 central document
B1-020	Investigation and research from China Agriculture Office; investigation and research from scholars; cooperative identity	Investigation and research from China Agriculture Office; investigation and research from scholars
B1-021	Political sensation; cooperative identity; legitimacy; No. 1 Central Document	Central government policy
B1-022	The generalization of agriculture CEOs; contingency; leadership arrangement; government	Government responsibilities

	as the last resort	
B1-023	Full participation; establishment of cooperatives; trust	Trust mechanism
B1-024	Absence of agriculture CEOs; timely action; keep the promise	Grassroots reformer
B1-025	Cost transparency; intensive operation; lower the cost	Mechanism design
B1-026	Cost transparency; farmer supervision; profit transparency	Mechanism design
B1-027	Part-time agriculture CEOs; focus on planting; operation uncertainty	Risk awareness
B1-028	Social capital; team	Socialized service system
B1-029	Driving effect; scale expansion; socialized service system; control scale	Mechanism design; socialized service system
B1-030	(Chengdu) leadership research; leadership approval; production within one set of costs; expansion and generalization	Leadership approval and support; Production conforms to the law
B1-031	Leaders are young and energetic leaders; set appraisal; rapid growth	Government leadership traits; appraisal mechanism
B1-032	Build brand; increase profit	Agriculture CEO traits
B1-033	Increase revenue; cash crops; discuss at meetings; risk sharing	Collective decision; constantly improve business categories; risk recognition and proper handling
B1-034	Fund issue; inspect investment; solution proposal; forced reform; exploration and innovation	Agriculture CEO traits; Hardship pushes reforms.
B1-035	Financing problem	Hardship pushes reforms.
B1-036	Leadership report; leadership support; path exploration; financial innovation	Government leadership traits; explore the practice law
B1-037	Financial innovation; market law	explore the practice law
B1-038	Refusal of subsidies; market test; government exploration and innovation; peasants’ exploration and innovation; agriculture CEOs’ exploration and innovation	Government leadership traits; explore the practice law; multi-agent exploration and innovation
B1-039	the contractual operation of rural land; mortgage loan; collective decision	Mechanism design; risk sharing
B1-040	Bank leaders; reform courage; reform exploration; generalization	Bank leadership traits; explore practice laws
B1-041	Bold innovation; innovative issuance of certificate	Bold innovation
B1-042	Process compliance; risk awareness	risk awareness
B1-043	Credit standard; credit loan; innovative promotion	Mechanism design
B1-044	Discount policy; public distribution	Community of interests
B1-045	The prototype of the separation of three powers; field research from the central leadership	Field research from the central leadership
B1-046	1+4 model; modern agricultural operation system	Explore and generalize laws
B1-047	Science and technology services; financial services;	Grassroots policy

	socialized services; financial brand services	support
B1-048	Field research from the central leadership; acquiescence	Field research from the central leadership
B1-049	Emergence of new problems; unsound agriculture CEO market; unsound socialized service system	Mechanism design
B1-050	Farmer training; science and technology training	Training mechanism
B1-051	Nurture the agriculture CEO market	agriculture CEO market
B1-052	Expert team; fixed-point service; promotion of agricultural technology	socialized service system
B1-053	Training formalism; training effectiveness	Training mechanism
B1-054	Innovate agricultural technology services; provide compensation; promotion sustainability; respected professional services	Mechanism design socialized service system
B1-055	Integrate resources; agricultural service supermarket	socialized service system
B1-056	Identity of agricultural technology cadres; marketization; social capital	socialized service system
B1-057	agricultural service supermarket; “1+4” system	socialized service system
B1-058	Shortage of labor; new problems	Mechanism design
B1-059	Promote mechanization; production links; solve problems Promote	Mechanism design
B1-060	Visit and learn from other provinces; agricultural service supermarket; socialized service system; high division of labor	Learn from other provinces
B1-061	Government support; agricultural machinery subsidy	Government policy
B1-062	Rapid expansion; promotion of agricultural machinery	Government policy support
B1-063	promotion of agricultural machinery; government subsidy	Government policy
B1-064	Lack of scale; land fragmentation; mechanical farming confined	Intensive scale operation
B1-065	High-standard farmland; land integration	Intensive scale operation
B1-066	Government support; higher goals; joint building; rapid completion	Grassroots government policy
B1-067	Higher output; high efficiency of agricultural machinery	Socialized service system
B1-068	Win over policy; purchase of agricultural machinery	Grassroots government policy
B1-069	Government subsidy; distribution standard	Grassroots government policy Mechanism design
B1-070	Measurement standard; avoid waste; avoid reselling; resource utilization	Mechanism design
B1-071	High-standard farmland; small field farming; infrastructure; supporting facilities	Mechanism design
B1-072	Government push; large scale operation	government policy intensive scale operation
B1-073	Subsidy form; government guidance; approved mechanical farming; self-purchasing	Grassroots government policy
B1-074	Emergence of new problems; subsidy package; seedling raising technology; phased	Emergence of new problems

B1-075	Emergence of new problems; drying	Emergence of new problems
B1-076	Socialized operation; agricultural service supermarket; cannot meet the needs	Socialized service system
B1-077	Higher-level government; drying center; government support; 60 indicators	Socialized service system
B1-078	Government subsidy; drying center	Government policy
B1-079	Remarkable gains from the drying center	Implementation effect
B1-080	Drying center; rapid completion	Implementation effect
B1-081	Government subsidy; emergence of new problems; fund source; subsidy distribution	Government policy Mechanism design
B1-082	Mode exploration; subsidy distribution; practice and modification	Mechanism design
B1-083	Government subsidy; cooperatives; equal distribution; property income; operating dividends	Mechanism design Revenue sharing mechanism
B1-084	Share quantification; guarantee fairness; productive income; operating dividends	Mechanism design Revenue sharing mechanism
B1-085	Partial predictability; supporting policies; technology promotion; agriculture CEO training; sound service system; improve infrastructure;	Government policy
B1-086	Training system; research from the central government; No. 1 document; New-type professional peasants	Field research from the central leadership
B1-087	High-standard farmland; training system; approval of the central government	Field research from the central leadership
B1-088	National on-site meeting; praised by the Ministry of Agriculture	Innovation expansion
B1-089	Promotion at the on-site meeting	Innovation expansion
B1-090	Agricultural operation; institutional innovation; nationwide promotion; new agricultural operation system; summary and improvement; agricultural co-operation system	System generation
B1-091	Top-down; bottom-up; parallel	System generation
B1-092	Prime Minister’s inspection; Chongzhou model; future direction of agriculture development	State-level leaders’ inspections and statements
B1-093	Research by scholars; divestiture of operation rights; contracted rights; professional agriculture CEOs; separation of three rights	Mechanism design
B1-094	Research by scholars; modern agriculture; academic seminars; theoretical discussions; brainstorming	Scholar participation
B1-095	Innovation of the institutionalization process; government approval; academic certification	Government certification
B1-096	Agricultural co-operation system; system combing	Mechanism design
B1-097	Institutional innovation; academic Summary; Chongzhou participation	Institutional innovation
B1-098	the proposal of agricultural co-operation system	Institutional innovation
B1-099	Research by scholars; follow-up research; approved practice	Scholar participation
B1-100	Create one’s own brand; form a closed loop; socialized services; provide value-added services	Socialized service system
B1-101	Agriculture CEOs’ strong decisions; peasants’ poor participation	Agriculture CEOs

B1-102	institutional supply; new-type professional farmer; farmer identity; farmer occupation; a high degree of labor division	Mechanism design
B1-103	Land circulation; intensification; specialization; organization; socialization	Concentrated scale operation
B1-104	Concentration of peasants; trading platform; strong stability	Mechanism design
B1-105	Vitality; right to speak; production and trading platform	Mechanism design
B1-106	Corporate operation; two sets of cost operation; agricultural co-operation system; operation within one set of cost; low transaction cost	Operation cost; transaction cost
B1-107	Corporate planting; large-scale; unprofessional	Concentrated scale operation
B1-108	High operation cost; specialized; service-oriented; not precise enough	Concentrated scale operation
B1-109	Scale operation; mechanization; fine operation; standardization; low cost	Concentrated scale operation
B1-110	Agricultural constraints; agricultural professionalism	Agricultural features
B1-111	Operation effectiveness; division of responsibilities; government role; role of peasants	government role
B1-112	Policy continuity; party and government leadership; reform courage; group innovation	Government leadership support
B1-113	Proposed by the minister; the value or quality	Government leadership support
B1-114	Agriculture CEO certificate; hierarchical operation; financial linkage	Mechanism design
B1-115	Purchase social security; government subsidy; innovative measure	Government policy
B1-116	The value of agriculture CEO certificate	Mechanism design
B1-117	Top-level design; practice improvement; top-down; bottom-up; mutual enhancement	Mechanism design
B1-118	Policy integration; system promotion; whole-process support from the government; institutional innovation	Government policy Mechanism design
B1-119	Innovative ideas; innovation outcome	Implementation effect
B1-120	Leading Enterprise	Leading Enterprise
B1-121	Extend the industrial chain; improve quality and efficiency	Socialized service system
B1-122	Deep processing; build brand	Socialized service system
B1-123	Practice test; continuous modification	Mechanism design
B1-124	Agriculture CEOs; market formation; time test	Agriculture CEO market
B1-125	Peasants’ trust; leadership trust	Government leadership support Trust mechanism
B2-001	Contract production to household; policy changes; food and clothing issues	Government policy
B2-002	Land abandoned; migrant workers; low income from agriculture	Environment change
B2-003	High income for migrant workers; no one to farm	Environment change
B2-004	Set up a model; professional cooperatives; supervisory board; agriculture CEOs	Mechanism design

B2-005	Cash crops; first round dividend	revenue sharing mechanism design
B2-006	Siphon effect; free to join the cooperative; free to withdraw from the cooperative; stable relations	Mechanism design
B2-007	Integrity awareness	Trust mechanism
B2-008	Expand scale; professional service organization	Socialized service system
B2-009	Mechanized planting; rising costs; shortage of labor	Intensive scale operation
B2-010	agriculture CEOs	agriculture CEOs
B2-011	Land abandoned	Environment change
B2-012	New things; concentrated farmland; organization and mobilization; establishment of cooperatives	Intensive scale operation
B2-013	Dividend income; government subsidy; large-scale planting; rapid development	Government policy
B2-014	Not easy to start	
B2-015	Honesty; high prestige	Trust mechanism
B2-016	Investigation and research; fine planting; development potential	Scholar participation
B2-017	Full-time agriculture CEOs	agriculture CEOs
B2-018	Mobilization and organization; land concentration; mechanized planting	Concentrated scale operation
B2-019	Work at the cooperative labor; relationship improvement; family harmony	Implementation effect
B2-020	agriculture CEOs succession	agriculture CEOs succession
B2-021	National Leadership inspection	Government participation
B2-022	Agricultural cooperatives	Agricultural cooperatives
B2-023	Long-term vision, large-scale operation	Agriculture CEO traits large-scale operation
B2-024	Invite to join the cooperative; emergence of the prototype	Establishment of cooperatives
B2-025	Large-scale operation, scientific and technological planting, active participation of peasants	Cooperative development, cooperative effectiveness
B2-026	Cooperative distribution	Revenue distribution
B2-027	Agriculture CEO training; certificate	Training system design
B2-028	Government subsidy	Government subsidy
B2-029	Inspection of Prime Minister Wang Yang	Central leadership attention
B2-030	Younger generation; agriculture CEO certificate	Younger generation; Agriculture CEO certificate
B2-031	Agriculture CEO certificate mortgage loan	Mortgage loan; policy support
B2-032	Apply for loans to purchase production equipment	Mechanized planting
B2-033	Agriculture CEO training	Training system design
B3-002	Age structure; few young people; return to the countryside to start a business	Environment change
B3-003	Rural development; young people	Environment change
B3-004	Comprehensive work; systematic project	Mechanism design
B3-005	Re-learning; agricultural knowledge; college study;	Mechanism design

	norm standards	
B3-006	New ideas; acceptance level; agricultural modernization; conceptual obstacles	Concentrated scale operation
B3-007	Agricultural machinery; replacing labor; agricultural production line; cost saving	Socialized service system
B3-008	Unified procurement; agricultural professional services; cost reduction	Socialized service system
B3-009	Personal IP; Cooperative IP; Brand awareness	Socialized service system
B3-010	Brand building; deep processing of agricultural products; adapting measures to local conditions	Socialized service system
B3-011	Development direction; target positioning; seeking truth from facts	Socialized service system
B3-012	Revenue guarantee; value creation; constant communication	Socialized service system
B3-013	Risk awareness; agricultural insurance; guaranteed revenue	Risk awareness
B3-014	Internship transition; on-site learning	Risk awareness
B3-015	Comprehensive understanding; standardization; practical learning; systematic training; agriculture CEO qualification certificate	Mechanism design
B3-016	Younger trend	Environment change
B3-017	Right to speak; sense of trust; election of supervisory board	Trust mechanism Mechanism design
B3-018	Agricultural co-cooperation system; fuzzy roles; clear boundaries	Mechanism design
B3-019	Agriculture CEO’s right to speak; agriculture CEO’s control right; board review; agriculture CEO’s execution; supervisory board supervision; financial system supervision	Mechanism design
B3-020	Employment contract; five-year term; dividend assessment; guaranteed revenue	Mechanism design Revenue sharing mechanism
B3-021	Financial system; government intervention; multi-party supervision; financial disclosure	Transparent disclosure mechanism Mechanism design
B3-022	The right to speak in rural areas; the cost of communication	Mechanism design
B3-023	Land shareholding; contact with peasants	Mechanism design
B3-024	Full risk proceeds; deterministic proceeds	Risk awareness
B3-025	Large scale of agriculture CEOs; halo of cooperatives; agriculture CEO market; post with certificate; government review	agriculture CEO market government participation
B3-026	Operation team; sign up separately	Mechanism design
B3-027	Dividend income; improve supervision	Mechanism design
B3-028	Cooperative differences	Mechanism design
B3-029	Financial unification; government supervision; cost internalization	Mechanism design
B3-030	Shortage of young people; rural revitalization; basic skill workers	Environment change
B3-031	Climate impact; sound mechanism; agricultural insurance; field crops	Environment change
B4-001	Production team; segmented planting; large-scale planting; unified formation	Mechanism design Concentrated scale operation

B4-002	Reform tasks; put into production to increase efficiency	
B4-003	Asset income; financial funds; equity quantification; dividends to all participants	Mechanism design Revenue sharing mechanism
B4-004	Inspect and learn; cash crop planting	Socialized service system
B4-005	Agricultural deep processing; brand and trademark; company cooperation; industry chain extension; tertiary industry	Socialized service system
B4-006	Company cooperation; brand building; industry chain extension	Socialized service system
B4-007	Land desertion; labor loss; return to hometown to start a business; concept change; responsibility for poverty alleviation; agriculture CEO training	agriculture CEO training
B4-008	Cooperatives are difficult to get started; cooperative reorganization; supervisory board election	Mechanism design
B4-009	Cadre status; responsibility for poverty alleviation	Mechanism design
B4-010	Peasants’ sense of trust; fear of communalization; dividend ratio; risk revenue	Trust mechanism Risk awareness
B4-011	Cadre status; requirements for poverty alleviation; production specialists; formal elections; process norms	The generation of supervisory member, executive member and agriculture CEO
B3-012	Block operation; party committee leadership; economic system; industrial development; economic cooperatives	Mechanism design Socialized service system
B4-013	Moderate operation; scale control; focus on increasing efficiency; fine planting	Operation ability of agriculture CEOs
B4-014	Rapid establishment	Operation efficiency
B4-015	Training and learning; re-employment; fiscal capital; shortage of technology	Operation operation process; profit and loss status
B4-016	Hard to sell; grain bank; approval of the Prime Minister; forced reform	Operation operation
B4-017	Member congress; combination of village and cooperative	Corporate governance supervisory board, executive board; agriculture CEO checks and balances
B4-018	Shareholding cooperative; combination of village and cooperative	Corporate governance
B4-019	Cooperative mechanism; mechanism stacking; five-year term	Corporate governance Generation of supervisory director
B4-020	Legal representative; grassroots participation	Corporate governance Generation of supervisory and executive members
B4-021	Leading role; cooperative governance	Diversification of operations Retain labors for agriculture
B4-022	Open competition; pay deposit; fulfill promise	Generation of agriculture CEOs;

		deposit (collateral)
B4-023	Agricultural co-operation; incentives; fierce competition; stable agriculture CEO supply	Operation performance Selection and generation of agriculture CEOs; agriculture CEO constraints;
B4-024	Agricultural operation; efficiency increase and income increase; scale expansion; industrialized increase of efficiency; extension of industry chain	Operation operation Agricultural industry chain
B4-025	Community with a shared future; pledge of guarantee; differences existence	Community with a shared future; incentives and constrains
B4-026	stable agriculture CEO supply; party building leadership; grassroots organizations	Agriculture CEO market
B4-027	Normal operation; recognized by the people; operation operation	Continuous operation Operation ability
B4-028	Agricultural disasters; agricultural insurance; field planting	Operation decisions
B4-029	Agricultural co-operation system; No.1 document; nation-wide generalization	National system
B4-030	Institutional innovation; large-scale planting; re-increasing efficiency of agriculture; extension of industry chain; brand building; agricultural supply chain	Institutional innovation Innovation of agricultural industry chain
B4-031	Agricultural cooperatives; agriculture CEO system	Mechanism design
B4-032	Mechanized planting, cost reduction and efficiency increase	Mechanized planting, cost reduction and efficiency increase
B4-033	Large-scale operation	Large-scale operation
B4-034	Seize the opportunity; speed up construction	Seize the opportunity for development
B4-035	Diversified operation	Diversified operation
B4-036	Fiscal investment	Government support
B4-037	Revitalize assets; expand collective economic organizations	Revitalize assets; expand collective economic organizations
C-001	Practice; observation of the grassroots; selection of agriculture CEO	Generation of agriculture CEO
C-002	Younger generation; ideas sharing; mutual learning	Generation of agriculture CEO
C-003	convinced grassroots; the selection of executive directors	Trust mechanism
C-004	Seasonal meetings; timely communication	Cooperative governance mechanism
C-005	Cooperative guarantee system; strong cohesion	Operating performance and expectations
C-006	Grassroots participation; major decision-making	Governance structure
C-007	The pursuit of quality	Continuous operation and development
C-008	Large-scale subsidy; insurance system; risk reduction	Revenue sharing mechanism
C-009	Revenue increase; the well-being of peasants	Operation performance

C-010	Agricultural product sales; brand promotion; product operation	Operation system
C-011	Assessment system; public approval	Assessment system
D-001	Idle capacity; agricultural products selling	Environment change
D-002	Agricultural added value exploring	Service system
D-003	Local brand building; government push	Government role
D-004	meeting on time; financial supervision	Corporate governance
D-005	New type of collective economic organization; overall planning	Risk awareness
D-006	Some cash crops; increase revenue to keep the labor	Diversified operation
D-007	Revitalize construction land	Constant innovation
D-008	The hollowing out of cooperatives; grassroots organizations	Environment change
D-009	Agriculture CEO constrains	Corporate governance
D-010	Intuitional change	Constant innovation
E-001	Increase in income; trust cooperatives	Satisfaction rate
E-002	Revenue sharing	Rational revenue distribution
E-003	Grassroots satisfaction; strong coverage	Satisfaction rate
E-004	Effective information transmission; strong grassroots participation	Grassroots participation
E-005	Grassroots approval; selection of agriculture CEO	agriculture CEO incentives
E-006	Diversified income structure	Diversified income structure
E-007	Revenue increase; the well-being of peasants	Satisfaction rate
E-008	Mostly mechanized	Concentrated scale operation
E-009	Stable dividends; developmental construction	Social service

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Annex F: Target and Task Schedule of Township Land Shareholding Cooperatives in Chongzhou in 2013

development area	township	Grain area reported by townships	Area of direct grain subsidy in 2012	Completion in 2012 accepted area	households		Plan in 2013 target tasks	operation	
				unified target					
whole-town promotion	Qiquan	6000	18015.5	5156.8	1214	1561.92	4150	6000	2000
	Longxing	16208	16169.6	9238.69	2895	3873.37	4100	12000	4500
	Jixian	14310	14356.2	5321.49	1784	1924.55	3650	10000	3000
	Liaoyuan	20128.9	25569.5	9366.12	3477	3547.81	6350	16000	4800
	Jiangyuan	14950.2	19582.9	6530.03	2429	2461.01	5200	11000	3500
	Jinjiang	12080	14816.6	6187.51	1918	2134.91	3500	10000	3000
	Baitou	11388	14229.9	4630.55	1540	1647.82	3600	8000	2500
	Wangchang	16602	22036.6	6213.62	2024	2011.89	5500	10000	3000
	Yuantong	10064.7	15969.8	4044	2153	1594	4000	8000	3000
key promotion	Jixie	9953.9	12441.9	2703.65	747	901.35	2300	8000	2500
	Huaiyuan	36431.9	48556.9	9732.8	3281	3129.04	7400	18000	5400
	Sanjiang	29266.5	32718.4	7017.62	2618	2280.67	6550	8000	2500
	Daoming	12341	23603.2	3888.09	1246	1335.09	3600	6000	1800
	Gongyi	8705.27	16428.9	3317.73	979	1008.03	3250	5000	1500
	Chongyang	7441.5	18910.3	4489.58	1259	1504.75	2900	6000	2000
	Yangma	6350	10539.4	2621.79	746	1210.59	2300	5000	1500
general promotion	Guansheng	8725	13957.8	2558.62	1017	770.95	2800	3000	1000
	Jiezi	7100	17531.4	422.02	134	126.82	2500	1000	300
	Dahua	7031	15496.4	662.55	256	203.38	1600	1600	500
	Liaojia	1750	11372.3	201.5	60	70.5	2250	1000	300
	Chongping	3250	12388.5	1663.53	644	752.35	2500	3000	1000
in total		260078	394693	95968.3	32421	34050.8	80000	156600	47480
peasants' professional cooperative	Zitong	Develop more than 3 standardized professional cooperatives							
	Jiguanshan	Develop more than 3 standardized professional cooperatives							
	Wenjingjiang	Develop more than 3 standardized professional cooperatives							
	Shanlang	Develop more than 3 standardized professional cooperatives							

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Annex G: Articles of Association of Chongzhou Yangliu Rural Land Shareholding Cooperative

Chapter 1: General Provisions

Article 1: In order to speed up the construction of urban agriculture, explore the circulation mechanism of contractual operation of rural land, optimize the allocation of land resources, improve the efficiency and economic value of land use, and earnestly safeguard the interests of peasants, in accordance with relevant national laws, regulations and policies, the “Chongzhou Yangliu Rural Land Shareholding Cooperative” (hereinafter referred to as the cooperative) has been established.

Article 2: The address of this cooperation is Group 15, Liba Village, Longxing Town, Chongzhou city.

Article 3: This cooperative is a peasant cooperative economic organization that shares the right to contractual operation of land and adheres to the principle of “private operation, private supervision and mutual benefit”. The cooperative implements independent accounting, self-financing, self-operation, self-restraint and democratic operation.

Article 4: Operation scope and mode: Engage in modern agricultural production and scale operation.

Article 5: The cooperative strictly abides by national laws, regulations and policies and accepts the supervision and inspection of Longxing Town Party Committee, the local government and supervision and operation departments in accordance with the law.

Chapter 2 Shareholders and Equity Establishment

Article 6: Shareholders. Members of 15 groups of collective economic organizations in Liba Village, Longxing Town, recognize the articles of association of the cooperative and voluntarily take the right to contractual operation of land as shareholders of the cooperative, with households as units.

Article 7: Equity identification. The confirmation of shares is based on the land area of the contractual operation right.

Article 8: Agreement period for shares: May 30, 2010 to May 30, 2011.

Article 9: Equity setting, the total initial shares of the cooperative are 9,557 shares. The contractual operation right for every 0.01 mu of land is 1 share, with households as the unit.

Article 10: The equity can be inherited, transferred or mortgaged with the consent of the cooperative, and shall not be withdrawn during the period of the agreement.

Article 11: After the land is taken in, the cooperative shall issue a certificate of equity to the shareholders in the form of registered name, which shall serve as the certificate of equity and the basis for dividends for the shareholders.

Chapter 3 Rights and Obligations of Shareholders

Article 12: Shareholders shall enjoy the following rights:

1. Enjoy the right to vote and be elected.

2. Attend the shareholders’ representative meeting and exercise voting rights in accordance with the provisions of the articles of association.

3. According to the provisions of the articles of association, enjoy the dividend distribution of this cooperative according to the share of shares.

4. Have the right to propose on the work of the cooperative and conduct democratic supervision over the fund management of the cooperative.

5. Have the right to report violations of law and discipline by the staff of the cooperative to the superior.

6. After the termination of the cooperation, obtain the shares of the contractual operation right according to law.

7. Other rights stipulated in the articles of association of the cooperative.

Article 13: Shareholders shall perform the following obligations:

1. Abide by the articles of association and various rules and regulations of the cooperative.

2. When the shares are expropriated or requisitioned according to law, one must obey the unified plan and enjoy compensation for land expropriation and occupation funds according to law.

3. Implement the resolutions of the shareholders’ meeting and various regulations of the executive board, safeguard the image of the cooperative, actively fulfill the duties for the development of the cooperative, and do not do any activities that harm the interests of the cooperative.

4. Fulfill relevant obligations stipulated by national laws and regulations.

5. Other obligations stipulated in the articles of association of the cooperative.

Chapter 4 Organizational structure

Article 14: The shareholders’ assembly is the highest authority of the cooperative. The number of shareholders’ representatives is 31 and they are directly elected by shareholders for a term of three years.

The shareholders’ representative meeting shall be held at least four times a year. In case of special circumstances or proposal by half of the shareholders’ representatives, a shareholders’ representative meeting may be convened temporarily. The shareholders’ representative meeting can only be held when more than two-thirds of the representatives are present, and it is valid only when more than half of the representatives present agree. The one-person-one-vote system is implemented in election and voting.

The shareholders’ representative meeting shall exercise the following functions and rights:

1. Adopt and amend the articles of association.

2. Elect or recall of members of the executive board and the supervisory board.

3. Listen to the work reports of the executive board and the supervisory board.

4. Review and approve the cooperative development plan, land use development plan and profit distribution plan.

Article 15: The executive board is the permanent body of the shareholder meeting of the cooperative. The executive board is composed of 3 people. The directors are recommended by the shareholders' representatives and elected by the shareholders’ representative meeting. Each term of office is 3 years and can be re-elected. The executive board shall have a director, who shall be elected by the board. The director is the legal representative of this cooperation.

The executive board shall exercise the following functions and rights when the shareholders’ representative meeting is not in session:

1. Implement the resolutions of the shareholders’ meeting.

2. Appoint and dismiss full-time and part-time responsible persons of the departments subordinate to the cooperative.

3. Be responsible for convening the shareholders’ representative meeting and give the work report.

4. Formulate the cooperative development plan, investment plan and annual distribution

plan, and implement various plans approved by the shareholders’ meeting.

5. Formulate the operation system of this cooperation.

6. Other functions and rights granted by the shareholders’ representative meeting.

The meetings shall be held at least once every six months and convened by the director. Resolutions and decisions of the executive board shall be valid only if they are adopted by more than half of the members on the basis of one person, one vote.

Article 16: The supervisory board is the supervisory body of the cooperative. The supervisory board shall consist of three persons. Supervisors shall be elected by the shareholders’ meeting, and the supervisory board shall have a director, who shall be elected by the supervisors. The term of office of the supervisor is 3 years, with re-election permitted. The supervisory board shall not include members of the executive board and the person in charge of finance.

The supervisory board shall exercise the following functions and rights: inspect the social affairs and finance of the cooperative and announce the results at the shareholders’ representative meeting. The executive board shall not damage the interests of this cooperation. Send personnel to attend the board meeting as nonvoting delegates.

Chapter 5 Financial System and Income Distribution

Article 17: Adhere to the principles of equity equality, risk sharing, profit sharing and accumulation.

Article 18: In accordance with the Accounting Law of the People’s Republic of China, the Financial System of Rural Cooperative Economic Organizations and the Accounting System issued by the Ministry of Finance and the Ministry of Agriculture, financial operation and accounting shall be strengthened and democratic operation and supervision shall be implemented. Implement financial disclosure and regularly announce financial revenue and expenditure and asset operation to shareholders.

Article 19: The income of this cooperative mainly comes from land operation.

Article 20: Income distribution. Earnings are distributed by shares after 10% public fund and risk fund are retained or it can be totally distributed. The distribution plan shall be implemented after being examined and approved by the shareholders’ representative meeting.

Article 21: The cooperative shall distribute dividends once a year and cash them after the settlement in the year end. Shareholders shall receive dividends based on the Equity Certificate.

Chapter 6 Supplementary Provisions

Article 22: Shareholding cooperatives shall implement the relevant policies and regulations on the operation of contracted land in rural areas of provinces and cities, and perform various obligations.

Article 23 If the articles of association are in conflict with national laws and regulations, they shall be implemented in accordance with national laws and regulations.

Article 24 The executive board shall be responsible for the interpretation of this Articles of Association.

Article 25 The Articles of Association will come into effect after being approved by the first shareholders’ meeting on May 30, 2010.

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Annex H: Questionnaire on Implementation Effectiveness of the “Agricultural Co-Operation System” (ACOS)

Dear Sir/Madam,

Thank you for participating in the survey.

This questionnaire is a fundamental survey of the research on “Agricultural Co-Operation System” (ACOS). The survey is conducted anonymously. All answers shall be treated with confidentiality and used for academic research only.

We really appreciate that you have completed this questionnaire. Your support will make our research more valuable!

Part one: Survey on implementation effectiveness of the ACOS

Please rate your level of agreement or disagreement with each of the following statements. Choose a rating that best applies from a scale of “1”to “6”, where “1” represents “strongly disagree” and “6” represents “strongly agree”.

Items	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1. The Executive Board plays an important role in the Land Shareholding Cooperative (hereinafter referred to as “the LSC”).	1	2	3	4	5	6
2. The Supervisory Board plays an important role in the LSC.	1	2	3	4	5	6
3. The LSC has a reasonable governance structure.	1	2	3	4	5	6
4. Farmers who join the LSC have active participation in the operation and management of the LSC.	1	2	3	4	5	6
5. Financial disclosure plays an important role in the operation of the LSC.	1	2	3	4	5	6
6. Professional agriculture managers (agriculture CEOs) play an important role in improving the overall revenue of the LSC.	1	2	3	4	5	6

Items	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly

						gly agr ee
7. It is essential to train agriculture CEOs.	1	2	3	4	5	6
8. Incentive mechanism for agriculture CEOs plays an important role in retaining the agriculture CEO team.	1	2	3	4	5	6
9. Agricultural technology plays an important role in the revenue of the LSC.	1	2	3	4	5	6
10. Agricultural specialized services play an important role in the revenue of the LSC.	1	2	3	4	5	6
11. Quality of the agricultural input factors plays an important role in the revenue of the LSC.	1	2	3	4	5	6
12. Agricultural brand marketing plays an important role in the revenue increase of the LSC.	1	2	3	4	5	6
13. Rural e-commerce plays an important role in the product sales of the LSC.	1	2	3	4	5	6
14. Agricultural informatization plays an important role in the development of the LSC.	1	2	3	4	5	6
15. Rural property rights mortgage loan plays an important role in the industrial development of the LSC.	1	2	3	4	5	6
16. Agricultural insurance plays an important role in the risk prevention of the LSC.	1	2	3	4	5	6
17. Property rights claim and certificate issuance of the contracted land plays an important role in farmers’ willingness of joining the LSC.	1	2	3	4	5	6
18. Subsidy for large-scale grain plantation plays an important role in the operation of the LSC.	1	2	3	4	5	6
19. Minimum protective price for grain purchase plays an important role in the operation of the LSC.	1	2	3	4	5	6
20. Joining the LSC effectively increases farmers’ income.	1	2	3	4	5	6
21. Earnings distribution mechanism of the LSC is reasonable.	1	2	3	4	5	6

22. The appropriate term for farmers to join the LSC is:

○ 1~2 years

○ 3~4 years

○ 5-6 years

○ 7-8 years, till 31st, 12, 2027, the end of 2nd round land contracting

23. The appropriate coverage of managerial span for an agricultural CEO is: (1 Mu=0.0666667 hectare)

○ 50~100 Mu

○ 100~300 Mu

○ 300~500 Mu

○ 500~1000 Mu

○ Over 1000 Mu

Part two：Information of respondents

24. Gender:

○ Male ○ Female

25. Age:

○ 18~29 ○ 30~39 ○ 40~49 ○ 50~59 ○ Over 60

26. Education Level:

○Primary school ○Junior high school ○Senior high school/ Vocational high school/ Technical secondary school ○Collegial ○Graduate schooling

27. Your identity (ies) in the LSC (multiple choices are allowed):

○Farmer joining the LSC ○Director/Member of the Executive Board

○ Director/Member of the Supervisory Board ○ Agriculture CEO

○Socialized service enterprise

28. If your household has joined the LSC, please fill the following information in number:

1）Total area of the contracted land: ( ) Mu

2）Area of contracted land invested in the LSC: ( ) Mu

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Annex I: Descriptive Statistical Results of Satisfaction Surveys

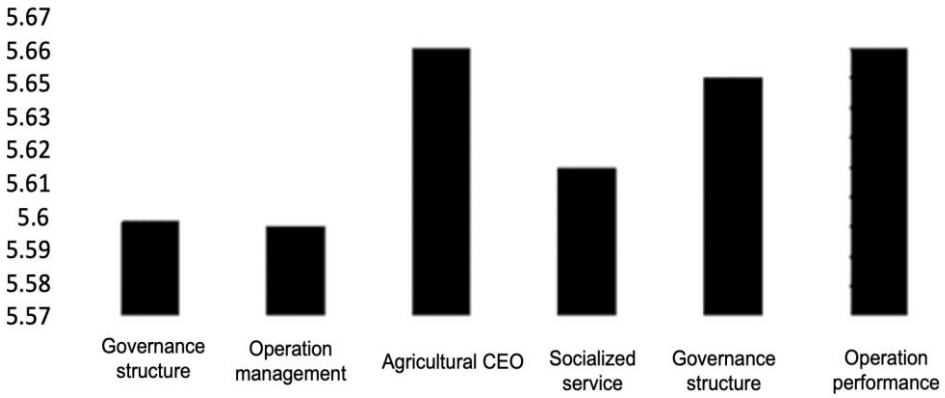
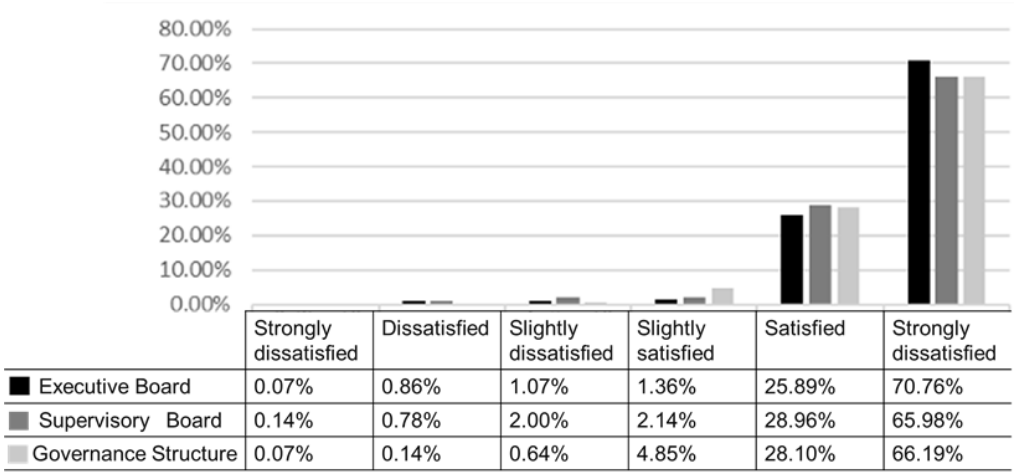


Figure 1: Distribution of the means satisfaction rate

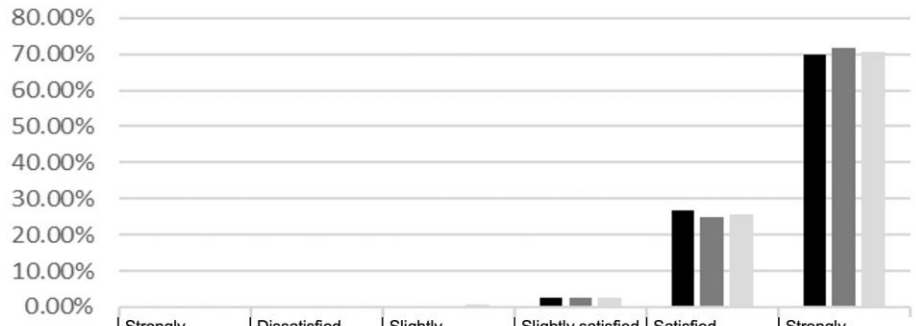


	Strongly dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Strongly dissatisfied
Executive Board	0.07%	0.86%	1.07%	1.36%	25.89%	70.76%
Supervisory Board	0.14%	0.78%	2.00%	2.14%	28.96%	65.98%
Governance Structure	0.07%	0.14%	0.64%	4.85%	28.10%	66.19%

Figure 2: Satisfaction rate of the governance structure

	Strongly dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Strongly dissatisfied
Peasant participation	0.14%	0.57%	1.28%	2.21%	30.39%	65.41%
Financial disclosure	0.21%	0.29%	0.43%	3.07%	28.25%	67.76%

Figure 3: The satisfaction rate of the operation

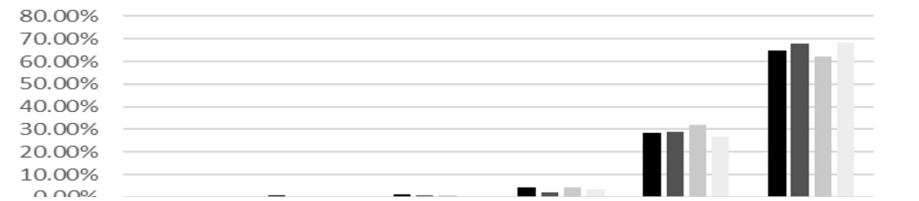


	Strongly dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Strongly dissatisfied
Agriculture CEO role	0.14%	0.36%	0.29%	2.57%	26.68%	69.97%
Agriculture CEO training	0.07%	0.21%	0.43%	2.43%	24.96%	71.90%
Agriculture CEO incentives	0.14%	0.07%	0.64%	2.64%	25.75%	70.76%

Figure 4: Satisfaction rate of agriculture CEO

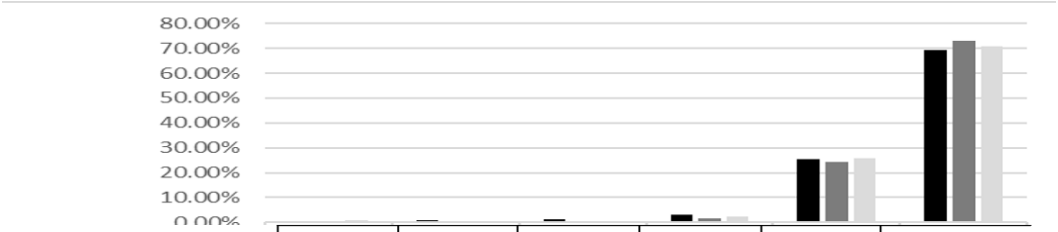
	Strongly dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Strongly dissatisfied
Agricultural technology	0.07%	0.21%	0.50%	1.64%	25.91%	71.66%
Professional service	0.14%	0.14%	0.43%	2.50%	27.03%	69.76%
Agricultural input	0.21%	0.07%	0.64%	2.71%	25.68%	70.68%
Branding & marketing	0.14%	0.71%	0.29%	3.71%	28.96%	66.19%

Figure 5a: Satisfaction rate of socialized services



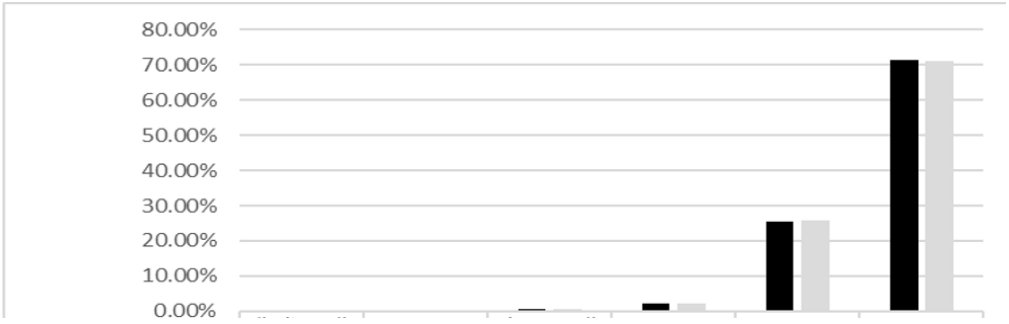
	Strongly dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Strongly dissatisfied
Rural e-commerce	0.14%	0.86%	1.43%	4.56%	28.25%	64.76%
Agricultural digitalization	0.14%	0.14%	1.00%	2.21%	28.67%	67.83%
Property rights mortgage	0.21%	0.43%	0.93%	4.28%	32.10%	62.05%
Agricultural insurance	0.21%	0.57%	0.50%	3.42%	26.82%	68.47%

Figure 5b: Satisfaction rate of socialized services



	Strongly dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Strongly dissatisfied
Rights confirmation	0.14%	0.71%	1.21%	3.00%	25.53%	69.40%
Subsidy	0.14%	0.57%	0.50%	1.43%	24.25%	73.11%
Price protection	0.71%	0.14%	0.29%	2.43%	25.68%	70.76%

Figure 6: Satisfaction rate of policy supports



	Strongly dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Strongly dissatisfied
Increase	0.29%	0.07%	0.64%	2.21%	25.32%	71.47%
Revenue Distribution	0.21%	0.21%	0.50%	2.28%	25.89%	70.90%

Figure 7: satisfaction rate of the economic performance

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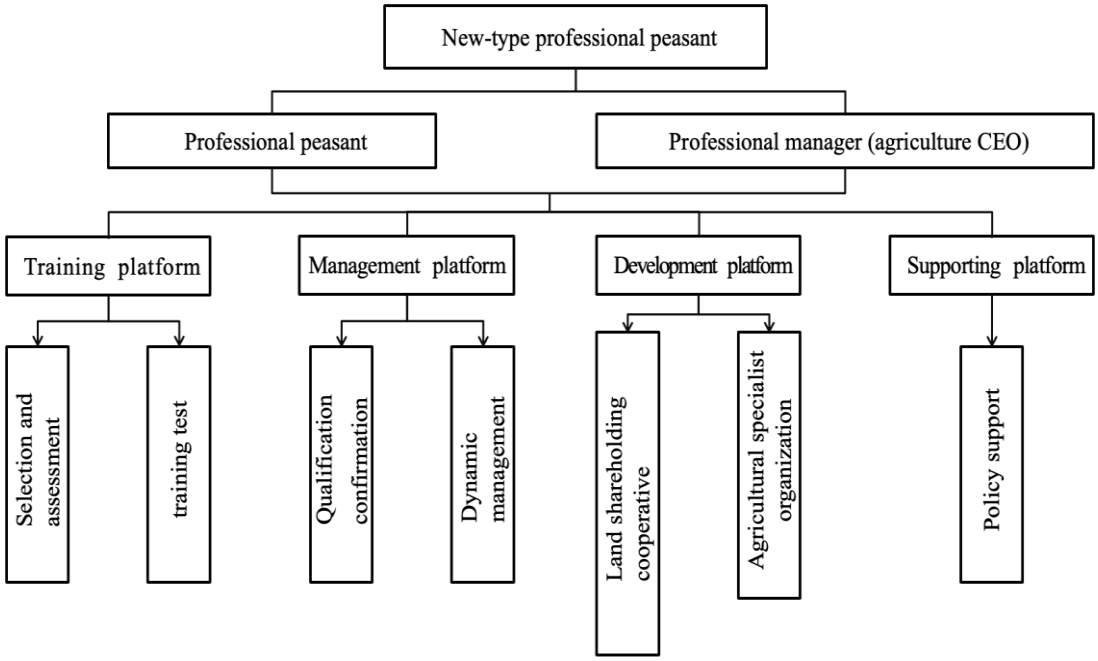
Annex J: The New-type Professional Peasant Training System



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Annex K: New Professional Farmer Training System

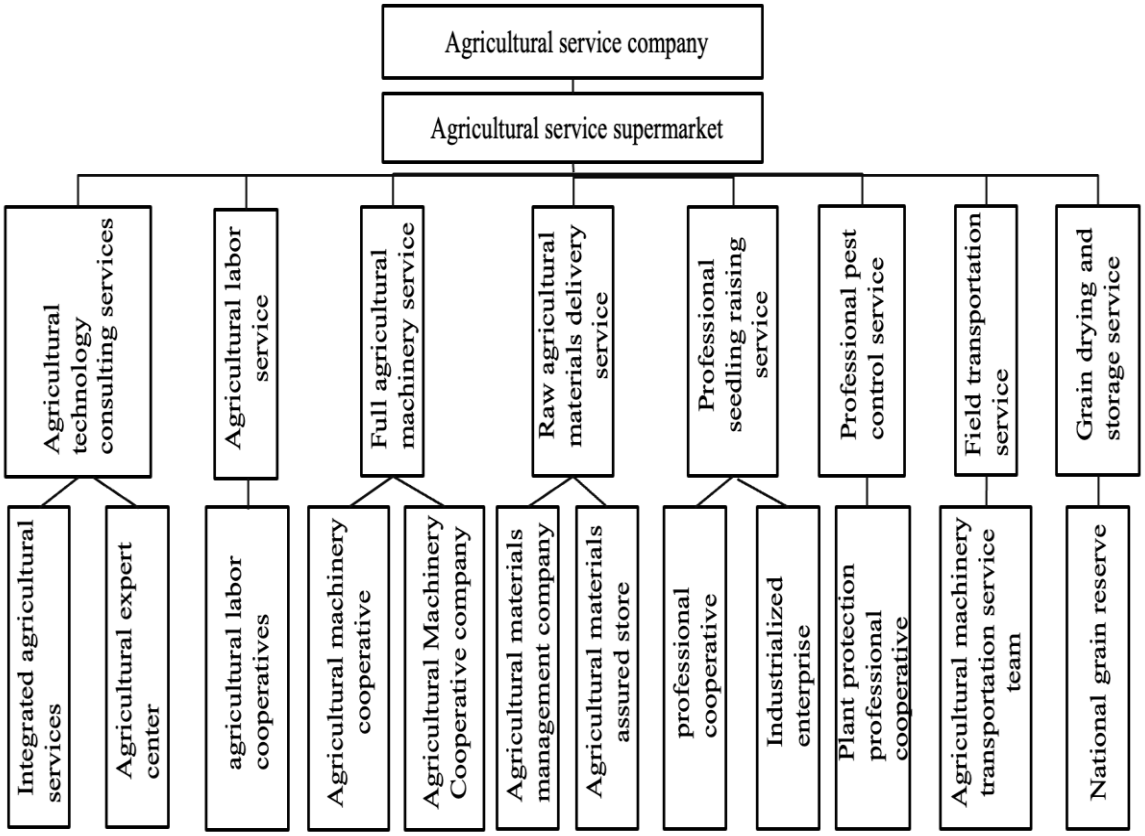

Figure 1: Schematic diagram of new-type agricultural technology services

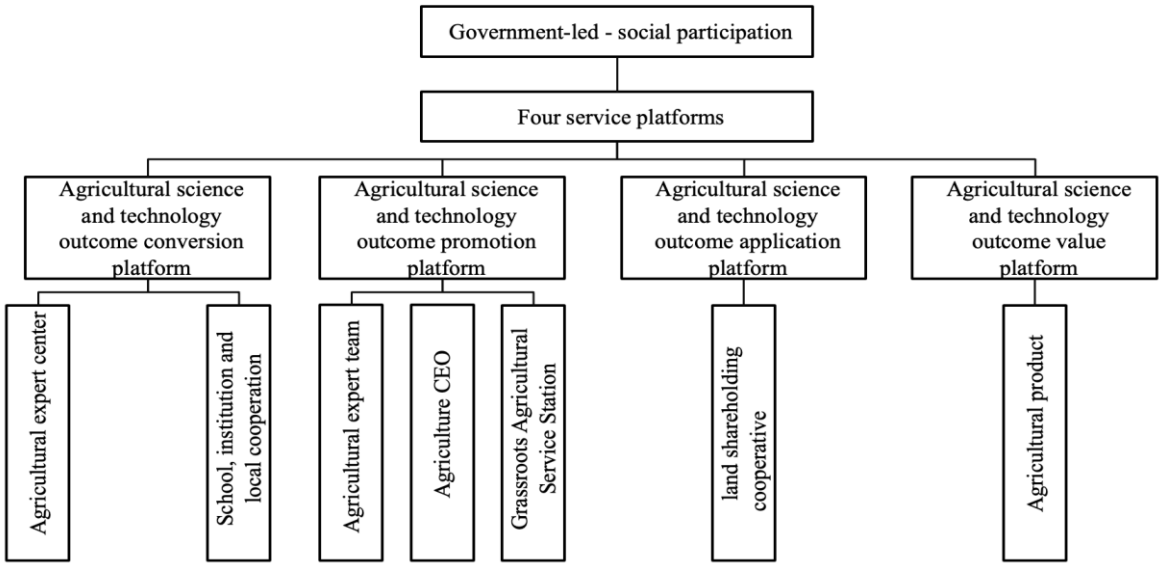

Figure 2: Schematic diagram of professional service organization

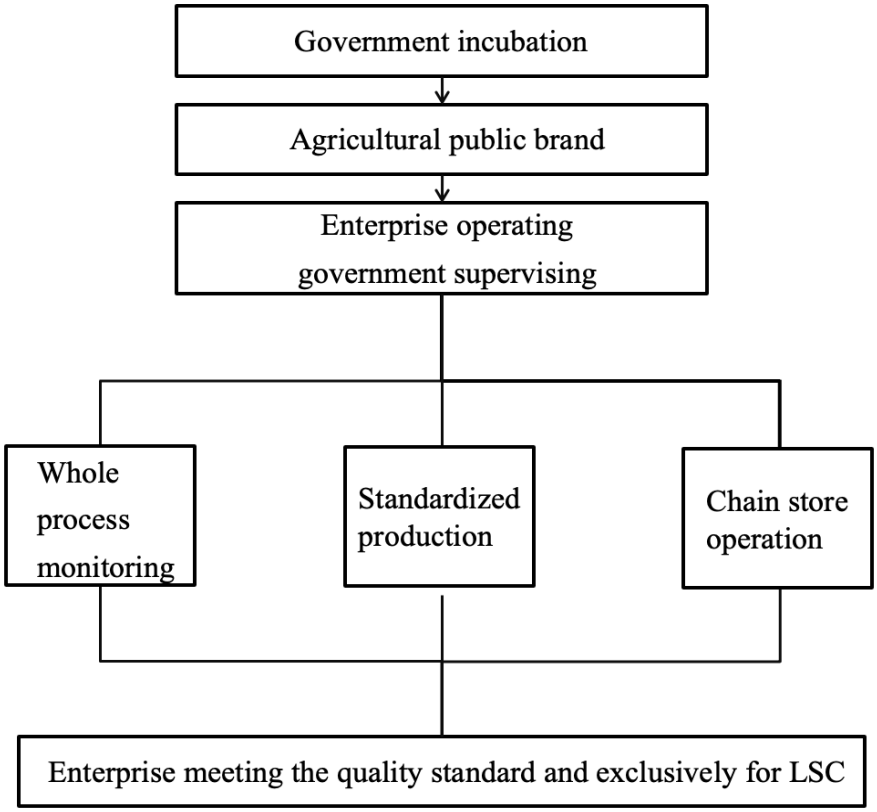

Figure 3: Schematic diagram of public branding operation

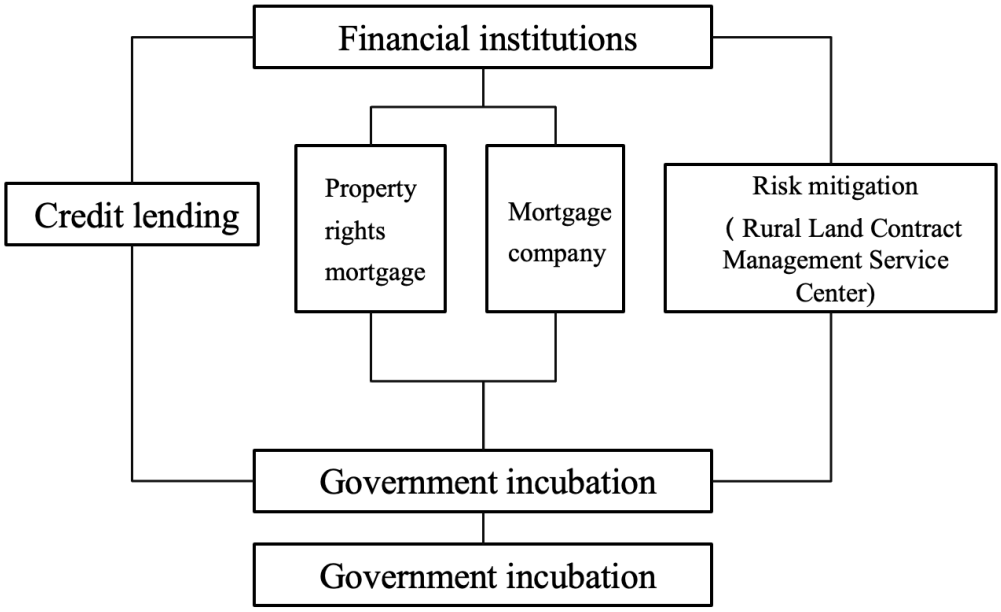

Figure 4: Schematic diagram of rural financial services