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To cite this article: Peng peng Tian *et al* 2020 *IOP Conf. Ser.: Earth Environ. Sci.* **546** 032003

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The Development Process, International Experience and Breakthrough Direction of Agricultural Supply side Structural Reform

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Abstract. China's agricultural supply side structure has experienced three major changes, but the effect is not obvious, so it is necessary to trace its roots and make a breakthrough. This paper explores the key points and difficulties in the three stages of China's agricultural supply side reform, and finds that China's agricultural supply side structural reform needs to break through three core points: removing the high inventory of main agricultural products, reducing farmers' production costs, and making up for the safety and quality of agricultural products and the short board of ecological environment. Combined with the reform experience of the United States, Canada and India, this paper proposes to establish a diversified "government + market" policy regulation system, reduce agricultural production cost through multiple channels, improve agricultural production level, supplement the short board of modern agricultural production, realize sustainable green production, and seek an effective breakthrough in agricultural supply side structural reform.

1. Introduction

In recent years, the frequent problems in the field of agriculture have attracted wide attention of the political and academic circles, and most of the reasons for these problems are on the supply side. The continuous upgrading of the consumption structure of agricultural products, the decline of the international competitiveness of agriculture, the increasing production and income of farmers due to the imbalance between supply and demand, agricultural pollution and ecological environment problems are becoming increasingly serious [1]. The problems faced by the development of agricultural economy are long-term and structural, which must be solved through the supply side structural reform.

In order to solve the problems of agricultural supply side, the "structural reform of agricultural supply side" came into being in 2016. How to make full use of supply side structural reform to realize agricultural modernization? There are two main points of view: some scholars think that we should seek the key direction of reform from the historical stage and development status of China's agricultural structural adjustment. By reviewing the stage, connotation and problems of China's agricultural structural adjustment, this paper holds that China's agricultural supply side reform should clarify the key points of reform, optimize structural adjustment and factor allocation, realize large-scale operation and industrial integration, and accelerate the structural reform of agricultural supply side [2]. Some scholars also use the advanced experience of foreign countries in China's agricultural supply side structural reform to seek new breakthroughs in the reform. Scholars believe that we should



learn from the supply side adjustment experience of the United States, Canada, Israel and other major agricultural countries, make clear the government's position, build perfect laws and regulations and supporting facilities, complete market mechanism, modern business mode and attach importance to scientific and technological promotion and other modern agricultural measures, so as to promote the informatization and intelligent development of agriculture [3]. Different scholars get different conclusions from different perspectives, but the single analysis from domestic reform and development and the reference from foreign experience are too one-sided. This paper combines the two, starting from the current situation and historical stage of domestic supply side reform, to explore the key and difficult points of China's agricultural development, and then learn from foreign development experience, find out the common ground and advantages of the two, and explore the new way of agricultural supply side reform?

Based on the above analysis, starting from the process of China's agricultural supply side structural reform, this paper analyzes several major stages of China's agricultural structural adjustment, finds three breakthrough points of China's agricultural supply side reform, looks for similar experience and policy guidance suitable for China's agricultural development in the advanced experience of foreign agricultural supply side reform as a reference, and puts forward China's agricultural supply side key ideas and development path of structural reform.

2. Historical stage and breakthrough focus of China's agricultural supply side structural adjustment

2.1. Connotation of China's agricultural supply side structural adjustment

Structure is to connect agricultural products with market demand, give full play to regional advantages, see the market for what kind and how much, and see the regional conditions and market structure for where. Optimize the structure of agricultural industry, extend the chain of agricultural industry, increase the added value of agricultural products, and promote the integration of agriculture and secondary and tertiary industries; changing the mode is to change the mode of production and management of agriculture, promote the "standardization, branding and green sustainability" of agricultural production and management, realize the standardized production and management, pay attention to the development of brand and green agriculture, and realize the feasibility of agriculture Sustainable development, give full play to the new main force of operation, improve the level of agricultural mechanization and information management under the guidance of science and technology, and promote the standardization and intensification of agricultural production and operation. To promote reform is to promote the reform and development of land, finance, entrepreneurship and other aspects of rural development at this stage, activate the elements of rural development, and provide impetus for the reform of agricultural supply side structure.

2.2. Three stages of agricultural supply side structural reform

According to Huang Zuhui and others, since the reform and opening up, China's agriculture has experienced three major adjustments and reforms, namely, the reform of insufficient agricultural supply in the late 1970s, the adjustment of single agricultural supply structure in the mid-1980s and the adjustment of agricultural strategic structure of excess agricultural supply in the mid and late 1990s [4]. The division is mainly based on major policy adjustments and changes. Different from Huang Zuhui's analysis of the three stages of China's agricultural supply side reform, this paper argues that we should divide it from the changes of China's agricultural supply side. Firstly, because of the increase of population and the improvement of people's living standards, the supply of agricultural products is insufficient, and the production structure of agricultural products must be optimized; the lack of supply will stimulate the government to formulate policies to improve production, while the excessive Production will lead to the relative surplus of agricultural products supply, so we must improve the distribution structure of agricultural products and adjust the relative surplus reasonably; finally, due to the needs of people's living level, we should pay attention to the quality of agricultural

products and the protection of ecological environment to promote the sustainable development of agriculture.

Table 1. Three stages of China's agricultural supply side reform

Stage	Supply system problems	Policy adjustment	Result
The first stage: insufficient agricultural production leads to insufficient supply of agricultural products	Shortage of supply quantity	Household contract responsibility system, price incentive and distribution incentive, price liberalization	The annual average growth rate of output is 49%, which has reversed the situation of serious food shortage for a long time
	Deficiency of production type	Develop diversified operation, moderately relax grain policy, and open up prices of other agricultural and sideline products	The output of other types of agricultural products has been improved to basically meet diversified needs
The second stage: relative overproduction, more supply of agricultural products	Surplus caused by the relative quantity of agricultural products	(1) In the 1990s, documents were issued to develop agricultural industrialization management, to help farmers enter the market and solve the problem of selling; to promote the structural adjustment of agricultural strategy; and (2) to implement the supply side structural reform de stocking in 2015	(1) No good effect has been achieved; (2) gradually solve the problem by de stocking in 2015
	Surplus caused by low quality of agricultural products	(1) In the mid-1990s, strategic structural adjustment was carried out; (2) in 2015, agricultural production and supply were regulated, quality was promoted, market structure was regulated, and production quality was improved through science and technology	(1) The effect is not good; (2) gradually reduce inventory and improve the quality of agricultural products
The third stage: pay attention to the quality of agricultural products and the ecological environment	Demand for safety, quality and good ecological environment	Carry out the supply side structural reform and the strategy of developing agriculture by quality, and establish the ecological concept of "green water and green mountains are golden mountains and silver mountains"	Gradually improve the environment and the quality of agricultural products

2.2.1. The first stage: insufficient supply of agricultural products due to insufficient agricultural production (from the late 1970s to the late 1980s). The shortage of agricultural production in this stage leads to less supply of agricultural products, which is mainly reflected in the lack of supply of quantity and type of agricultural products. The measures taken are mainly to stimulate production and improve production efficiency through the change of production factors.

(1) The lack of agricultural production. In the late 1970s, due to the centralized purchase, marketing and distribution of planned economy, the enthusiasm of labor production was low, and the production of agricultural products was seriously insufficient. The government carried out the reform of agricultural management system, implemented the household contract responsibility system, introduced price incentive and distribution incentive, liberalized the price of agricultural products, and improved the enthusiasm of farmers' production. Grain production increased from 304 million tons in 1978 to 407 million tons in 1984, with an average annual growth of 49%, reversing the long-term and

serious food shortage in China [4]. At this stage, the reform focuses on stimulating agricultural production through system and price reform.

(2) The shortage of agricultural products. At this stage, more emphasis is placed on food production, resulting in less output of other agricultural products, and the types of agricultural products can not meet the market demand and development needs. In the mid-1980s, due to the over emphasis on food production, the food industry was in excess while the supply of other agricultural products was seriously insufficient. The types and quantity of agricultural products on the market were too monotonous to meet the diversified needs of people for the types of agricultural products, and the supply of agricultural products encountered great challenges. In 1985, the Central Document No. 1 made adjustments to stabilize grain production, carry out diversified operations, encourage the production and price liberalization of other agricultural products, and greatly adjust the structure of agricultural products. By 1995, the output of pig, cattle, mutton, aquatic products, eggs, milk and fruit had increased 1.8 times, 3.1 times, 2.9 times, 1.6 times and 3.3 times, respectively, compared with 1984, which basically met the diversified demand of urban and rural residents for agricultural products. The focus of reform is to stimulate the adjustment of industrial structure through the adjustment of price and management policy.

2.2.2. The second stage: the production is relatively surplus and the supply of agricultural products is large (from the mid-1990s to the mid-1990s). In this stage, due to the promotion of the supply quantity and types of agricultural products by policy guidance, excessive production of agricultural products will lead to overproduction of agricultural products. This overproduction is relative, and there are two reasons for its formation. One is the overproduction caused by the relative quantity of agricultural products, and the other is the overproduction caused by the low quality of agricultural products. Mainly through giving play to the role of market guidance and government regulation, controlling the expansion of demand and adjusting the structure to reduce the relative surplus of agricultural products.

(1) The surplus caused by the relative quantity of agricultural products. This kind of surplus is mainly caused by the unequal production and consumption of agricultural products. Too many agricultural products are produced, and the problems such as difficult to sell and export of agricultural products lead to the reduction of consumption, forming the surplus of agricultural products. In the mid-1990s, China's agricultural products were oversupplied and hard to sell. The government strongly encouraged the development of agricultural industrialization, promoted companies and enterprises to drive farmers into the market, and helped solve the problem of difficult sales of agricultural products. At the same time, we should vigorously promote the structural adjustment of agricultural strategy, adjust and optimize the spatial structure, quality structure, organizational structure and vertical structure of agricultural regions, improve the degree of agricultural organization, meet the market demand, and promote the industrialization and vertical integration of agriculture. However, this measure did not effectively solve the problem of surplus of agricultural products. The main reason lies in the lack of relevant policy system and mechanism innovation, which has been left behind until the structural reform of agricultural supply side in recent years, and gradually solve the problem. It is mainly to de stock, improve the relationship between supply and demand, and focus on reducing corn. In 2016, corn production was reduced by nearly 30 million mu, and more will be reduced in 2017. At this stage, the key point of reform is to solve the surplus through market stimulating consumption, but the lack of supporting mechanism makes it difficult to fully reflect the role of the market.

(2) Surplus caused by low quality of agricultural products. This stage is mainly due to the improvement of people's living standards, no longer meeting the quality and supply system of agricultural products at this stage, and the demand for better, better and more diversified agricultural products. Since 1995, the "Twelve consecutive increase" of China's grain output has resulted in the "three quantity increase" of output, inventory and import. The contradiction between supply and demand of agricultural products has become increasingly prominent. The phenomenon of "unable to buy" and "unable to sell" coexists, and the relative surplus of agricultural products has become increasingly serious. Therefore, in the mid-1990s, China's agriculture made strategic structural

adjustment. In this stage, the focus of reform is mainly to achieve structural adjustment through market stimulation and structural optimization, but the effect is not good. This problem still exists today. In 2016, the structural reform of agricultural supply side was proposed to reasonably regulate agricultural production and supply, and implement the strategy of developing agriculture by quality, according to the market Adjust the variety and structure of agricultural products, and improve the quality of agricultural products by using the level of science and technology.

2.2.3. The third stage: pay attention to the quality of agricultural products and the ecological environment (2017 ~) . In this stage, the agricultural development emphasizes more on the ecological environment and quality safety. The development brought about by the sacrifice of the environment leads to the deterioration of the ecological environment, and the increasing living standards of the people lead to the greater attention to the safety and quality of agricultural products. In China, at this stage, the people's increasing demand for a better life requires higher safety quality of agricultural products and a better ecological environment. The implementation of the supply side structural reform of agriculture and the strategy of quality agriculture gradually improves the safety quality of agricultural products. With the advent of the post industrial era, the Chinese people began to realize that it was wrong to destroy the ecological environment for development in the past. In accordance with the requirements of high-quality agricultural development, adhere to the development orientation of green ecology, promote green production, effectively implement the "one control, two reduction and three basic", and optimize the ecological environment and the quality of agricultural products .

2.3. Urgent problems in the course of reform and development

In the past years, the government has done a lot of work and adjustment in the stage of China's agricultural supply side structural adjustment, but what's the reason for the little effect? It can be found that the government regulates passively mainly through policies and instructions, and the market plays less active role. At the same time, the sequelae of "taking grain as the key" led to the high output of main grain, and a large number of stocks needed to be cleared. The low scale production leads to the high cost of farmers' production and further hinders the modernization of agricultural production. The improvement of the quality of agricultural products and the simultaneous progress of the ecological environment protection are the shortcomings of the current agricultural production in China, which need to make up for the short board of the modern agricultural development team. In short, China's agricultural supply side reform is in urgent need of breakthroughs in three aspects: destocking, reducing costs and making up for shortcomings.

Destocking means reducing the stock of agricultural products and speeding up their digestion. The "Twelve consecutive increase" of grain production has led to a very prominent contradiction in agricultural structure. The production of corn and other crops remained high. In the 10 years from 2004 to 2014, the corn production increased by 66% to 216 million tons [5]. There is an urgent need to reduce the planting area of corn in non dominant production areas, increase the area of other economic crops, adjust the development structure of planting and breeding and animal husbandry, and accelerate the formation of the ternary structure of coordinated development of grain, economy and feeding.

Cost reduction is mainly to reduce the production and operation costs of agricultural producers and increase the scale. The imperfection of China's agricultural production infrastructure seriously hinders agricultural production, with outstanding problems such as low mechanization, high cost of land transfer and high agricultural risk. However, the large-scale production and operation policies for new business entities such as family farms are not perfect. In 2016, the output of family farms accounted for 89% of the total output of American agriculture , and the circulation rate of China's agricultural land is only about 30% [6], which is regulated Compared with modeling, it is far away, more small enterprises, small farmers, and the level of agricultural industrialization is not high, which has become an urgent problem to be solved on the way to reduce farmers' production costs.

The remedy lies in meeting the development needs of modern agriculture, ensuring the high quality of agricultural products and the sustainability of agricultural production. The key is to make use of

modern science and information technology, formulate quality standards for agricultural products, improve the quality of agricultural products development, and make them meet the needs of the international market. At the same time, we need to make up for the ecological shortcomings. In 2016, the total area of soil erosion in China accounted for 31.1% of the total area, 70.7% of the urban air quality exceeded the standard, and 33.5% of the county's overall ecological environment quality was in poor and poor level. The current situation of ecological environment is not ideal. The deteriorating environment has brought the limitation of agricultural development resources, such as arable land and other resources, which makes agricultural production appear obvious short board and difficult to achieve sustainability.

3. International experience

3.1. Destocking America: dynamic adjustment of supply and demand balance of agricultural products

In the history of the United States, there have been three times of relative surplus in the supply of agricultural products and one time in the quantity of agricultural products. (1) After World War I, American farmers produced and exported a lot of food because they saw the demand market for food in Europe after the war. In the early 1930s, with the recovery of agriculture in Europe, there was a surplus of food in the United States, and the price of agricultural products fell sharply. The implementation of the reduction plan and the "price support" plan by means of the quota planting area and the limitation of the sales scale had little effect. The price support not only stimulated the production of farmers, but also reduced the consumption demand, resulting in the excessive supply of food [7]. (2) In the 1950s-1970s, technological progress in the United States promoted the further improvement of agricultural productivity, the increase of food supply, the continuous decline of market prices, and the increasing pressure on inventory. The government began to change its direction and cut back on "price support". Through the agricultural adjustment law, the policy of returning farmland was implemented, while stimulating demand to balance supply and demand and reduce inventory [8], which greatly alleviated the inventory pressure power. (3) In the 1970s, the international food shortage and the devaluation of the US dollar promoted the export of American agricultural products, gradually digested the domestic agricultural product inventory [9-10]. The serious shortage of agricultural inventory led to the lack of supply. The US government seized this opportunity, and the agricultural policy began to change from planning to market-oriented. In 1973, the agricultural and Consumer Protection Act was promulgated, which changed the way of payment of government subsidies, implemented differential subsidies based on the target price, constantly raised the target price, and encouraged farmers' production with higher loan rate and target price, which greatly improved agricultural production. (4) In the 1980s, the sharp decline in exports led to the surplus of agricultural products. The U.S. government encouraged the export of agricultural products and implemented price subsidies. It provided free agricultural products to low-income families, welfare homes, hospitals and other institutions. At the same time, it used advanced technology to process corn and other surplus agricultural products into medical raw materials such as ethanol, which greatly reduced the pressure on agricultural products inventory and slowed down to a certain extent Solved the domestic energy crisis. At the same time, after 1990, the government adopted the methods of Pik and LDP to clear the market and reduce inventory [11]. The implementation of this policy marks the formal transformation of American agricultural policy towards marketization [12].

Enlightenment: the reason why American agriculture has a good development momentum is inseparable from the government's reasonable adjustment of agricultural inventory, and "de Stocking" has always been the core of the dynamic adjustment of agricultural structure. The regulation policy is also gradually improving. After the simple price policy has little effect, it gradually cuts down the price support policy, turns to the market-oriented income subsidy, uses the market to regulate production and inventory, and finally establishes the agricultural product management system combining the market regulation and state intervention.

3.2. Cost reduction - Canada: reducing farmers' production costs

Canada, as a large agricultural country in the world, the government has been committed to stabilizing the grain production, at the same time, taking the marketization as the guidance, reducing the production cost of farmers and ensuring the income of farmers. Since the 1950s, the Canadian government has formulated a series of laws to support the income of farmers in agriculture, especially the agricultural stability act of 1955, which provides price protection for more than 20 kinds of agricultural products, such as soybeans and wheat, and ensures that farmers get a certain level of selling price (no less than 80% of the average price in the past 10 years) by means of government purchase or subsidies [13]. The western food stability act of 1976 provides a more stable income guarantee for food and oil crops in the western region. The government encourages farmers to join the agricultural insurance plan and establish agricultural compensation fund to reduce the impact of price fluctuation of agricultural products on Farmers' income. In addition, the Canadian government attaches great importance to agricultural insurance to protect farm income. In 1991, the farm income protection law was promulgated, which is mainly used to stabilize farm income and reduce the impact on production decision-making. It has successively formulated such agricultural insurance forms as the farmer income plan (cfip), the advance farmer plan (APP), the crop insurance (CIP) and the agricultural income stabilization project (CAIS) to ensure that farmers' income is not affected. The continuous impact of natural disasters and market fluctuations will reduce the risk and cost of agricultural production. After more than 80 years of continuous reform, development and improvement, Canada has initially formed an agricultural support and protection policy system with risk management as the core and non risk management projects as the supplement.

Enlightenment: the Canadian government mainly reduces the cost of farmers by stabilizing the purchase and sale price of agricultural products; aiming at the domestic wheat production with large output, a wheat bureau is specially established to achieve a high degree of unity and government monopoly sales, which is conducive to reducing the intermediate cost and ensuring production; and a perfect agricultural insurance policy system is protecting the production income of farmers and farmers.

3.3. Complementary board - India

As the second largest country in the world, how to ensure food safety is the key and short board of Indian agriculture. In the history of India, there have been two green revolutions to improve the level of agricultural production and relieve the pressure of agricultural supply. (1) From 1966 to 1990, India's low agricultural output was difficult to use for economic development, and its food supply was seriously insufficient, which led to a great food crisis. In order to alleviate the supply pressure, the government has implemented the science and technology oriented Agricultural Comprehensive Development Project Green Revolution, which aims to achieve stable and high yield of grain, popularized high-yield fine varieties, expanded irrigation area and developed agricultural machinery, etc., so as to promote the modernization and large-scale development of agriculture. The focus is to improve the construction of agricultural infrastructure. The federal government has invested in the construction of rural infrastructure such as electricity and roads, popularized the use of high-yield varieties, expanded the area of agricultural irrigation, increased the use of chemical fertilizer, improved the level of agricultural mechanization, and used science and technology to improve the level of agricultural production modernization. The food production has increased substantially, and the food crisis has been gradually solved. (2) Because the first green revolution overemphasized the input and output of agricultural production, resulting in the imbalance of agricultural ecological structure, soil erosion, water pollution and soil salinization and other ecological problems gradually appeared. In order to solve the ecological problems and protect the agricultural environment and national food safety, in 2006, the Indian government again proposed to implement the second green revolution to reduce agricultural pollution and protect the agricultural environment with science and technology. We should use the progress of biotechnology to improve varieties, promote high-efficiency non-toxic pesticides, improve water conservancy and irrigation systems, strengthen the

application of information management technology in agriculture, and use more scientific and ecological methods for agricultural production to reduce agricultural pollution. The grain yield and the ecological environment were improved.

Enlightenment: India's agriculture has developed from the original "agricultural collapse and food shortage" to "surplus grain export and agricultural modernization", which lies in the ability to fully tap the short board of agriculture, make up for the lack of production caused by the lack of labor force from the aspects of infrastructure construction and technical level, and make up for the short board of food production and environmental pollution.

4 .The breakthrough Countermeasures of China's agricultural supply side structural reform

In the process of China's agricultural supply side structural reform, we need to base ourselves on the reform process and problems, learn from the advanced experience of foreign countries, pay close attention to the three core points of "inventory removal, cost reduction, and shortage compensation", and make a key breakthrough in China's agricultural supply side structural reform in terms of removing excess inventory, reducing production costs, and making up for production quality and ecological costs.

4.1. Establish a diversified "government + market" policy control system

We should solve the problem of division of labor between the government and the market, and avoid a large number of agricultural problems caused by over emphasis on the market and neglect of the role of the government. In short, the market plays a major role in preventing the government's excessive intervention in the market from leading to the lack of power for resource allocation and factor flow in agriculture. In terms of measures, we should gradually reduce the government's policy control and price subsidies, make rational use of market forces, use the market to stimulate consumption, innovate the price mechanism of agricultural products, reduce inventory or promote production through the change of market prices, regulate production and layout reasonably and dynamically according to the change of market, ensure effective supply and avoid overproduction. The key point is to adjust the planting of high inventory crops such as corn, increase the investment in economic industries such as animal husbandry, and establish a coordinated development structure of three-dimensional grain economy and feed. At the same time, we should avoid the neglect of mechanism and system innovation in the strategic adjustment of the 1990s. The government should pay attention to the establishment of supporting mechanism in the reform, formulate policies to promote the reform of rural land, finance, market, entrepreneurship and other key points, activate the rural elements, and provide reform momentum. Finally, a diversified "government + market" agricultural product policy control system will be established.

4.2.Reduce the cost of agricultural production and improve the level of agricultural production through multiple channels

Encourage the development of new business entities such as family farms, strengthen vocational education and improve the quality of farmers, improve the level of agricultural producers, and encourage new business entities to engage in large-scale production and operation; strengthen the promotion and application of agricultural science and technology, improve the level of mechanization, open new business formats such as exhibit board agriculture, information agriculture and order agriculture, reduce agricultural production costs and improve agriculture Production level; for corn and other major crops, we can learn from Canada's measures, formulate corresponding departments for unified management and sales, and a high degree of large-scale production and operation can help farmers reduce intermediate costs and improve production; establish perfect agricultural insurance measures to ensure agricultural risks, make farmers feel at ease and efficient production; meanwhile, improve land circulation, income mechanism and financial support The financial guarantee mechanism for agricultural production, such as agriculture, reduces the cost of land, capital and other elements of agricultural production.

4.3. Complement the short board of modern agricultural production and realize sustainable green production

At present, the short board of agricultural production in China is that the quality of agricultural production is not suitable for the needs of modernization, which requires efforts in many aspects. In order to meet the development requirements of modern agriculture, reasonably introduce new elements such as innovation, green, ecology, sharing, science and technology, improve the construction of agricultural infrastructure, implement smart agriculture and precision agriculture, develop agricultural brands, use sharing agriculture and other means to achieve scale intensive production, improve agricultural production efficiency and output level; use advanced management concepts and scientific methods to make full use of the leading role of the new-type business entity, optimize the resource allocation by means of land scale and factor intensification, intensify the role of science and technology in agricultural innovation, and develop modern agriculture. At the same time, ensure the safety and quality of agricultural products by formulating strict quality standards and regulatory system, protect the agricultural ecological environment through the ecological environment protection mechanism and science and technology, and implement the work to departments and people in detail to ensure the smooth implementation of environmental protection. To realize the transformation of agricultural development from "relying on resources and environment to destroy development" to "pursuing sustainable development of green ecological environment". Through technology, we can solve the problems of backward agricultural production and operation and low output level, improve the level of agricultural development, promote agricultural transformation and upgrading, improve the quality and efficiency of agriculture, promote the high-quality growth of agricultural economy, realize the sustainable development of farmers' income, supplement the short board of agricultural production, and improve the quality of production .

Acknowledgment

This work was supported by the general project of National Social Science Foundation of China "Research on Countermeasures for improving the quality of agricultural supply system under the sharing economy" (18bjy130).

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