

Analysis on the Current Situation and Countermeasures of Food Supply Protection in Sichuan Province—Based on the “Post-Epidemic Era” Perspective

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Abstract: Food security means national security. Grain bears on the national economy and people's livelihood, and high-quality grain supply is the cornerstone of ensuring and maintaining social stability and development. Sichuan province is one of the 13 main grain-producing areas in China and the only one in western China. It is a major province with large population and grain consumption. Since the outbreak, the central and local governments have attached great importance to grain supply in Sichuan, and a stable grain supply system has been established in Sichuan. But at present, there are still challenges such as the decrease of sown area, shortcomings in warehousing and logistics, and prominent structural shortage of grain reserves. In view of this, suggestions are put forward to consolidate the basis of grain production, improve the system of grain purchase and storage, and strengthen market monitoring and early warning.

Keywords: Sichuan; Grain; Grain supply guarantee

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1. An overview

1.1. Domestic research status

Food is vital to the national economy and people's livelihood, and food security is the cornerstone of sustained and sound economic and social development. To ensure high-quality grain supply, we need to ensure both quantity, variety and quality.

At present, China is in the “post-epidemic” era of COVID-19, and the spread of the epidemic has created challenges for China's food supply. Wang Xicheng and Peng Laiyi pointed out that since the beginning of 2020, the spread of COVID-19 has intensified the risk of domestic and foreign food markets^[1]. Li Xinyi, Han Xiao, Qi Haotian also believes that COVID-19 has seriously impacted the situation of stable grain supply and price in China^[2]. Guo Qinghua pointed out that with the rapid development of China's population, industrialization and urbanization, the trend of tight food supply and demand will exist for a long time, and food security is still facing great pressure^[3]. Wang Shuangzheng pointed out that after the outbreak of COVID-19, the consumption demand for grain and oil declined significantly in the short term. In addition, transportation, logistics and storage were restricted due to the epidemic prevention and control, resulting in unsalable agricultural products and price drop in some regions^[4].

The emergence of the epidemic is a test of Chinese food supply capacity, which has an impact on China's food supply system. Qian Yuhao, Luo Letian and Wang Jinqiu pointed out that China has the following problems in food supply protection: The government grain reserve system has problems such as structural imbalance of reserve varieties and processing and transformation capacity, incomplete social grain reserve system, low inter-regional connectivity of hardware facilities in grain logistics system and lack of top-level design of management system ^[5], which need to be improved continuously.

1.2. Foreign research status

Foreign scholars have also mentioned the impact of COVID-19 on food security. Men Fei and Tarasuk Valerie put forward the need to focus on food charity, government assistance and employment in terms of food insecurity during the epidemic period ^[6]. Scholars such as Mui Yeeli and Headrick Gabby investigated and analyzed the changes in people's access to food during the epidemic and proposed a planning method to link urban and rural areas, so as to strengthen the integration of food production, transportation and food distribution and build a more flexible and equitable food system ^[7].

1.3. Review

As far as current research is concerned, domestic and foreign scholars mainly analyzed the inconvenience in distributing of food in the market after the spread of COVID-19, which makes it difficult to distribute food reasonably and challenges the system and capacity of food supply protection. In view of the above situation, scholars put forward corresponding improvement measures, which have great reference value.

Most of the researches of the above scholars are based on the national perspective, considering the overall development of the country's insurance and supply, and there are few researches on the insurance and supply in a certain region. Therefore, this study is based on the current situation of supply protection in Sichuan Province and analyzed from the "post-epidemic" perspective, which is more targeted.

2. Development status of food security in China

When the food is safe, the country is safe. Hence, the government have always attached great importance to grain supply.

Data from the National Bureau of Statistics showed that China's total grain output in 2021 was 682.85 million tons, with the summer harvest reaching 145.96 million tons and the autumn harvest 508.88 million tons. The total grain output exceeded 650 million tons for six consecutive years, indicating that the total grain output was sufficient. In the first half of 2020, China imported 1.24 million tons of rice and rice, accounting for only 2 percent of total grain imports. Exports of rice and rice were 1.36 million tons, more than imports. At present, China's main grain can basically achieve high self-sufficiency rate, at the same time less affected by the international grain market, domestic grain prices remain stable, with small fluctuations.

However, the grain output varies in various regions in China, and there is an imbalance between supply and demand of grain in some regions. The demand for food logistics and storage is increasing, and the total amount of food logistics is also increasing. At present, our country's grain logistics relies mainly on the eight channels and "two horizontal, six longitudinal" eight lines of food logistics, push forward China's grain logistics "four deconcentrations," initially formed "public + water + iron intermodal" modern grain logistics network, constantly optimize the way China's grain transport across the province and improve the efficiency of interoperability. At the same time, China has also created a relatively complete regulation and control system for grain storage, providing a good policy environment and guarantee system for grain storage in China ^[8].

3. Measures to ensure grain supply in Sichuan Province

Since the beginning of 2020, the risks of the domestic food market have been further aggravated by the spread of COVID-19, the recession of the world economy and extreme climate disasters. The Central Economic Work Conference of the Communist Party of China (CPC) made it clear: “We will improve the ability to ensure the supply of grain and important agricultural and sideline products.”

Sichuan is one of the 13 major grain-producing areas in China and the only one in the western region. Ensuring high-quality grain supply plays an irreplaceable role in maintaining overall economic and social development, consolidating the achievements of poverty alleviation and building a moderately prosperous society in all respects. Sichuan province has taken the following measures to ensure food supply:

(1) Ensure stable and increased grain production

Increase overall grain production capacity, protect and improve cultivated land, and consolidate the foundation for grain production. In 2021, the province’s total grain output reached 71.64 billion catty (42.98 billion kg), the first time in 24 years that the total grain output reached 71.5 billion catty (42.9 billion kg).

(2) Promote high-quality development of grain industry

Promote industrial integration, implement high-quality grain projects, create grain parks, and cultivate grain and oil brands with regional characteristics. Efforts will be made to build a number of demonstration counties in the “land of fish and rice” and high-quality rice production demonstration counties. In 2021, the comprehensive output value of grain and oil industry will reach RMB 339.8 billion.

(3) Strengthen grain reserve management

Establish the local government grain reserve system, strictly implement the scale of the reserve, the total scale of the provincial grain reserve is 3.99 million tons, which can guarantee the provincial grain supply for three months, and the three-level storage facility system at the provincial, provincial and county levels has been basically completed.

(4) Ensure orderly grain circulation and emergency supply

Improve the emergency system of grain and oil, the province’s emergency production of 240,000 tons of grain and oil, 21 cities (prefectures) of finished grain and oil emergency reserve cover, 183 counties (cities, districts) of raw grain reserve. 4,819 emergency support enterprises were identified, with a maximum daily supply capacity of 65,600 tons and daily transport capacity of 32,000 tons. Combined with the adjustment of administrative divisions in towns and townships, the layout of emergency outlets has been optimized, and 3,938 key outlets for emergency grain and oil supply have been built, covering storage, distribution and supply.

(5) The food authorities in Sichuan have earnestly implemented the decisions and arrangements of the CPC Central Committee, The State Council and the Provincial Party Committee and government on the prevention and control of novel Coronavirus pneumonia, and taken effective measures to ensure sufficient supply of grain and oil to the market during the epidemic prevention and control period. At present, Sichuan grain and oil stocks are abundant, the supply is sufficient, and the market price is stable.

4. Challenges and countermeasures for grain supply protection in Sichuan Province

4.1. Challenges in ensuring high quality food supply

4.1.1. The overall situation in grain production is grim

Ensuring stable grain production is a prerequisite for ensuring high quality food supply. At present, the status of Sichuan province in China's grain production is declining year by year, from the third place in 2004 to the ninth place in 2021. Since 2006, the area sown to rice has declined for 13 consecutive years, while the area sown to wheat and its output have declined for more than 20 consecutive years. Ensuring food security will face more complex and challenging situations. **Figure 1** shows the grain yield and forecast trend of Sichuan Province from 2016 to 2021.

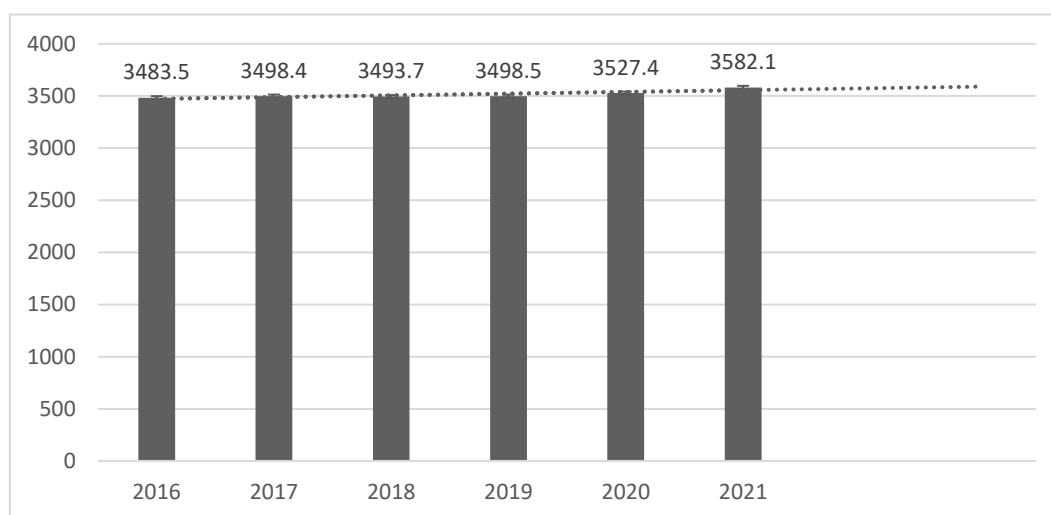


Figure 1. Grain yield and forecast trend of Sichuan Province from 2016 to 2021

4.1.2. Land resource constraint intensifies

Grain production is the foundation of national economy, and cultivated land is the important foundation of grain production. At the present stage, although the General Office of the Sichuan Provincial People's Government has curbed the rapid decline of the province's arable land area by implementing strict cultivated land protection policies, it still faces many difficulties. Firstly, the land fragmentation is severe, the proportion of slope arable land is high, and the arable land per capita area is small, large-scale operation and production of grain is difficult. Second, the quality of cultivated land is poor, the area of grain production is large but the pollution is heavy, which obviously restricts the improvement of grain yield per unit area. Thirdly is the high degree of arable land abandonment. Different areas in the province have different degrees of arable land abandonment, especially in remote areas such as hills and mountains.

4.1.3. Grain storage and logistics are flawed

Grain circulation is an important carrier to stabilize market supply and promote income increase, which directly links production and consumption of the national economy. There is severe short of grain storage capacity in Sichuan. Besides, the grain storage scale is small and scattered, and the utilization of grain storage facilities is not optimal. At the same time, the logistics channel is single and is not capable of dealing with emergencies; Logistics facilities are not optimal, the degree of mechanization is low, the overall logistics service system is mostly systematic with minor disorganization.

4.1.4. Structural shortage of grain reserves is a serious problem

The changing international situation makes structural shortage a prominent problem to be solved urgently in China's food security. At present, there are a series of problems in the major grain reserves of Sichuan Province. The structural contradictions of grain varieties are becoming more and more prominent. Ration varieties and quality should be transferred from outside the province; this is because of the structural imbalance between supply and demand of some grain varieties is prominent; this makes finished grain and oil emergency reserve is more difficult.

4.2. Relevant suggestions

4.2.1 Consolidate the foundation of grain production and increase grain production capacity

Storing grain in the ground is a solid foundation for ensuring grain supply. Attention should be given to curbing the decline in the area sown to grain year after year, encourage the development of special grain parks, curb the decline in the area sown to grain, ensure the stability of the area sown to grain and its output, and ensure that good farmland is used for grain. At the same time, the development of high-standard farmland will be promoted. More effort will also be needed to repair and control soil pollution, and improve the efficiency of farmland use and grain production capacity.

Persisting in storing grain using technology is the technical guarantee for realizing grain supply. Therefore, the construction of agricultural digitization and standardization should be promoted. Besides, science and technology should be utilized to reduce costs, and the quality and output should also be improved. Furthermore, the agricultural science and technology investment should be increased, and the agricultural science and technology innovation and service system should be further perfected. The range of advanced agricultural science and technology should also be widened, followed by the application of intelligent technology and improve the level of precision agriculture management. In addition, optimum management in agriculture and the digitalization of agriculture should be encouraged. Besides, intelligence and intensification, scale, a specialized direction, construction of accurate command, scientific decision-making, and efficient control of agriculture are needed.

4.2.2. Improve the grain purchase and storage system and increase our ability to regulate grain reserves

Storage capacity needs to be safeguarded. Strict local grain reserve system will be implemented followed by the expansion of grain reserves and building of high-standard grain depots. The integration of government reserves, market reserves, and non-government reserves should be strengthen and the regulation of grain purchase and storage will be improved

Ability to mobilize will be ensured. The grain emergency guarantee system and mechanism will be improved, dynamic monitoring and early warning of market fluctuations will be strengthened. Besides, the analysis, research, evaluation, organization and dispatching of grain sources will be strengthened. Mechanisms for interconnected and mutual guarantee of grain emergency response will also be established and improved

4.2.3. Monitoring of the grain and oil market and improve the market's ability to ensure emergency supply will be strengthened

The order of grain and oil market circulation will be strictly managed. A credit system for grain operating enterprises should be established. Besides, the supervision and coordination mechanism of grain market should be improved and resolutely crack down behaviors or practices such as; malicious hoarding of grain to drive up grain prices; violation of the state quality standards; changing the names of goods; products or commodities or resorting to other deceptive means; selling high-quality commodities as

inferior ones internally and selling defective as superior ones externally, in order to deceive consumers; adulterate, make false, cheating in measurements to disturb food market order behavior. More details will be added into this project in order to improve grain quality, comprehensively strengthen oversight over the quality and safety of grain distribution chains, and ensure the food safety of the people.

4.2.4. Information support for price monitoring and early warning will be strengthened

Pricing should be more heavily monitored and early warning infrastructure should be improved. Besides, the grain price early warning system should be improved. The information technology construction of price monitoring and early warning should also be strengthened. The price monitoring tools will be optimized; Cloud platform and big data technology will be used to optimize the allocation of information resources, strengthen the informatization level of agricultural price monitoring and early warning, and ensure the full coverage of information monitoring network; Close attention will be given to the production and marketing dynamics of grain and oil products as well as the relationship between market supply and demand, and constantly strengthen supervision of changes in grain and oil prices under emergency social or natural conditions; The monitoring of price changes in wholesale markets and markets for agricultural products will be strengthened. Under emergency situations, the monitoring and early warning system of grain and oil markets will be activated to fully and accurately grasp the dynamics of grain and oil situation, do a good job in information forecasting and early warning, and focus on the organization and implementation of grain and oil supply, especially the production and dispatch of small packaged finished grain and oil products.

Disclosure statement

The authors declare no conflict of interest.

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