

# Research on the Income Guarantee of Grain Farmers from the Perspective of Food Security

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**Abstract:** Food security is an important foundation for national security, and ensuring the income of grain farmers is a key link in solving food security issues. This article explores in depth the construction and improvement of the income guarantee mechanism for grain farmers from the perspective of food security. To effectively establish a mechanism for ensuring the income of grain farmers, the following implementation paths have been proposed: firstly, stable and increased production to ensure reasonable income for grain farmers; The second is to control costs and promote technological innovation in the grain industry; The third is comprehensive development, which helps to improve the entire grain industry chain; Fourthly, optimize policies and improve the agricultural support policy system; The fifth is to expand coverage, optimize and improve the insurance sharing mechanism.

**Keywords:** Food security; Increase farmers' income; Benefit protection.

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## 1. Introduction

Food security is the 'most important aspect of a country' and the 'ballast stone' for the stable development of the national economy. Ensuring the income of grain farmers is to consolidate national food security from the root and flexibly respond to the unprecedented changes in the world. The report of the 20th National Congress of the Communist Party of China proposed to "comprehensively consolidate the foundation of food security", improve the mechanism for ensuring the income of grain farmers, and provide direction for China's current and future food security. However, practice has proven that only by increasing farmers' enthusiasm for grain cultivation and increasing their income from grain cultivation can we stabilize the good situation of grain production and shoulder the great responsibility of food security.

## 2. Literature Review

General Secretary Xi Jinping pointed out at the 2022 Central Rural Work Conference that "ensuring stable and secure supply of food and important agricultural products has always been the top priority in building a strong agricultural country." The implementation of the food security strategy requires putting people first and focusing on agriculture. Focusing on the main needs of grain farmers and improving the mechanism for ensuring their income is an important measure to stimulate the potential of agricultural workers, enhance farmers' enthusiasm, achieve healthy and sustainable development of the grain industry, and maintain national food security. Faced with a huge population base, the road to domestic food security is not easy. Due to the production mode of small-scale farming in China, food production does not have a competitive advantage compared to other economic crops or non-agricultural industries. The agricultural production structure is spontaneously adjusting towards "non grainization", and there are even cases of abandoned farmland, which is not conducive to stable and increased grain production. Therefore, in order to ensure food supply, it is necessary to maintain and strengthen the role of

the government in food production, increase support for grain production, and strictly control the "non grain" operation of basic farmland. While ensuring its production supply, improving its quality is necessary to more effectively guarantee the total grain output. The quality of arable land is an important factor affecting food security. In the face of the overall low quality of arable land in China, arable land degradation is severe; Due to uneven distribution of arable land and the fact that compensation for cultivation is mostly for poor quality land, the government should establish a system for protecting arable land, set up special funds, encourage farmers to improve the quality of arable land, and effectively control agricultural pollution sources. At the same time, a real-time monitoring system for arable land quality should be established to improve rural soil environment and implement soil remediation.

The development practice of world agricultural powers such as Europe and America has proven that the more developed the grain industry economy and the more complete the industrial chain, the more solid the foundation of food security will be. Based on the basic national conditions of our country, supporting the formation of a complete and resilient food industry chain is of great significance. While stabilizing the planting area and yield of grain, we will strengthen the on-site collection, storage, processing, and circulation of grain, actively leverage the leading role of leading enterprises, establish a "leading enterprise+cooperative+farmer" linkage mechanism for agricultural interests, stimulate various entities to participate in building the entire grain industry chain from the field to the dining table, accelerate the improvement of grain deep processing capabilities, guide grain processing enterprises to actively develop new products, new technologies, and new processes, increase the production of high-end and deep processed grain products, and enable grain farmers to share more value-added dividends in the industrial chain and value chain extension, truly solving the problem of "the more grain produced, the poorer".

On the road to food security, the unremitting efforts of farmers alone are far from enough, and continuous support from the government is also needed. Optimize policies, ensure reasonable income for grain farmers, fully utilize the

subsidy space allowed by the WTO, increase the subsidy intensity for grain farmers, and adjust the subsidy direction in a timely manner in accordance with relevant WTO rules. Accelerate the adjustment of the "yellow box" policy support scope, effectively utilize the support space for non-specific product "yellow boxes", such as gradually increasing the subsidy intensity for moderate scale operation of grain. At the same time, accelerate the improvement of the management system for grain subsidy investment. Ensure that the grain subsidy policy does not shrink or deviate during the implementation process. Establish and improve the system for determining the area of grain subsidies as soon as possible, and distribute grain subsidies to real grain growers in accordance with the principle of "whoever grows grain benefits". At the same time, it is necessary to strengthen supervision and inspection work, and effectively ensure that subsidy funds are truly used to increase food and agricultural income and ensure food security.

In summary, existing research has extensively and deeply explored the benefits of grain cultivation, laying a good literature foundation for this study. However, there is still room for improvement. For example, some studies, although comprehensive in analysis, lack empirical data analysis or have data that is too old to reflect current reality. Some studies, although focusing on certain aspects of grain income, need to improve their systematicity. With the convening of the 20th National Congress of the Communist Party of China, General Secretary Xi Jinping has put forward higher-level, more sustainable, and more comprehensive requirements for food security and ensuring farmers' income from a new perspective in his report, "ensuring that Chinese people's rice bowls are firmly in their own hands", further releasing a clear signal of focusing on agriculture and grain. Therefore, based on previous research and survey data of agricultural products in Anhui Province, this article summarizes the difficulties faced by grain farmers in ensuring their income from the perspective of food security from multiple angles, and proposes targeted policy recommendations.

### **3. Theoretical Analysis**

#### **3.1. Food Security and Income of Grain Farmers**

Among the many paths to ensure food security, safeguarding interests is the first element to mobilize the enthusiasm of all parties, and playing a good role in economic incentives is the fundamental way to ensure sustained food supply. Under the strategy of food security, the interests of farmers cannot be ignored. Only by making money can farmers have the motivation to grow crops. The main body of grain production is farmers, and the enthusiasm of farmers to plant grain is the foundation of grain production, which is related to whether grain production can continue to increase steadily. Only by increasing farmers' enthusiasm for growing grain and increasing their income from growing grain can we stabilize the good situation of grain production and shoulder the great responsibility of food security. Practice has proven that to achieve the strategy of food security, efforts need to be focused on increasing farmers' income, encouraging them to voluntarily plant food, and mobilizing and protecting their enthusiasm for farming. Only by formulating and implementing policies to ensure the income of farmers can we achieve the goal of basic self-sufficiency in food. Therefore, improving the income of grain farmers is the fundamental

strategy to ensure food security at this stage.

#### **3.2. Ways to improve the income of grain farmers and ensure food security**

The mechanism of improving the income of grain farmers and promoting food security lies in the innovation of grain industry technology, improving the entire grain industry chain, and optimizing the insurance sharing mechanism to enhance the income of grain farmers and ensure food security. Firstly, promoting agricultural technological progress can significantly improve agricultural production efficiency, save a lot of labor time costs for grain growers, and give them time to develop the secondary and tertiary industries, further increasing wage income. Secondly, actively promote the development of vertical industrial chains in the middle and lower reaches of grain processing, including deep processing and inter industry transformation, to enhance the cohesion and integration of the industrial chain. It is also possible to develop the secondary industry by combining agriculture with tourism, based on the local characteristic culture, beautiful scenery, and cuisine, to broaden the horizontal industrial chain of agriculture and increase the additional income of farmers. Thirdly, optimize agricultural insurance policies and adjust the payment standards for planting industry insurance; Establish a multi-level food insurance system and post disaster compensation mechanism, clarify regulations, and provide insurance and compensation to farmers based on actual situations; Promote full cost and operating income insurance to ensure stable operating income for grain farmers.

### **4. Measurement and Analysis of Food Security Water Products**

Food security refers to the ability of everyone to buy and afford the basic food they need at all times. It has three meanings: firstly, to ensure the quantity and quality of food supply, that is, not only to provide sufficient food, but also to ensure the safety and hygiene of the supplied food, and to meet the basic needs of people's survival and health. The second is to ensure the stability and long-term nature of food supply, that is, to ensure that food supply is sufficient and hygienic at all times to meet people's long-term needs. The third is to ensure people's purchasing power, that is, people can not only buy but also afford the basic food they need for survival and health. In order to ensure sufficient quantity and quality of grain, stable supply chain, and reasonable prices, we should firmly grasp the initiative of food industry chain and supply chain security, actively promote efficient production of grain, the construction of the entire industry chain, and the implementation of agricultural insurance policies. Therefore, a food security indicator system is constructed based on three dimensions: grain production efficiency, the entire grain industry chain, and agricultural insurance policies.

In terms of grain production efficiency, the adoption of advanced technology, land utilization rate, improvement of labor productivity, and degree of financial investment are important indicators to ensure the quantity of grain, supply chain stability, and production efficiency. Therefore, choosing the number of invention patent applications authorized, the level of grain yield per unit, and the per capita grain output value to measure technology, land, and labor productivity; The proportion of agriculture in fiscal investment reflects the degree of fiscal investment. At the level of the entire grain

industry chain, the development of the grain industry chain is an important support for ensuring food security. From the perspective of the entire industry chain, a systematic analysis of food security risks is conducted. Risks exist in various links of the entire industry chain, and any factor may impact and trigger risks. The food security risks of the entire industry chain are divided into pre production, mid production, and post production levels, and secondary indicators of the food industry chain are constructed to reflect the level of risk indicators of the entire industry chain of food security, including resource security risks, natural disaster risks, and food trade availability risks. In terms of agricultural insurance policies, comprehensive coverage of grain insurance is an important goal to ensure the income of grain farmers. Therefore, the implementation of agricultural insurance policies is measured by insurance premium income, agricultural insurance density, and insurance coverage breadth.

## 5. Improve the Income Guarantee Path for Grain Farmers

Stable and increased production, ensuring reasonable income for grain farmers. The basic national condition of China is a large country with small farmers, and the main force of grain production in our country is still small-scale farmers. In order to solve the increasingly serious "non-agricultural" phenomenon in China, such as small-scale cultivation, uneven distribution of arable land, and compensation for poor quality land, it is necessary to comprehensively promote the large-scale production of grain, based on the protection of permanent basic farmland and the construction of high standard farmland as the implementation focus, and deepen the reform of the agricultural industrialization consortium. Encourage grain farmers to voluntarily merge and implement a business model of "merging small fields into large fields", and implement a "share dividend" system for each farmer to work together and share the fruits of their labor. Promoting agricultural socialized service methods such as contract farming and planting, entrusted collection, and full process entrusted management not only eliminates the problem of low production efficiency caused by land fragmentation, but also solves the problem of fragmented farmland. At the same time, it improves land utilization and intensive management level, promotes large-scale operation, accelerates the process of land transfer, and guarantees the income of grain farmers.

Control costs and promote technological innovation in the grain industry. Due to excess monetary liquidity and rural residents' wage income, the cost of food has risen. To achieve the dual goals of increasing income and reducing costs, we must vigorously promote agricultural technological progress and improve the comprehensive utilization level of grain. Placing the improvement of comprehensive grain production capacity in a more prominent position, promoting the true implementation of "storing grain in the ground and in technology", we must target the "bottleneck" technology in grain production, processing, and storage, and leverage the advantages of the new national system to collectively overcome scientific and technological difficulties. In terms of grain cultivation technology, the use of agricultural intelligent robots and remote control of unmanned aerial vehicles for watering and fertilizing will be promoted to every farmland, greatly improving agricultural production efficiency, saving a

lot of labor time costs for grain growers, allowing them time to develop the secondary and tertiary industries, and further increasing processing income. In terms of food quality, we will research and develop fertilizers that improve soil quality, reduce the gap in food quality caused by regional soil differences, actively promote the "branded food" project, build regional public brands, industrial brands, and product brand systems, strengthen the protection of the "three products and one standard" of food, ensure the quality of food products, maintain the reputation of food brands, and increase the premium income of grain farmers.

Comprehensive development to help improve the entire grain industry chain. With the development of social economy and the improvement of people's income level, China's grain consumption mode has shifted from "eating enough" to "eating well", which is also a higher requirement put forward by the market for the economic development of the national grain industry. Recently, the "Anhui Provincial Government Work Report" pointed out that it is important to do a good job in increasing the value of "grain head and food tail", "livestock head and meat tail", and "agricultural head and labor tail". Nowadays, agriculture not only pursues a variety of high-quality grains, but also emphasizes the development of the entire agricultural industry chain. According to the survey, in recent years, Anhui Province has coordinated the development of primary processing, deep processing, and comprehensive utilization processing of agricultural products, created famous and excellent brands, enhanced the added value of agricultural products, and accelerated the development level of the province's agricultural product processing industry. However, there are still many problems, such as low industrial levels and a relatively low proportion of deep processing enterprises. Therefore, we should actively promote the development of vertical industrial chains in the middle and lower reaches of grain processing, adhere to the principle of "eating from the beginning to the end", roughly process grains to form rice, flour, potato starch, soy products, etc., and develop a number of well-known local characteristic grain deep processing enterprises, ultimately forming Chinese style pastries, instant foods, etc. Vigorously promote deep processing and industrial transformation, and enhance the cohesion and integration of the industrial chain. In addition, we can also seize the trend of leisure agriculture and rural tourism, based on the local characteristic culture, beautiful scenery, and cuisine, and develop the secondary industry by combining agriculture with tourism, expanding the horizontal industrial chain of agriculture, and increasing the additional income of farmers. Promote the breeding methods of "grain+" and comprehensive planting and breeding, as well as smooth channels for the resource utilization of agricultural waste, establish straw collection, storage, transportation, and waste plastic film recycling outlets, and explore straw power generation to promote the full utilization of waste materials and improve land utilization efficiency. Expand the vertical industrial chain, establish a big food concept, and achieve increased production and income for farmers.

Optimize policies and improve the agricultural support policy system. Agriculture has a natural vulnerability, and moderate support for agriculture by the state is not only a common practice in countries around the world, but also allowed by the rules and framework of the World Trade Organization. However, China's financial support for agriculture is far less than that for forestry, and there are still shrinkage and deviation in the implementation of China's

grain subsidy policy [11]. The subsidy rewards cannot be implemented in the hands of grain growers and sellers, and it is impossible to increase both grain and income, often resulting in problems such as "low grain prices harming farmers". To solve these problems, it is necessary to establish and improve the system for determining the area of grain subsidies as soon as possible. According to the principle of "whoever grows grain benefits", a combination of three measures, namely "direct grain subsidies, insurance financial subsidies, and priority construction and refinement subsidies", should be adopted to help grain production truly distribute grain subsidies to grain growers; Establish a provincial-level food security guarantee fund to ensure the minimum income of major grain producing areas while building a linkage subsidy mechanism linked to cost-benefit, ensuring the stability of farmers' income; Establish a food security reward mechanism to encourage farmers to increase production and income, improve their enthusiasm for growing crops, and increase their transfer income.

Expand coverage, optimize and improve the insurance sharing mechanism. According to the National Meteorological Administration, in early 2024, the southern region of China experienced continuous rain, snow, and freezing weather, resulting in countless losses of grain. This directly affects the income of farmers, and China's insurance policies for dealing with food losses caused by sudden weather are not perfect enough. Due to local finance's arrears of insurance company premium subsidies, the insurance coverage for grain varieties is small, and the guarantee strength and amount are small. Due to the influence of the national conditions of large countries and small farmers, there is a polarization in farmers' attitudes towards food insurance. Small farmers are indifferent to whether or not to purchase insurance and are unwilling to bear the insurance costs. Large grain growers feel that the level of insurance protection is "not quenching their thirst", and the amount and variety of insurance cannot meet their needs. Therefore, it is crucial to establish a multi-level food insurance system and implement different insurance systems for farmers with different planting areas. The proportion of insurance premiums borne by facilities should be graded to give farmers more autonomy. Establish a sound post disaster compensation mechanism, clearly stipulate compensation for farmers based on the severity of the disaster, promote full cost and operating income insurance, and ensure stable operating income for grain farmers. Subject to financial constraints, local finances will moderately increase the proportion of policy based insurance premium subsidies for grain crops in major production areas. Regardless of whether it is a major grain producing county or a non grain producing county, insurance premium subsidies can be enjoyed by all grain growers, expanding the insured area and variety of grain and encouraging farmers to actively grow grain.

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