

# Modern Approaches to Ensuring Food Security in Our Country

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**Abstract:** This article reveals the importance, essence and theoretical foundations of ensuring food safety in Uzbekistan. In the article, based on the analysis of socio-economic changes and measures implemented to ensure food security in Uzbekistan during the years of independence, strengthening the country's food security and ensuring the implementation of the tasks defined in the Strategy relevant proposals are presented.

**Keywords:** Food security, agriculture, food products, export, import.

## 1. INTRODUCTION

The global food security situation is alarming, with millions facing hunger and malnutrition. This crisis is exacerbated by rapid population growth and environmental changes. Effective solutions are crucial to prevent further deterioration and to ensure that everyone has access to sufficient, safe, and nutritious food.

Thus, ensuring food security remains one of the most critical challenges for nations globally. The United Nations underscores the need for a fundamental reevaluation of how food is produced and distributed. It is essential to prioritize the advancement of agriculture to provide raw materials for the food industry, while also ensuring the implementation of environmental protection measures.

## 2. ANALYSIS AND RESULTS

According to United Nations data, approximately 733 million people worldwide faced hunger in 2023, and this number is projected to reach 2 billion by 2050. Of these, 12.9% live in developing countries. Furthermore, 45% of deaths among children under five years old are attributable to malnutrition. Addressing these challenges requires robust and modern mechanisms for ensuring food safety and security.

In response to these global challenges, Uzbekistan has implemented a series of normative documents to enhance food safety and security.

**Presidential Decree PF-60 (January 28, 2022):** This decree outlines the "New Uzbekistan Development Strategy" for 2022-2026, which includes comprehensive measures to improve food security. The strategy focuses on modernizing agriculture, enhancing food safety protocols, and ensuring that food systems are resilient and sustainable.

**Presidential Decree PF-158 (September 11, 2023):** The "Uzbekistan-2030" Strategy, outlined in this decree, builds on the previous framework and sets long-term goals for food security and agricultural development. It aims to integrate advanced technologies, promote sustainable practices, and strengthen the food supply chain.

### Level of Research on the Issue

The stages of formation and development of agrarian relations, their specific characteristics, and their role in the socio-economic development of countries have been investigated by post-Soviet scholars such as Frolov K. V., Gordeyev A. V., Maslennikova (2011), on food security: international and domestic aspects by Balabanov V. S., Borisenko E. N. (2012), and others. These studies address the development trends of peasant farms, the evolution of agrarian relations, and the issues of improving the effectiveness of state regulation of agrarian relations.

In Uzbekistan, research on improving economic relations in the agrarian sector has been conducted by D. Tadjibayeva (2020), on economic relations in the agrarian sector by I. B. Rustamova (2020), on food security issues by B. O. Dusmatov (2022), on improving the provision of food products to the population by Ch. P. Khojageldiyev (2022), and on the economic and food security issues of the republic by S. R. Topildiyev (2023).

## 3. RESEARCH METHODOLOGY

The methodology of the article starts with the analysis of scientific and increasingly popular sources, focusing on the current economic policies in the Republic. It includes studying complex programs and guidelines for ensuring food safety in Uzbekistan, as well as economic experiences related to the use of modern web tools and methods to enhance innovation effectiveness. During the preparation of the article, scientific research conducted by foreign, Russian, and Uzbek scholars and experts on new economic policies and ensuring food safety in Uzbekistan under conditions of

innovative development is used.

#### **4. ANALYSIS AND RESULTS**

Since gaining independence, Uzbekistan has implemented measures in two main directions to ensure food safety:

- Extending and allocating new garden plots for rural residents.
- Revising the composition of agricultural crops.

From the early years of independence, it became necessary to reassess and improve the structure of agricultural crops as part of agrarian reforms. This issue was addressed through government initiatives. The development and implementation of a strategy aimed at achieving grain independence gained significant socio-economic and political importance. Achieving grain independence, increasing the production of essential food products such as meat, milk, eggs, and fruits and vegetables per capita, and consequently ensuring that all major types of food are produced domestically have been effectively achieved. Products that cannot be grown due to natural and climatic conditions are exceptions. Key reforms included the dissolution of inefficient collective farms and the establishment of private farms, the development of the private sector in the preparation, storage, processing, and sale of agricultural products, the support and improvement of the agricultural land fund, and the establishment of the Melioration Fund, which played a significant role in these processes.

In our country, significant work has also been done to improve the provision of food products by establishing new orchards and vineyards. From 2018 to 2022, approximately 50,000 hectares of new orchards were created, including over 14,000 hectares of intensive orchards and 23,000 hectares of vineyards. Over 6 million saplings were imported from Poland, Serbia, and other countries for establishing intensive orchards. By 2022, the average yield from the orchards created in 2011 reached 300 centers per hectare.

Due to a sharp increase in the production volume of agricultural food products, the per capita amounts also increased. In 2021, compared to 2008, the per capita production of vegetable products increased by more than 2.6 times, melon products by more than 2.7 times, potatoes by more than 2.5 times, fruits by 2.4 times, and grapes by nearly 1.7 times. During this period, the production volume per capita for grapes was more than 3.1 times the standard. Similar increases were observed for other products as well.

From 2020 to 2030, the country aims to secure a consistent water supply for both the population and various economic sectors. The plan includes improving the irrigation systems, broadening the application of market principles and digital technologies in water management, ensuring the reliable functioning of water management infrastructure, and increasing the efficiency of land and water resource utilization.

Uzbekistan is located in the Aral Sea basin, with its main water sources being the Amu Darya and Syr Darya rivers, as well as internal rivers, streams, and groundwater. The average long-term water flow of all sources in the Aral Sea basin is 116 billion cubic meters, of which 67.4% originates from the Amu Darya basin and 32.6% from the Syr Darya basin. Specifically, the total reserves of groundwater amount to 31.2 billion cubic meters, with 47.2% in the Amu Darya basin and 52.8% in the Syr Darya basin.

According to the water resource management schemes for the Amu Darya and Syr Darya basins, Uzbekistan's average long-term water withdrawal limit is 64 billion cubic meters. However, in the 1980s, the annual water consumption was within this long-term limit. In recent years, due to global climate change and issues with transboundary water use, the average annual water consumption has reduced to 51-53 billion cubic meters, of which 97.2% is from rivers and streams, 1.9% from collector networks, and 0.9% from groundwater, representing a 20% decrease from the allocated water withdrawal limit.

In Uzbekistan, the irrigated land area is 4.3 million hectares, with an average of 90-91% of water resources used in agriculture, 4.5% in municipal and domestic use, 1.4% in industry, 1.2% in fisheries, 0.5% in thermal energy, and 1% in other sectors.

To ensure reliable water supply for economic sectors, including agriculture, and to improve land reclamation, a specialized water management system has been established. This system includes 28,400 kilometers of irrigation systems with 54,432 various hydraulic engineering structures, as well as 70 reservoirs and flood control facilities with a total volume of 19.4 billion cubic meters.

Due to the uneven distribution of water resources and the complex terrain of irrigated lands, approximately 60% of the irrigated areas receive water through 1,687 pumping stations, which consume 8 billion kWh of electricity annually. Additionally, water consumers' associations, farms, and clusters use a total of 155,200 kilometers of irrigation networks and over 10,280 pumping units. For irrigation needs, a total of 12,400 wells are used, including 4,153 wells within the water management system.

To improve the meliorative condition of irrigated lands, a total length of 142,900 kilometers of drainage networks is used, including 106,200 kilometers of open and 36,700 kilometers of closed horizontal collector-drainage systems, along with 172 meliorative pumping stations and 3,897 vertical drainage wells.

In September 2023, an international conference on food safety was held in Samarkand. The Samarkand Declaration highlighted the following goals for participating countries:

- Develop agriculture in an ecologically safe manner that supports biodiversity while optimally using water resources.
- Assist the population, especially children and adolescents, in healthy eating, and implement comprehensive school meal programs.
- Increase women's participation in the transformation of agro-food systems by expanding their rights and opportunities in rural areas.
- Provide state support for small and family farms and expand their access to production, natural, and financial resources.

The main objectives of state policy in the field of food safety are:

- Safeguard human life, health, and consumer interests.
- Adapt legislative documents to international standards, norms, and regulations of international organizations to which Uzbekistan is a member.
- Increase the competitiveness and export potential of domestically produced food products.
- Develop favorable conditions for entrepreneurship at all stages of food product handling.
- Set general principles of food safety based on international requirements, harmonize existing sanitary regulations, norms, and hygiene standards with international standards, and reflect the rules of the World Trade Organization's Agreement on Sanitary and Phytosanitary Measures.

In the field of food safety, the following mechanisms are established:

- Define the rights and obligations of entrepreneurs operating in the food sector, including the implementation mechanisms for necessary hygienic practices and essential production practices.
- Enhance the specialized knowledge of officials responsible for food safety control. Develop skills in applying control methods based on modern international practices.
- Implement effective mechanisms for combating corruption and ensuring transparency.
- Increase the investment attractiveness of the food system, ensure international competitiveness, and enhance the country's export potential.

Ensuring food safety in the country is a complex issue due to factors that lead to a decrease in the level of self-sufficiency in food. These factors are manifested as follows:

- Rising demand for food products.
- Growth in the population.
- Increase in per capita consumption.
- Discrepancies in the needs for different products, resulting in a decrease in productivity levels and the volume of certain product types.
- Reduction in agricultural land due to rapid urbanization and insufficient growth in agricultural production volumes.
- Importation of food products at low prices from abroad.
- Decrease in the growth rates of yields for some agricultural products.
- Excessive Use of Chemicals: Overuse of chemical fertilizers and substances, inadequate irrigation and reclamation work, and insufficient attention to agrotechnical rules leading to soil degradation and reduced soil fertility.

Table 1. The key macroeconomic indicators and metrics to be achieved as a result of implementing the strategy for the development of agriculture in the Republic of Uzbekistan for 2025–2030 [1]

№	Name of indicators	Basis (2018)	2021-year	Goal for 2025	Goal for 2030
1.	Increase in the number of jobs in agriculture and food production	3 671 300	2%	1%	1%
2.	Agriculture Food Industry	91 420	3%	4%	5%

3.	Textile Industry	140 020	3%	4%	5%
4.	Growth in the volume of agricultural and food product exports	\$ 2.3 billion	\$ 3.5 billion	\$ 10 billion	\$ 20 billion
5.	The proportion of the population that does not have sufficient food	6.3%	5%	3%	0

According to the Table 1, by 2030, compared to 2018, the increase in the number of jobs in agriculture and the food industry is projected to be 1%, while in the agricultural, food, and textile industries it is expected to be 5%. Additionally, the volume of agricultural and food product exports is forecasted to increase by 20 billion USD. It is also anticipated that the proportion of the population that does not have sufficient food will be completely eliminated.

## 5. DISCUSSION OF RESULTS

The Presidential Decree No. PF-158 of September 11, 2023, titled "Uzbekistan–2030" Strategy, also outlines specific measures for the education and healthcare sectors, as well as for agriculture:

- Implement a 100% ban on the import, preparation, and sale of products with high trans fats, salt, and sugar in educational and medical institutions.
- Significantly boost productivity and profitability in agriculture.
- Raise the average income per hectare to \$5,000.
- Increase agricultural exports to \$10 billion annually.
- Attract a total of \$15 billion in investments into the agricultural sector.
- Achieve average cotton yields of 45–50 centners per hectare and wheat yields of 80–85 centners per hectare.
- Develop an additional 300,000 hectares using modern water-saving technologies. Plant a variety of crops including food, medicinal, oilseeds, legumes, rice, grains, vegetables, and melons, and establish intensive orchards and vineyards on these lands.
- Ensure that local supply of vegetable, melon, and potato seeds reaches 50%.
- Ensure that the processing rate of agricultural products exceeds 25%.
- Establish 100 new agrilogistics centers with a total capacity of 2.5 million tons, and increase their export potential to \$1 billion.
- Introduce a mechanism for using land lease rights as collateral.
- Implement a registry for nurseries and a certification system for seedlings.
- Set up centers in each district to support scientific research, innovations, new approaches, and modern agro-technical practices in agriculture.
- Provide all subsidies to farmers and clusters through a single "Agrosubsidy" platform on a "one-stop" basis.

## 6. CONCLUSION

Based on the above, the following measures are necessary to ensure food security in Uzbekistan:

- Enhance legislation to ensure the efficient and effective use of land and water resources in agriculture.
- Ensure a high proportion of food products in agricultural output.
- Improve the water use system to ensure the production of the necessary volume of agricultural food products. Specifically, if projects in neighboring countries lead to reduced water supply, modern irrigation technologies such as drip and sprinkler irrigation should be implemented to address water shortages. Increased crop yields will thus enhance the benefits derived from additional food product volumes.
- Encourage the adoption of modern agro-technologies to improve crop yields and livestock productivity.
- Develop an effective system for the procurement, preparation, distribution, processing, and sale of agricultural food products. Create a system that stabilizes food prices and reduces seasonal fluctuations.
- Establish an effective system for storing both fresh and processed food products. Developing an efficient food processing system is crucial. By 2025, Uzbekistan should transition to a higher-income group, requiring an increase in the proportion of processed food products for various goods, considering changes in lifestyle, behavior patterns, and dietary composition.
- Implement food consumption standards and norms, including monitoring essential nutrients, harmful substances, additives, colorants, flavor enhancers, and adherence to preparation and transport technologies. Further develop mechanisms for overseeing food quality.

- Distribute and disseminate essential information on healthy eating to improve public dietary patterns. Medical institutions should play an active role in spreading and delivering this information to the public.

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