



Article

## Modern Approaches of Ensuring Food Security in The Region

Mansur Khudayberganov\*<sup>1</sup>

1. Independent researcher of Urgench State University named after Abu Rayhan Beruni, Uzbekistan

\* Correspondence: [hudayberganovmansur02@gmail.com](mailto:hudayberganovmansur02@gmail.com)

**Abstract:** The article presents the results of a comprehensive analysis of modern approaches to ensuring food security at the regional level. The author considers the theoretical aspects of the concept of food security, identifies the main factors and threats affecting its stability and sustainability. The author pays special attention to methods and mechanisms that serve to increase the efficiency of management of the agrarian sector of the economy, introduce innovative technologies and rational use of natural resource potential, and offers recommendations for improving regional agrarian policy in order to minimize risks and sustainably provide the population with high-quality food products.

**Keywords:** Food Security, Modern Approach, Key Factors, Threats, Innovative Technology, Natural Resource Potential, Regional Agrarian Policy, Sustainable Provision of The Population With High-Quality Food Products

### 1. Introduction

Today, food security which is directly related to the health of the population and the strong development of the Social Economy is one of the pressing issues in the region. In this regard, regulatory legal acts on the production of food industrial products have been adopted in our country. That is, in the last five years, Decree No. PF-36 of the President of the Republic of Uzbekistan [1] was adopted in order to increase the production of high value-added products by 1.5 times and export indicators by 2 times through the introduction of effective mechanisms to support the activities of food industrial production, modernization of existing capacities, technical and technological re-equipment, attracting investments in new projects, further expansion of the range of competitive products in the market, diversification of production of imported substitutes. The adoption of this decree directly assumes the use of modern approaches to ensuring food safety in our country.

### 2. Materials and Methods

The methodology of the article is based on the analysis of scientific and increasingly popular sources, the principles of historicism, critical, comparative, logical analysis, sequence, objectivity, and the reforms being carried out consistently in the new economic policy of the republic. In the research process, analysis and synthesis, induction and deduction, statistical grouping, expert assessment, scientific abstraction, and other methods were widely used.

**Citation:** Khudayberganov, M. Modern Approaches Of Ensuring Food Security In The Region. American Journal of Economics and Business Management 2025, 8(7), 3253-3258.

Received: 28<sup>th</sup> May 2025

Revised: 18<sup>th</sup> Jun 2025

Accepted: 26<sup>th</sup> Jun 2025

Published: 13<sup>th</sup> Jul 2025



**Copyright:** © 2025 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

## Literature Analysis

The conducted review of Russian-language and Uzbek sources made it possible to identify modern scientific positions regarding approaches to ensuring food security in the regions. In Russian-language studies, food security is considered primarily as a key component of economic and social stability, while emphasizing the need for state regulation and monitoring of the agro-industrial sector [2; 3]. Russian authors emphasize the importance of integrating innovative technologies and digital solutions that increase the productivity of the agricultural sector and the efficiency of food resource management.

Uzbek researchers, in particular K.Kh.Abdurakhmanov and N.K.Yuldashev, pay significant attention to the development of local agro-production systems and the use of regional competitive advantages [4], [5]. Particular emphasis is placed on the importance of sustainable nature management, the introduction of resource-saving technologies and increasing the efficiency of logistics chains in order to ensure stable food supplies.

Summarizing the analyzed works, it is possible to note the commonality of views of Russian and Uzbek authors in that the stability of food supply of the region directly depends on the balance and complexity of agricultural policy, the introduction of innovations and the rational use of natural resources. At the same time, Uzbek sources emphasize the need to take into account local specifics and strengthen support for small and medium-sized farms, which is considered the most important condition for the sustainable development of the regional food market.

### 3. Results and Discussion

Ensuring food security requires adequate conditions in the region. In this regard, local enterprises currently create sufficient conditions to ensure security in the absence of a modern system for monitoring the quality and safety of food raw materials and products [6]. The relative moderation of the level of food consumption of regions in the proportion of imported products in terms of ensuring food safety is positively satisfied at the expense of domestic production.

Demand for food commodities can be observed to be higher in densely populated areas [7]. For this, food safety makes a pressing issue. In this regard, food security is one of the main human needs, and its provision is also an important factor for maintaining human health and for global economic and social stability [8].

Attention to ensuring food security in the region began in the early years of independence. That is, after the independence of Uzbekistan, measures were implemented in the following areas to ensure food security:

1. Expansion of household plots of rural residents and allocating new ones;
2. Review of the composition of agricultural crops [9], [10].

Modern approaches to ensuring food security in the region include multifaceted strategies aimed at solving the complex problems of food production, distribution, and consumption. These approaches combine innovative technologies, sustainable practices and collaborative efforts, taking into account local conditions. The main modern approaches to ensuring food security in the region is given to below:

- 1) Regional cooperation and integration - to integrate food resources, promote trade and strengthen regional chains. Its main trends include the following elements:
  - Trade agreements: Ensure the free movement of food products, reduce tariffs, and eliminate trade barriers [11].
  - Regional reserves: creation and management of food reserves for emergency use.
  - Information exchange: Sharing information about food production, market prices, and climate change.
  - Common standards and certification: Development and implementation of regional standards to ensure food safety and quality.

- 2) Sustainable agriculture and resource management are about maintaining soil fertility, using water resources wisely, and adapting to climate change. Its main directions are composed of the following elements:
  - Agroecology: maintaining biodiversity and increasing productivity using natural resources [12].
  - Water-saving technologies: drip irrigation, rainwater harvesting, and water recycling.
  - Soil conservation: prevent soil erosion, increase fertility, and store carbon dioxide.
  - Climate-adaptable crops: growing crops resistant to drought, heat and disease.
- 3) Technological innovation and digitization is to improve production efficiency, improve the supply chain and provide consumer comfort. Its main trends include the following elements:
  - Smart farming technologies: Using sensors, drones, satellites, and big data.
  - Blockchain technology: tracking the supply chain, ensuring food security and preventing counterfeiting.
  - E-commerce platforms: Promote direct trade through online platforms that connect farmers and consumers [13].
  - Mobile applications: providing agronomic advice to farmers, monitoring market prices and making it possible to sell products.
- 4) Food Safety and quality control is the provision of safe and quality food for consumers. Its main directions are composed of the following elements:
  - Strict standards and regulations: Compliance with safety and quality requirements at all stages of food production, processing and distribution.
  - Laboratory testing and certification: Confirmation and certification of food safety.
  - Surveillance systems: identify the origin of food and take quick action in case of security breaches.
  - Consumer protection: Providing accurate information about food products and establishing mechanisms for handling complaints.
- 5) Reducing food losses and waste is the effective use of food resources and the reduction of environmental impact. Its main directions are composed of the following elements:
  - Shelf life extension technologies: packaging technologies, cooling systems and the use of preservatives.
  - Supply chain optimization: reduce transportation costs, improve storage conditions, and improve logistics [14].
  - Food waste recycling: composting, biogas production, and use as animal feed.
  - Awareness raising campaigns: to educate consumers about the consequences of food waste and encourage rational consumption.
- 6) Ensuring nutritional security - ensuring proper nutrition of the population and preventing micronutrient deficiencies. Its main areas include the following elements: biofortification: Increasing the nutritional value of plants (e.g., vitamins and minerals).
  - Food enrichment: adding trace elements to food (e.g. Iodized salt, flour with iron).
  - Food education and promotion: raising awareness of healthy eating and proper nutrition.
  - Target feeding programs: providing food for vulnerable groups (children, pregnant women, the elderly).
  - When implementing these approaches, the following conditions should be taken into account:
    - Consider local conditions: develop solutions that are tailored to regional characteristics, culture, and resources.
    - Public policy and investment: creating an enabling environment for food security, providing subsidies, and developing infrastructure.

- Cooperation and partnership: strengthening cooperation between public bodies, the private sector, scientific institutions and civil society organizations.
- Monitoring and evaluation: regularly assess and improve the effectiveness of food safety programs [15].

In our opinion, we believe that in order to ensure food safety in the region, it is necessary to carry out activities in the following trends:

1. Implement effective economic and ecological management systems for the use of natural and material resources to ensure food security and enable all segments of the population to lead a healthy and active life;
2. Creation of a state-controlled stock of strategic agriculture and food products based on the principles of an effective market economy for use in emergency situations;
3. The creation of a risk monitoring platform, which occurs under the negative influence of natural and man-made disasters, global political and economic crises, pandemics, military practices and other phenomena.

Based on the analysis carried out, on the basis of modern approaches to ensuring food safety, priority directions of this network in districts and cities are proposed in the region, see Table 1.

**Table 1.** Forms of area of food security in the region[9].

No.	Name of regions	Priority areas of the food network
1.	Urgench city	Food processing and export
2.	Khiva city	Development of the culinary and traditional agricultural sectors
3.	Bagat region	Development of sheep and goat breeding in the meat and wool direction, development of the fishing industry
4.	Gurlan region	Development of cattle breeding, sheep and goat breeding in the direction of processing meat, wool and milk, development of rice cultivation, fruit and vegetable cluster and increasing its export potential
5.	Kushkupir region	Further development of fisheries, further improvement of poultry farming and meat and dairy production
6.	Urgench region	Livestock Development
7.	Hazorasp region	Development of sheep, goat farming, horticulture and rice farming in the direction of meat and wool
8.	Tuproqqala region	Development of sheep, goat and camel breeding in the meat and wool direction
9.	Khonqa region	Further development of agricultural production
10.	Khiva region	Development of fruit, vegetable and melon production
11.	Shovot region	Development of cattle breeding for meat and dairy processing, establishment of perennial tree plantations, efficient use of hayfields and pastures, poultry farming, further improvement of innovative irrigation systems
12.	Yangiariq region	Development of sheep and goat breeding in the meat and wool direction, establishment of forest plantations, and organization of fisheries and greenhouse farming

13. Yangibozor region	Development of perennial tree plantations and sawmills, agriculture, agro - and ecotourism, improvement of agroclusters
-----------------------	---

As a result, it will be possible to increase the economic efficiency of the region's districts and cities.

#### 4. Conclusion

Modern approaches to its implementation are considered an effective way to ensure food security in the region. Regulatory and legal documents have been adopted to effectively implement this. To implement it, the region must have sufficient conditions to ensure food security. Through these modern approaches, food production, distribution and consumption relationships are achieved. Based on this, modern approaches to ensuring food security in the region are used, such as regional cooperation and integration, sustainable agriculture and resource management, technological innovation and digitalization, food safety and quality control, reducing food losses and waste, and ensuring nutritional security.

Based on the analysis conducted through this, priority areas of this sector are proposed in districts and cities in the region based on modern approaches to ensuring food security. As a result, it will be possible to increase the economic efficiency of the region's districts and cities. These modern approaches play an important role in ensuring food security in the region and help to increase the stability of the food system in the future.

#### REFERENCES

- [1] President of the Republic of Uzbekistan, "On additional measures to ensure food security in the Republic," Presidential Decree No. PF-36, Feb. 16, 2024. [Online]. Available: <https://lex.uz/uz/docs/-6802687>
- [2] V. I. Kushlin, *State Regulation of Regional Food Security: Theory and Practice*, Moscow: Ekonomika, 2021.
- [3] M. A. Ivanova, "Digital technologies in the agricultural sector as a factor in ensuring food security," *Economy of Agriculture of Russia*, no. 3, pp. 34–42, 2022.
- [4] K. Kh. Abdurakhmanov, "Mechanisms for sustainable development of the agricultural sector of Uzbekistan's economy in the context of globalization," *Economics and Innovative Technologies*, no. 1, pp. 18–26, 2023.
- [5] N. K. Yuldashev, "Improving logistics chains in ensuring Uzbekistan's food security," *Agrarian Bulletin of Uzbekistan*, no. 4, pp. 45–52, 2022.
- [6] I. B. Rustamova, *Scientific-methodological foundations for improving the effectiveness of innovation processes in the agricultural sector*, Doctoral dissertation abstract (DSc in Economics), Tashkent, 2020.
- [7] B. O. Dusmatov, *Development of innovation infrastructure in agro-industrial production under modernization of national economy*, Doctoral dissertation abstract (DSc in Economics), Tashkent, 2022.
- [8] Ya. E. Aliev, "Issues of agricultural market development in ensuring food security," *Finance and Banking Scientific E-Journal*, no. 2, pp. 196–198, 2020.
- [9] Food and Agriculture Organization (FAO), "The State of Food Security and Nutrition in the World," Rome, 2023. [Online]. Available: <https://www.fao.org/publications>
- [10] World Bank, "Agriculture and Food," The World Bank Group, 2022. [Online]. Available: <https://www.worldbank.org/en/topic/agriculture>
- [11] International Food Policy Research Institute (IFPRI), *Global Food Policy Report 2023*, Washington, DC: IFPRI, 2023. [Online]. Available: <https://www.ifpri.org/publication/global-food-policy-report-2023>
- [12] OECD, *Innovation, Productivity and Sustainability in Food and Agriculture*, Paris: OECD Publishing, 2021. doi: 10.1787/c9b907f6-en

- [13] United Nations Development Programme (UNDP), *Food Systems Transformation: Pathways for Country Action*, New York: UNDP, 2022.
- [14] A. B. Temirov, "Legal foundations and regional features of food security," *Economy and Education*, no. 3, pp. 25–30, 2021.
- [15] S. R. Ergashev, "Ways to develop logistics in the food sector based on foreign experience," *Journal of Innovative Development*, vol. 5, no. 2, pp. 67–73, 2023.