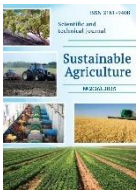
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Problems and Solutions of Agribusiness in the Context of Globalization

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a r t i c l e i n f o

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a b s t r a c t

This article examines the current state of agribusiness in Uzbekistan, identifies key problems, and defines prospective directions for the development of the industry. A brief overview of scientific publications is presented, statistical data are analyzed, and government support measures are discussed. Based on the conducted analysis, recommendations for the sustainable development of the agricultural sector are formulated.

1. INTRODUCTION

The agricultural sector holds a special place in the economy of Uzbekistan, ensuring the country's food security, providing employment for a significant portion of the rural population, and making a substantial contribution to export earnings. According to the State Statistics Committee, approximately 25% of the working-age population is employed in agriculture, and agricultural products account for over 30% of total export volume. In the context of active market transformations and global challenges such as climate change, water scarcity, and instability in global food markets, sustainable development of agribusiness becomes one of the priority tasks of national economic policy.

Since 2017, Uzbekistan has been implementing a course of reforming the agro-industrial complex: market mechanisms are being introduced, the state procurement system is being liquidated, the transition to a cluster model is underway, investments are being stimulated, and digitization is being encouraged. Along with positive changes, the sector still faces a number of systemic problems: low technological capacity, limited access to financing, outdated irrigation infrastructure, weak logistics, and a shortage of qualified personnel.

The relevance of this study is determined by the need for a comprehensive assessment of the current state of agribusiness in Uzbekistan in the context of ongoing reforms, as well as the development of recommendations for its sustainable development. Despite the availability of separate studies dedicated to the economy of agriculture, there is a lack of works in the scientific literature that consider modern transformational processes and global challenges.

The aim of this article is to analyze the current situation in the agricultural sector of Uzbekistan, identify key problems, and determine prospects for its further development.

The tasks of the research include:

- An overview of theoretical and applied sources on the topic;
- Analysis of institutional and economic aspects of agribusiness;
- Identification of factors limiting sector growth;
- Justification of sustainable development directions.

The scientific novelty lies in the systematization of current data on Uzbekistan's agricultural reform and an emphasis on the relationship between institutional measures and real results at the level of agricultural producers.

2. LITERATURE REVIEW

Issues of agribusiness and agricultural development in Uzbekistan are actively studied by both domestic and foreign scholars, especially in the context of economic reforms in recent years. Much attention is paid to the transformation of the institutional environment, water use problems, increasing productivity, sustainable development, and integration into global agricultural chains.

Uzbek researchers (Dzhuraev S.R., 2021; Tukhtamurov A.A., 2022) emphasize the transition from an administrative-command model of agrarian management to a market one, including the formation of agro-clusters and decentralization of the management system. The growth of the private sector, changes in the structure of agricultural production, and new challenges arising from climate change and water scarcity are also noted.

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A significant contribution to the study of Uzbekistan's agricultural economy comes from a series of analytical reports by the World Bank and the Food and Agriculture Organization (FAO), which discuss issues of improving water resource management, agricultural logistics, access to financing, and the introduction of modern agricultural technologies. In the FAO reports (2022), the need for integrating sustainable farming principles and reducing losses at post-harvest handling and transportation stages is emphasized.

Some studies focus on comparative analysis of agricultural policy in Uzbekistan and Central Asian countries. For instance, in the works of Khamidov A. and co-authors (2020), institutional transformations and water resource management approaches in Uzbekistan, Kazakhstan, and Tajikistan are analyzed, with the conclusion that coordination in transboundary water use is crucial.

Despite the wide range of research, there remains a lack of comprehensive works that simultaneously address economic, institutional, and technological aspects of agribusiness development in Uzbekistan. This article aims to fill this gap by summarizing existing theoretical materials and analyzing recent statistical data in order to develop recommendations for the further sustainable development of the agricultural sector.

3. RESEARCH METHODOLOGY

The main methods used were:

• Comparative analysis of agricultural policy in Uzbekistan and countries with similar climatic and economic profiles;

• Statistical analysis of data from the State Statistics Committee of the Republic of Uzbekistan, Ministry of Agriculture, FAO, and the World Bank;

• A systems approach to assessing the interaction of institutional and market factors.

4. RESULTS

1. Current State of Agribusiness in Uzbekistan

At the present stage, agribusiness in Uzbekistan represents a dynamically developing sector encompassing the production, processing, storage, sale, and export of agricultural products. In recent years, the sector has undergone large-scale structural transformations as part of state programs to reform the agro-industrial complex. These reforms aim to strengthen market mechanisms, support farmers' and dehkan farms, increase investment attractiveness, and encourage innovation.

One of the key achievements of recent years has been the introduction of the cluster model in agriculture. Clusters unite farmers, processors, and logistical units into a single value-added chain, which helps reduce transaction costs and increase the efficiency of agricultural production. According to the Ministry of Agriculture of the Republic of Uzbekistan, by 2024, more than 180 agro-clusters were functioning in the country, covering such areas as cotton farming, fruit and vegetable farming, livestock breeding, and viticulture.

There is also a noticeable increase in agricultural production volumes: according to the State Statistics Committee, the gross agricultural output in 2023 exceeded 430 trillion sums, an increase of 4.1% compared to the previous year. The largest growth was observed in crop production, especially in the fruit and vegetable sector, which forms the core of the export potential of the agribusiness sector. However, livestock breeding, despite significant resources, still shows relatively low productivity.

Considerable attention is being paid to the digitalization of agriculture. Elements of "smart" farming are being implemented in the country: geographic information systems, satellite field monitoring, automated irrigation systems, and digital platforms for procurement and sales. However, the digitalization process remains fragmented and does not cover small farms sufficiently, especially in remote regions.

Table 1.

Gross Agricultural Production Dynamics in Uzbekistan (2020–2023)

Year	Gross Production (trillion sums)	Growth Rate (%) compared to previous year
2020	339.0	—
2021	365.2	+7.7%
2022	412.5	+12.9%
2023	430.1	+4.1%

* *Source: State Committee of the Republic of Uzbekistan on Statistics, "Agriculture of Uzbekistan: Key Indicators for 2020–2023."*

An ongoing issue is ensuring access to financial resources. Despite the presence of specialized banking programs (Agrobank, "Microcreditbank," preferential loan programs), many farmers face difficulties in obtaining financing due to inadequate collateral, high levels of bureaucracy, and low financial literacy. This is especially relevant for emerging agribusinesses and women in rural areas.

In the context of climate change, water scarcity becomes a systemic threat to the agricultural sector. Main irrigation in Uzbekistan is carried out through surface water sources, with over 90% of water being used in agriculture. The deterioration of irrigation infrastructure, low efficiency of canal systems, and deficiencies in water resource management lead to irrational water usage. In response to these challenges, the government is implementing water-saving technologies, including drip and sprinkler irrigation, but their widespread adoption requires significant investment and workforce training.

Exporting agricultural products remains an important direction for the development of agribusiness. In 2023, agricultural exports amounted to more than $2.4 billion. The main export items are fresh and processed fruits, vegetables, nuts, and cotton. Supplies to Russia, China, Kazakhstan, countries of the Persian Gulf, and the European Union are actively developing. However, high logistics costs, non-compliance of products with international quality standards and sanitary norms continue to impede the growth of export potential.

Table 2.

Main Agricultural Export Products of Uzbekistan (2023)

Product Name	Export, USD million	Share in Agro-exports, %
Fruits and Berries	950	39.6%
Vegetables	520	21.7%
Nuts	270	11.3%
Cotton and Processed Products	210	8.8%
Other	450	18.6%
Total	**2,400**	**100%**

* *Source: Ministry of Agriculture of the Republic of Uzbekistan. Annual Report on the Development of the Agricultural Sector (2023), https://agro.uz*

Finally, it is worth noting the social aspect: agribusiness remains the main source of employment in rural areas. At the same time, there is a gender and age imbalance in the workforce: young people often leave for cities or abroad in search of alternative sources of income, while women are underrepresented in the management of agribusinesses. This requires the formation of inclusive development models, including through education, grant support, and the development of rural entrepreneurship.

Thus, Uzbekistan's agribusiness is currently undergoing a transformation: significant achievements are accompanied by challenges that require a systematic and cross-sectoral approach. The effective implementation of modernization programs, investment in infrastructure and technology, development of human capital, and institutional management mechanisms are essential for the sustainable development of the agricultural sector.

2.Problems and Challenges of Agribusiness in Uzbekistan

Despite significant progress and successes in recent years, Uzbekistan's agricultural sector continues to face a number of systemic problems and challenges that limit its development and sustainability.

These problems are related to both internal factors and external economic and environmental challenges.

Key limitations of agribusiness at the current stage include:

• Limited access to financing and technology for small farms;
• Water scarcity and low efficiency of irrigation systems;
• Fragmented digitalization and a lack of qualified personnel;
• High logistics costs and infrastructure inadequacies.

Based on a comparative analysis and summarization of empirical data, the directions for sustainable development of the agricultural sector have been proposed, including:

• Implementation of water- and energy-saving technologies;
• Development of agricultural insurance and microfinancing;
• Expansion of the training and qualification system for personnel;
• Integration of agribusiness into global value chains with a focus on quality standards and environmental sustainability.

Table 3.

Main Problems and Limitations as well as Directions for Agribusiness Development

Problem	Manifestation in the Industry	Specific Measures
Access to Financing	Lack of collateral, bureaucracy, low financial literacy	Development of microfinance, agricultural insurance, benefits
Water Scarcity	Deteriorated irrigation infrastructure, ineffective irrigation	Drip irrigation, solar pumps
Limited Digitalization Level	Lack of technology access for small farms	Subsidies for AgTech, agricultural platforms, training
Personnel Shortage	Lack of agricultural specialists, especially in regions	Agricultural colleges, professional development courses
Logistics Barriers	High transportation costs, lack of storage facilities	Hubs, refrigerated terminals, certification for international standards

** Source: Food and Agriculture Organization (FAO), Organic Agriculture and Agrotechnologies in Uzbekistan. 2023 Report, https://www.fao.org*

Thus, the problems of agribusiness in Uzbekistan require a comprehensive approach and active government support. The introduction of innovations, improvement of infrastructure, and creation of favorable conditions for financial and technological growth will contribute to the sustainable development of the agricultural sector and its increased competitiveness.

The analysis of the current state of agribusiness in Uzbekistan has led to several significant results, confirming both the successes in the process of sector transformation and the systemic challenges that limit its sustainable development.

Identified Key Directions for Structural Transformation in the Agricultural Sector. Since 2017, the country has been transitioning from a centralized management model to market mechanisms, actively introducing a cluster model, expanding export orientation, and digitalizing production processes. The most noticeable changes have occurred in horticulture and cotton farming.

Table 3.

Main Achievements of Agricultural Reform in Uzbekistan (2020–2023)

Indicator	Value (as of 2023)	Change Compared to 2020
Gross agricultural production	430.1 trillion UZS	+26.8%
Number of agricultural clusters	180	2.5 times growth
Agricultural export volume	2.4 billion USD	+33%
Share of fruits and vegetables in export	61.3%	Steady growth
Introduction of digital technologies	Partial implementation in large clusters	Initial stage

** Source: State Committee of the Republic of Uzbekistan on Statistics, Agriculture of Uzbekistan. Key Indicators for 2020–2023, https://stat.uz/ru. Ministry of Agriculture of the Republic of Uzbekistan, Annual Report on Agricultural Sector Development (2023), https://agro.uz*

Main Achievements of Agricultural Reform:

• Gross agricultural production grew by 26.8% during 2020-2023;
• The number of agricultural clusters increased to 180;
• Expansion of markets and an increase in agro-exports to $2.4 billion in 2023.

Thus, the results of the study indicate a positive trend in the agricultural sector of Uzbekistan amidst ongoing institutional modernization. However, for the sustainable development of agribusiness, a systemic approach is required, combining government support, infrastructure development, and the creation of a favorable business environment.

5. CONCLUSION

Uzbekistan's agricultural sector is currently undergoing active modernization, which is accompanied by significant achievements as well as the overcoming of certain difficulties. In recent years, the country has been implementing reforms aimed at diversifying agricultural production, expanding export opportunities, and improving the resilience of agribusiness to both internal and external challenges.

One of the most important achievements is the development of agricultural clusters and an increase in agro-export volume. Specifically, agricultural exports in 2023 amounted to $2.4 billion, an increase of 33% compared to previous years. However, significant challenges such as water scarcity, high logistics costs, financing issues, and personnel shortages continue to hinder the further development of the sector.

An important aspect of improving the state of agribusiness is the implementation of new technologies, especially in the areas of water conservation and digitalization, which can significantly enhance agricultural efficiency. It is also necessary to continue efforts to improve financial mechanisms and develop infrastructure, which will ensure stable growth and the integration of agribusiness into global markets.

The recommendations proposed in the article include supporting microfinance for small farmers, the development of water- and energy-saving technologies, enhancing personnel training and education in digital technologies, and improving logistics infrastructure to reduce costs. Only a comprehensive approach that includes government support, effective resource utilization, and the introduction of innovative technologies will enable Uzbekistan to create a sustainable and competitive agricultural industry.

As a result of the conducted research, it can be stated that agribusiness in Uzbekistan has significant potential for further growth and modernization, but for maximum efficiency, more active involvement of the private sector, increased investments, and deeper integration into international agricultural supply chains are required.

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