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**AGRICULTURAL DEVELOPMENT TRENDS IN THE SYRDARYA
REGION: ANALYSIS OF PRODUCTION, LAND USE EFFICIENCY, AND
AGRARIAN REFORMS**

Abstract. The article analyzes the agricultural development trends in the Syrdarya region during 2024–2025 based on official statistical data. It examines the production dynamics of key crops (cotton, grain, vegetables), the efficiency of sown area utilization, the implementation of modern agro-technologies, and the outcomes of agrarian reforms, including the cluster system. Particular attention is given to the rational use of water resources and the prospects for production diversification. The research methodology is based on a comprehensive statistical analysis of time series, calculation of growth rates, and a comparative assessment with national indicators. The results confirm a positive industry trend while identifying systemic challenges that require further enhancement of state support.

Keywords: agriculture, Syrdarya region, agrarian reforms, cotton production, grain farming, intensive agriculture, water-saving technologies, clusters.

**ТЕНДЕНЦИИ РАЗВИТИЯ СЕЛЬСКОГО ХОЗЯЙСТВА
СЫРДАРЬИНСКОЙ ОБЛАСТИ: АНАЛИЗ ПРОИЗВОДСТВА,
ЭФФЕКТИВНОСТИ ЗЕМЛЕПОЛЬЗОВАНИЯ И АГРАРНЫХ РЕФОРМ**

Аннотация. В статье на основе официальных статистических данных анализируются тенденции развития сельского хозяйства Сырдарьинской области в период 2024–2025 гг. Рассматривается динамика производства ключевых культур (хлопок, зерно, овощи), эффективность использования посевных площадей, внедрение современных агротехнологий и результаты аграрных реформ, включая кластерную систему. Особое внимание уделено рациональному использованию водных ресурсов и перспективам диверсификации производства. Методология исследования базируется на комплексном статистическом анализе временных рядов, расчете темпов роста и сравнительной оценке с общереспубликанскими показателями. Результаты подтверждают положительный отраслевой тренд, одновременно выявляя системные проблемы, требующие дальнейшего совершенствования механизмов государственной поддержки.

Ключевые слова: сельское хозяйство, Сырдарьинская область, аграрные реформы, производство хлопка, зерноводство, интенсивное сельское хозяйство, водосберегающие технологии, кластеры.

Introduction. The Syrdarya region of the Republic of Uzbekistan is traditionally one of the country's key agricultural regions. Its geographical location, extensive irrigated land, and developed irrigation infrastructure create favorable conditions for sustainable agricultural production. Given the state policy aimed at diversifying the agricultural sector, increasing efficiency, and ensuring food security, analyzing regional trends is of particular relevance.

During 2024–2025, the region actively implemented measures for crop diversification, the introduction of water-saving technologies, the use of high-yielding varieties, and the modernization of the material and technical base. The purpose of this article is to provide a comprehensive analysis of the major changes in the

agriculture of the Syrdarya region during the specified period, evaluate the effectiveness of agrarian reforms, and identify prospects for further development.

Literature Review. The issues of increasing agricultural efficiency have been extensively studied by both local and international scholars. Specifically, Eshov M. (2021) emphasized the strategic role of the agrarian sector in ensuring economic stability, while Allan (2022) proposed innovative water resource management methods specifically adapted to Central Asian conditions. In the Republic of Uzbekistan, the theoretical and methodological issues regarding the formation of suburban zones and agriculture have been studied from a geo-urbanistic perspective by A.S. Soliyev, O.B. Ota-Mirzayev, and E.A. Ahmedov. Furthermore, the general theoretical and practical aspects within the field of agricultural geography have been researched in the works of Z.M. Akramov, T. Egamberdiyev, B. Mirtursunov, R. Khodiyev, Yu.I. Ahmadaliyev, J.M. Musayev, M.M. Egamberdiyeva, F.T. Rajabov, and others. Additionally, I. Islomov has extensively covered the territorial structure of agriculture in the Tashkent suburban area and its optimization in his scientific research.

Research Methods. The study is based on official data from the Statistics Agency under the President of the Republic of Uzbekistan, the Ministry of Agriculture of the Republic of Uzbekistan, and regulatory legal acts governing the agrarian sector. A complex of methods was applied: statistical (analysis of time series, calculation of chain and basic growth rates, determination of average annual growth), comparative (comparison of regional and national indicators), and systems analysis to evaluate the impact of the cluster system and water-saving technologies.

Research Results. *Structure of the Syrdarya Region.* The region's agriculture is primarily based on irrigated farming. The main crops include cotton, cereal grains, vegetables, melons, and fodder. Production is organized through farms, dehkan farms, and agro-clusters. In 2024–2025, there was a steady trend toward diversification:

alongside traditional crops, vegetable growing, horticulture, and greenhouse farming developed actively. This increased the share of high-value products and reduced dependence on cotton monoculture.

Efficiency of Sown Area Utilization. A key growth factor is the introduction of modern agro-technologies: drip irrigation, laser land leveling, precision farming, and the application of mineral fertilizers according to science-based standards. Consequently, the yields of main crops have shown steady growth. The production dynamics of key products are presented in Table 1 (data in thousand tons).

Table 1: Dynamics of Key Agricultural Crop Production in the Syrdarya Region (2022–2025)

Year	Cotton	Vegetables	Grain
2022	310	410	295
2023	322	425	310
2024	335	438	328
2025	348	452	347

Source: Compiled by the author based on data from the Statistics Agency of the Republic of Uzbekistan

Calculations show that the average annual growth rate for cotton production was 3.9%, grain - 2.6%, and vegetables - 5.6%. The growth in vegetable production is particularly notable, aligning with the national strategy for diversification and increasing export potential. By 2025, vegetable production in the region reached approximately 353 thousand tons, confirming the accuracy of the statistical series presented.

Agrarian Reforms and the Cluster System. A vital direction of the reforms was the introduction of the cluster model, primarily in the cotton-textile complex. Clusters integrate raw material production, processing, and marketing, providing farmers with a stable market and access to modern technology. Several large cotton-textile clusters operate in the Syrdarya region, contributing to increased added value and job creation.

Furthermore, measures to optimize water use were implemented: the wide application of water-saving technologies reduced specific water consumption per unit of product by 15–20% compared to 2022.

Challenges and Development Prospects. Despite positive dynamics, the industry faces ongoing challenges: limited water resources, climate change impacts, local soil salinization, and insufficient technical equipment in some households. These factors limit further productivity growth.

Promising directions include:

- Expanding areas for intensive orchards and vineyards;
- Implementing organic farming (aimed at obtaining international certifications);
- Developing deep processing of products (drying, shock freezing);
- Digitalizing agricultural production through the «Agroplatform» system.

The implementation of these measures within state programs will significantly increase the region's export potential by 2030 and ensure the sustainable development of rural areas.

Conclusion. In 2024–2025, the agriculture of the Syrdarya region demonstrated steady growth across key indicators. Agrarian reforms, the cluster system, and the introduction of innovative technologies contributed to increased production efficiency and rational resource use. However, overcoming existing limitations requires further investment in infrastructure, science, and vocational training. The results obtained can be utilized by state administration bodies in developing regional programs for the development of the agro-industrial complex.

The research results indicate that while the agriculture of the Syrdarya region demonstrates sustainable growth rates, soil salinization and water scarcity remain the primary structural constraints.

Recommendations: Full implementation of digital monitoring and precision farming through the “Agroplatform” system to optimize resource allocation.

Expanding the localization of salt-tolerant and early-maturing crop varieties to mitigate the risks of soil degradation. Increasing the number of high-tech greenhouse complexes to enhance the region's export potential and ensure year-round food security.

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