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## KIMYO

**С.Ш.Кабиров, М.Б.Холиков**

Технологические методы переработки фруктов и овощей..... 226

**В.К.Boboyev, N.N.Yusupova**

Yangi O'zbekistonda chorvachilikni innovatsion texnologiyalar asosida rivojlantirish istiqbollari ..... 230

**S.S.Toyirov**

O'zbekiston qishloq xo'jaligining texnika bilan ta'minlash va undagi dastlabki muammolar ..... 233

**M.A.Mirzayeva, N.I.Teshaboyev, M.Z.Mamadaliyev**

Pomidor o'simligining biologik xususiyatlarini o'rganish..... 237

**I.I.Musayev, A.T.Turdaliyev, A.A.Ahmadjonov, Y.H.Muhammadov**

Och tusli bo'z tuproqlar unumdorligi va ularda uzum hosildorligi ..... 241

**S.X.Zakirova, Z.M.Rajavaliyeva**Farg'ona viloyatining eskidan sug'orilgan tipik bo'z tuproqlari va malboro navli malina (*Rubus idaeus*) yetishtirish' ..... 246

## GEOGRAFIYA

**X.S.Mirzaaxmedov**

Farg'ona iqtisodiy rayoni investitsion muhiti (iqtisodiy geografik tahlil)..... 253

**D.A.Toymbayeva**

Shamollarni o'rganish va tadqiq etishda geoaxborot tizimlari (Sirdaryo viloyati hududida misolida)..... 262

**Sh.X.Turdiboyeva**

Qadamjoylar va ziyoratgohlarda turizm va rekreatsiyani rivojlantirish istiqbollari (Farg'ona vodiysi misolida) ..... 267

**I.I.Muxitdinov**

Kriminogen vaziyatni shakllantiruvchi omillar va ularning tasnifi (Farg'ona viloyati misolida) ..... 273

**R.T.Pirnazarov**

O'rta Osiyo to'g'onli ko'llarining suv toshqini xavfini genetik-geomorfologik baholash asoslari .... 278

**K.Khamraev**

Territorial organization and development prospects of the food industry in Samarkand region.... 285

## EKOLOGIYA

**Н.Р.Закирова, М.К.Юлдашев**

Инновационная "Проблемная" технология в образовании: применение на уроках экологии..... 290

**N.R.Alimkulov, Sh.G.Qarshiboyeva, G'.D.Jangirov**

Iqlim o'zgarishi sharoitida Mirzacho'l litogen va gidroiqlimiy muhitining agrolandshaftlar shakllanishidagi o'rni ..... 294

## ILMIY AXBOROT

**M.Y.Sultonov**

Tarixiy xotira va ma'naviy meros: Sharq mamlakatlari tajribasi..... 302

**M.U.Mahmudov***Rhynococris iracundus* (Heteroptera: Reduviidae) turining Farg'ona vodiysida tarqalishi va biologik kurashdagi o'rni ..... 306

## ILMIY AXBOROT

**M.X.Akbarova, D.Sultonov, Z.A.Yusupova, N.S.Salimova, F.F.Mahmudov**Hayotini ilm-fan va ta'limga bag'ishlagan fidoyi olim, mehribon ustoz (*Valijon Mahmudov tavalludining 75 yilligiga bag'ishlanadi*) ..... 302



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**TERRITORIAL ORGANIZATION AND DEVELOPMENT PROSPECTS OF THE FOOD INDUSTRY IN SAMARKAND REGION****SAMARQAND VILOYATIDA OZIQ-OVQAT SANOATINING HUDUDIIY TASHKILOTI VA RIVOJLANISH ISTIQBOLLARI****ТЕРРИТОРИАЛЬНАЯ ОРГАНИЗАЦИЯ И ПЕРСПЕКТИВЫ РАЗВИТИЯ ПИЩЕВОЙ ПРОМЫШЛЕННОСТИ САМАРКАНДСКОЙ ОБЛАСТИ****Khamraev Kozim** 

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**Abstract**

The article examines the territorial organization and development prospects of the food industry in Samarkand Region as a strategic sector of Uzbekistan's regional economy. Based on statistical data, institutional reports, and field observations, the study analyzes the spatial distribution of food industry enterprises, the role of resource potential, and the impact of infrastructural and socio-economic factors. The research applies methods of regional economic analysis, SWOT assessment, and comparative evaluation to identify competitive advantages and existing challenges. The results highlight the importance of clustering, technological modernization, and state-private partnership in ensuring sustainable growth of the regional food industry. It is concluded that the integration of innovative management approaches, infrastructure development, and export-oriented strategies will significantly strengthen the competitiveness of Samarkand's food industry in both domestic and international markets.

**Annotatsiya**

Maqolada Samarqand viloyatining oziq-ovqat sanoati hududiy tashkiloti va uning rivojlanish istiqbollari mintaqaviy iqtisodiyotning strategik sohasi sifatida tahlil qilindi. Rasmiy statistika, davlat hisobotlari hamda amaliy kuzatuvlariga asoslanib, sanoat korxonalarining hududiy joylashuvi, resurs salohiyatining o'ri, infratuzilma va ijtimoiy-iqtisodiy omillarning ta'siri o'rganiladi. Tadqiqotda mintaqaviy iqtisodiy tahlil, SWOT tahlili va qiyosiy yondashuv metodlari qo'llanib, ustunliklar va mavjud muammolar aniqlanadi. Natijalar klasterlashuv, texnologik modernizatsiya hamda davlat-xususiy hamkorlikni kuchaytirishning muhimligini ko'rsatadi. Xulosa qilinishicha, innovatsion boshqaruv, infratuzilma rivoji va eksportga yo'naltirilgan strategiyalar Samarqand viloyati oziq-ovqat sanoatining ichki va tashqi bozorlarda raqobatbardoshligini sezilarli darajada mustahkamlashi mumkin.

**Аннотация**

В статье рассматриваются территориальная организация и перспективы развития пищевой промышленности Самаркандской области как стратегически важного сектора региональной экономики. На основе официальной статистики, государственных отчетов и полевых наблюдений анализируются пространственное размещение предприятий пищевой промышленности, роль ресурсного потенциала, а также влияние инфраструктурных и социально-экономических факторов. В исследовании применены методы регионального экономического анализа, SWOT-оценка и сравнительный подход, что позволило выявить конкурентные преимущества и существующие проблемы. Результаты показывают важность кластеризации, технологической модернизации и усиления государственно-частного партнерства для устойчивого роста отрасли. В заключение подчеркивается, что внедрение инновационных методов управления, развитие инфраструктуры и экспортноориентированные стратегии могут значительно повысить конкурентоспособность пищевой промышленности Самаркандской области на внутреннем и внешнем рынках.

**Key words:** Food industry; regional economy; territorial organization; Samarkand Region; development prospects; clustering; competitiveness.

**Kalit so'zlar:** Oziq-ovqat sanoati; mintaqaviy iqtisodiyot; hududiy tashkilot; Samarqand viloyati; rivojlanish istiqbollari; klasterlashuv; raqobatbardoshlik.

**Ключевые слова:** Пищевая промышленность; региональная экономика; территориальная организация; Самаркандская область; перспективы развития; кластеризация; конкурентоспособность.

**INTRODUCTION**

The food industry is recognized as one of the fundamental drivers of regional economic development, playing a crucial role in ensuring food security, creating employment opportunities, and

strengthening export potential [1]. Within Uzbekistan, the Samarkand Region occupies a unique position due to its favorable natural and climatic conditions, diverse agricultural resources, and historically developed traditions of food production [2].

In recent decades, the processes of industrial modernization, integration into global economic relations, and the digitalization of production systems have increasingly emphasized the importance of effective territorial organization of the food industry. The optimization of enterprise distribution, clustering of production, and adoption of innovative technologies are becoming decisive factors in shaping the sustainable growth of the sector [3].

While several studies have addressed regional development and industrial organization in general, comprehensive research on the territorial organization of the food industry in Samarkand Region remains limited. This gap highlights the need for in-depth analysis aimed at identifying the strengths and weaknesses of the sector, exploring opportunities for cluster-based development, and outlining strategic directions for enhancing competitiveness [1][4].

### MATERIALS AND METHODS

The methodological framework of this study is grounded in the principles of regional economics and economic geography, with particular attention to theories of spatial organization and industrial localization developed in the works of A. Weber, W. Christaller, and contemporary scholars of regional development [1]. These theoretical perspectives allow for the analysis of how production systems, including the food industry, are distributed across territories under the influence of resource availability, market accessibility, infrastructure, and institutional support. By applying these concepts to the case of Samarkand Region, the study seeks to elucidate the mechanisms through which territorial organization affects the efficiency, competitiveness, and sustainability of the regional food industry.

The empirical foundation of the research consists of a broad dataset combining both quantitative and qualitative sources (see Table 1). Statistical indicators were collected from the State Committee of the Republic of Uzbekistan on Statistics and sectoral reports of the Ministry of Agriculture, with a chronological scope covering the years 2015 to 2024 [2]. These data reflect production volumes, enterprise structures, employment patterns, investment flows, and export dynamics in the food industry. To complement the quantitative data, analytical reports from international organizations, including the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Development Programme (UNDP), were incorporated in order to situate the regional trends within global and national development agendas. Furthermore, the research design integrates primary data obtained through field observations of industrial clusters, as well as semi-structured interviews with experts, enterprise managers, and local policymakers, providing insights into practical challenges and strategic visions of the sector.

**Table 1.**

**Data Sources Used in the Research**

Source Type	Institution / Organization	Time Coverage	Data Content
Official Statistics	State Committee of the Republic of Uzbekistan on Statistics	2015–2024	Production volumes, employment, investment flows
Sectoral Reports	Ministry of Agriculture of Uzbekistan	2015–2024	Structure of enterprises, agro-industrial development
International Reports	FAO, UNDP	2015–2024	Global and national food industry trends
Field Observations	Industrial clusters in Samarkand Region	2023–2024	Geographical distribution of enterprises, infrastructure conditions
Expert Interviews	Managers, policymakers, local specialists	2023–2024	Strategic visions, practical challenges

Methodologically, the study applies a mixed set of analytical tools to capture the multidimensional character of regional food industry development (see Table 2). Regional economic analysis is employed to evaluate the contribution of the food industry to gross regional product and

GEOGRAFIYA

to identify sectoral interdependencies within the regional economy [1]. Spatial analysis, grounded in both descriptive and cartographic methods, is used to examine the geographical distribution of enterprises, highlighting processes of concentration, dispersion, and emerging tendencies toward clustering. SWOT analysis serves as a mechanism to assess the sector’s internal strengths and weaknesses while identifying external opportunities and threats that shape its developmental trajectory [2]. In addition, comparative analysis is applied, contrasting the performance of Samarkand Region with other industrially advanced regions of Uzbekistan and selected Central Asian economies, thereby situating the findings within a broader macro-regional context [3].

Table 2.

*Methods and Analytical Tools Applied*

Method / Approach	Description	Purpose in Research
Regional Economic Analysis	Evaluation of the contribution of the food industry to GRP and linkages	To identify economic significance and sectoral interdependencies
Spatial Analysis (descriptive & cartographic)	Study of geographical distribution of enterprises and clusters	To detect concentration, dispersion, and clustering processes
SWOT Analysis	Assessment of internal strengths/weaknesses and external opportunities	To identify development potential and risks
Comparative Analysis	Benchmarking Samarkand against other regions and Central Asia	To situate regional trends in a macro-regional context
Qualitative Methods (interviews, observations)	Insights from practitioners and policymakers	To complement quantitative evidence with contextual understanding

Such an integrative methodological approach ensures that the research combines quantitative precision with qualitative interpretative depth, providing not only statistical evidence but also a contextual understanding of institutional, infrastructural, and socio-economic factors. This comprehensive design makes it possible to draw scientifically substantiated conclusions on the territorial organization and future development prospects of the food industry in Samarkand Region, while also offering recommendations of practical significance for policymakers, investors, and regional development institutions.

**RESULTS AND DISCUSSION**

The results of the research reveal that the food industry of Samarkand Region demonstrates steady growth, supported by favorable agricultural resources, infrastructural modernization, and increasing state support. Statistical data for 2015–2024 indicate that production volumes in the food sector have grown by an average of 6–8% annually, while the share of the food industry in the gross regional product (GRP) increased from 9.2% in 2015 to 13.5% in 2023. Employment in the sector expanded by 15% during the same period, highlighting its role as a major provider of jobs in both urban and rural areas. Export-oriented production, particularly in fruit and vegetable processing, has become a significant driver of regional competitiveness.

However, the analysis also highlights a number of structural constraints. Despite growth in production, the distribution of enterprises remains uneven, with a concentration in the city of Samarkand and surrounding districts, while peripheral areas are characterized by limited access to processing facilities. Furthermore, infrastructural limitations, such as outdated storage systems and insufficient transport logistics, reduce the efficiency of supply chains.

To provide a structured understanding of the sector’s development potential, a SWOT analysis was conducted (Table 3).

Table 3.

*SWOT Analysis of the Food Industry in Samarkand Region*

<i>Strengths</i>	<i>Weaknesses</i>
Favorable agro-climatic conditions and resource potential	Uneven territorial distribution of enterprises
Rich traditions of food production and pro-	Limited technological modernization in smaller

cessing	enterprises
Growing state support and investment incentives	Deficiencies in logistics and storage infrastructure
Expanding export markets for fruits and vegetables	Dependence on seasonal agricultural output
<b>Opportunities</b>	<b>Threats</b>
Development of agro-industrial clusters and regional cooperation	Intensifying competition in domestic and regional markets
Integration of digital and innovative technologies	Vulnerability to climate change and resource scarcity
Strengthening of public-private partnerships (PPP)	Price volatility in global agricultural and food markets
Expansion of foreign direct investment (FDI)	Risk of outmigration and shortage of skilled workforce

The SWOT analysis confirms that the strengths of Samarkand's food industry are closely linked to its natural endowments, historical traditions, and growing export orientation. At the same time, weaknesses such as uneven spatial distribution of enterprises and infrastructural bottlenecks must be addressed through targeted development strategies.

When compared with other regions of Uzbekistan, Samarkand demonstrates competitive advantages in fruit and vegetable processing, but lags behind regions like Tashkent and Fergana in terms of high-tech food production and logistics development. Table 4 illustrates these differences.

**Table 4.**

**Comparative Indicators of the Food Industry in Selected Regions of Uzbekistan (2023)**

<b>Indicator</b>	<b>Samarkand Region</b>	<b>Tashkent Region</b>	<b>Fergana Valley</b>
Share of food industry in GRP (%)	13.5	15.8	12.9
Annual growth rate (2015–2023)	6.8%	7.5%	6.2%
Export share in production (%)	28.4	32.1	24.6
Level of technological modernization (index)	Medium	High	Medium
Logistics infrastructure quality	Moderate	Advanced	Moderate

The comparative evaluation underscores that while Samarkand holds strong positions in resource-based production and export growth, the modernization of technology and logistics infrastructure remains a pressing need for strengthening competitiveness.

### DISCUSSION

The findings suggest that further development of the food industry in Samarkand Region should be guided by three interrelated strategic priorities. First, the clustering of enterprises will enhance value chain integration, reduce transaction costs, and stimulate innovation diffusion. Second, technological modernization, particularly in storage, packaging, and digital supply chain management, will improve efficiency and reduce post-harvest losses. Third, the expansion of state-private partnerships will provide the financial and institutional foundation for long-term development.

These measures align with international experiences, where successful food industry clusters (e.g., in Italy, Turkey, and South Korea) have demonstrated the positive impact of innovation, clustering, and partnership models on regional competitiveness. For Samarkand, adopting such strategies will not only ensure sustainable growth but also contribute to national food security and export diversification.

The conducted research demonstrates that the food industry of Samarkand Region is one of the most dynamic and strategically significant sectors of the regional economy. Its territorial organization, based on favorable agro-climatic conditions and strong agricultural traditions, provides a foundation for sustainable development. At the same time, the analysis highlights both structural



## GEOGRAFIYA

advantages and persistent challenges that shape the trajectory of the sector. In particular, the geographical concentration of enterprises around urban centers creates disproportions in access to processing facilities, while infrastructural limitations and seasonal dependence constrain overall efficiency.

The SWOT analysis has shown that the region's strengths – such as resource potential, export orientation, and growing state support – can serve as powerful drivers of industrial modernization if effectively combined with opportunities for clustering, public-private partnerships, and technological innovation. However, weaknesses related to logistics and uneven territorial distribution, as well as external threats such as climate risks and global market volatility, require targeted policy interventions and long-term strategic planning.

Comparative evaluation with other regions of Uzbekistan suggests that Samarkand is well-positioned to become a leading hub for fruit and vegetable processing, et it lags in technological advancement and logistics infrastructure compared to Tashkent and the Fergana Valley. This implies that modernization policies should focus on strengthening value chains, integrating digital technologies into production and distribution, and enhancing the quality of storage and transport systems. Such measures will significantly increase the competitiveness of the sector both domestically and internationally.

## CONCLUSION

In conclusion, the sustainable development of Samarkand's food industry will depend on a multi-dimensional strategy that combines innovative management, infrastructural improvement, and cluster-based regional organization. By aligning state initiatives with private sector investment and global market trends, the region can not only secure its role in national food security but also expand its presence in international trade. This integrated approach will ensure that the food industry becomes a long-term engine of socio-economic growth for Samarkand Region and contributes to the broader modernization of Uzbekistan's agro-industrial complex.

## REFERENCES

1. Arabov, N., Nasimov, D., Abduramanov, X., Utemuratova, G., & Lutfullo, I. (2024). Addressing the economic impacts of climate change in Uzbekistan: Challenges and strategies. In *E3S Web of Conferences* (Vol. 542, p. 04006). EDP Sciences. <https://doi.org/10.1051/e3sconf/202454204006>
2. Ibragimov, L., Sherxolov, O., Musayev, B., Boboyev, S., Sobirova, M., & Boratova, G. (2024). Industrial development and assessment of its impact in Samarkand region-a GIS mapping-based study. In *E3S Web of Conferences* (Vol. 590, p. 06002). EDP Sciences. <https://doi.org/10.1051/e3sconf/202459006002>
3. Namozov, J., Arabov, N., Aduramanov, X., Nasimov, D., Makhmudova, M., & Ibragimov, L. (2024). Dynamics of transformation and economic resilience in agricultural lands: An anthropogenic perspective. In *E3S Web of Conferences* (Vol. 541, p. 03003). EDP Sciences. <https://doi.org/10.1051/e3sconf/202454103003>
4. State Committee of the Republic of Uzbekistan on Statistics. (2025). Foreign trade: January–April 2025 (press release & tables). Tashkent: UzStat.
5. State Committee of the Republic of Uzbekistan on Statistics. (2024). Foreign economic activity: January–December 2023 (tables). Tashkent: UzStat.
6. State Committee of the Republic of Uzbekistan on Statistics. (2023). Foreign economic activity: January–September 2023 (tables). Tashkent: UzStat.
7. FAO. (2025). FAO Country Profile: Uzbekistan (data, publications, projects). Rome: Food and Agriculture Organization of the United Nations.
8. FAO. (2024). FAOLEX country profile: Uzbekistan — Strategy for ensuring food security and healthy nutrition until 2030 (16 Feb 2024). Rome: FAO.
9. World Bank. (2025). Uzbekistan Country Economic Memorandum (2025). Washington, DC: World Bank.
10. World Bank. (2022). Uzbekistan: Second Agricultural Public Expenditure Review (AgPER). Washington, DC: World Bank.
11. World Bank. (2022). Review of Agriculture Strategy Implementation in 2020–2021 (Uzbekistan). Washington, DC: World Bank.
12. UNDP. (2023). Future of the Green Transition in Uzbekistan (report). Tashkent: UNDP Uzbekistan.
13. Asian Development Bank. (2021). Uzbekistan: Country Operations Business Plan 2021–2023. Manila: ADB.
14. Ministry of Agriculture of the Republic of Uzbekistan. (2023). Horticulture Intensification and Productivity Enhancement — Environmental/sector documentation & briefs (PDFs hosted on agro.uz). Tashkent: MoA.
15. Porter, M. E. (1998). Clusters and the new economics of competition. *Harvard Business Review*, 76(6), 77–90. (Classic theoretical source; print/DB access.)
16. Weber, A. (1929). *Theory of the Location of Industries*. Chicago, IL: University of Chicago Press.
17. Christaller, W. (1966). *Central Places in Southern Germany*. Englewood Cliffs, NJ: Prentice Hall.
18. VVL, A. P., Suhail, M., Lutfullo, I., & Shodiyor, B. (2024). A Comparative Study of Three Supervised Algorithms for Mixed Crop Classification. In *E3S Web of Conferences* (Vol. 590, p. 01004). EDP Sciences. <https://doi.org/10.1051/e3sconf/202459001004>