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STATISTICAL ANALYSIS OF THE MEAT INDUSTRY IN UZBEKISTAN, ENTERPRISE STRUCTURE AND DEVELOPMENT TRENDS (2019–2024)

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Abstract. *The meat industry, as a strategic sector of agriculture and the food industry of the Republic of Uzbekistan, has experienced significant quantitative growth in recent years.*

However, the lack of proportional improvement in quality and safety indicators remains one of the most pressing problems of the sector. This article provides a detailed analysis of the statistical state of Uzbekistan's meat industry, the structure of enterprises, their regional distribution, and major development trends. By 2024, the total volume of meat production in Uzbekistan reached 1,128.4 thousand tons, representing a 34.7% increase compared with 2019.

The analysis also examines the structure of meat production by type, the dynamics of exports and imports, the size and certification status of meat-processing enterprises, regional differences, meat consumption patterns, and food safety indicators. Particular attention is paid to the implementation of ISO and HACCP-based quality and safety management systems. The results indicate that although production volumes and export potential are increasing, the coverage of enterprises by international quality and safety standards remains relatively low, particularly among small and micro enterprises. These conditions demonstrate the need for systematic reforms aimed at improving quality infrastructure, certification, traceability, metrological control, employee training, and food safety management in the meat industry.

Keywords: *meat industry; meat production; food safety; quality management; HACCP; ISO; certification; meat enterprises; export; import; Uzbekistan; traceability; metrological control.*

Introduction

The meat industry is one of the strategically important sectors of Uzbekistan's agriculture and food industry. In recent years, the sector has demonstrated significant quantitative growth.

However, the fact that this growth has not been accompanied by proportional improvements in quality and safety indicators remains one of the most important challenges facing the industry. The population of the Republic of Uzbekistan exceeded 36 million by 2024. At the same time, the acceleration of urbanization has resulted in 51.4% of the population living in urban areas. The stable growth of real household incomes is also contributing to a steady increase in demand for meat products. According to data from the Ministry of Economy of the Republic of Uzbekistan, the food industry accounts for 5.8% of gross domestic product and provides employment for more than 487,000 people. At the same time, meat consumption per capita in the country remains below the minimum level recommended by the World Health Organization, indicating significant potential for expansion of the domestic market. According to official data from the Statistics Agency of the Republic of Uzbekistan, total meat production in the country amounted to 1,128.4 thousand tons in 2024.

This figure was 34.7% higher than in 2019, while the average annual growth rate was 6.1%. The five-year growth trend was generally stable, although growth slowed in 2020 under the influence of the COVID-19 pandemic, when the growth rate fell to 4.1%. From 2021 onward, the industry regained its rapid growth, reaching a record growth rate of 8.4% in 2022.

Several important trends can be identified from Table 1. First, the volume of exports increased 2.1 times between 2019 and 2024, demonstrating the sector's growing orientation toward foreign markets. Second, import volumes have been declining since 2022, indicating a trend toward import substitution through domestic production. Third, the value of exports has also increased in monetary terms, which may be associated with changes in prices and quality or an increase in added value. However, an important concern is that approximately 88–92% of exports consist of products that are not certified as complying with international standards. This indicates that the export potential of the sector is not being fully realized and demonstrates the economic importance of introducing effective quality management systems.

An analysis of production by type of meat reveals the following structure. In 2024, beef accounted for 384.7 thousand tons, or 34.1%, occupying the largest share. Traditionally, beef represents one of the main segments of Uzbekistan's meat industry. Mutton accounted for 312.4 thousand tons, or 27.7%. It is a traditional type of meat in the country and represents an important food source in mountainous and desert regions. Poultry meat accounted for 341.6 thousand tons, or 30.3%, and represented the fastest-growing segment. Between 2019 and 2024, poultry production increased by 67.4%. Pork production amounted to 61.8 thousand tons, representing 5.5%, while other types of meat accounted for 27.9 thousand tons, or 2.4%. The 67.4% growth in poultry production deserves particular attention. This trend can be explained by several factors: poultry meat is relatively inexpensive; its production cycle is short, with broiler production taking approximately 42 days; healthy eating practices are becoming increasingly widespread; and the government has introduced programs supporting the poultry industry. However, poultry production represents a particularly high-risk sector in terms of Campylobacter and Salmonella infections. Therefore, quality and safety requirements in this sector should be especially strict.

According to 2024 data, 1,247 officially registered enterprises operate in the production of meat and meat products in Uzbekistan. An analysis by enterprise size reveals a problematic situation. Small and micro enterprises account for 81.5% of all enterprises, while their combined share of total production is only 25.2%. The situation is even more significant from the perspective of certification. While 38.3% of large enterprises possess ISO/HACCP certification, the corresponding figure is only 0.5% among small enterprises and zero among micro enterprises.

This difference indicates that small enterprises face difficulties in covering certification costs and recruiting qualified specialists.

From a regional perspective, the largest number of meat enterprises is concentrated in Tashkent Region and the city of Tashkent, accounting for 18.3%, followed by Samarkand Region with 14.7%, Fergana Region with 12.4%, and Namangan Region with 9.8%. These regions have high population densities and large consumer markets. In the Republic of Karakalpakstan, Kashkadarya, and Surkhandarya regions, however, quality infrastructure is particularly weak.

Accredited laboratories are almost absent, qualified specialists are in short supply, and metrological services are insufficiently developed. This regional imbalance demonstrates the need for specific measures to ensure food safety throughout the country.

The level of meat consumption among the population is also an important indicator. In 2024, annual meat consumption per capita amounted to 27.3 kg. This figure is significantly lower than the corresponding indicators for Russia (75 kg/year), Kazakhstan (68 kg/year), and the CIS average (52 kg/year). According to the World Health Organization's recommendations cited in the study, the minimum annual meat consumption level is 30–45 kg per person. The main factors contributing to the relatively low level of meat consumption in Uzbekistan include the comparatively low standard of living, national food traditions, and the relatively high prices of meat products. At the same time, meat consumption has been increasing along with the growth of real wages in recent years, indicating potential for further development of the meat industry.

According to the 2023 report of the Ministry of Health of Uzbekistan, 4,312 cases of foodborne diseases were recorded in the country during the year. Of these, 38.7%, or 1,669 cases, were associated with meat and meat products. This indicator increased by 23.4% compared with 2019. Thus, although production volumes are increasing, the level of safety is declining. This paradox can be associated with systemic problems: when quality and safety management systems are not implemented, increasing production volumes may proportionally increase safety risks. The annual direct economic damage is estimated at approximately USD 334,000–668,000, while indirect losses may be several times higher. Several major food safety incidents reported in recent years clearly demonstrate the systemic problems of the sector. In 2022, Listeria monocytogenes was detected in sausage products sold through several supermarket chains in Tashkent. Due to the absence of an effective traceability system, it took more than three weeks to identify the source of the problem. In 2023, an incident of poisoning associated with meat dishes was recorded in a school cafeteria in Samarkand Region, resulting in 47 students being hospitalized. In 2024, Salmonella was detected in frozen meat in Fergana Region as a result of a disruption in the cold chain. The common factors associated with these incidents include the absence of HACCP monitoring, lack of traceability systems, insufficient employee qualifications, and weak metrological control.

There is a significant difference between meat consumption among urban and rural populations. Annual consumption among urban residents is 34.2 kg per person, whereas the corresponding figure among rural residents is 21.8 kg. This difference is associated with household income and accessibility to meat products. By age group, the 25–45 age group represents the largest meat-consuming segment, accounting for 38.4% of annual consumption. In terms of prices, the average price of beef in 2024 was 65,000–75,000 UZS per kilogram, while mutton cost 55,000–65,000 UZS per kilogram and chicken meat cost 28,000–35,000 UZS per kilogram. Price dynamics create an important economic incentive for the implementation of quality and safety management systems. Certified products may command a premium price of up to 15–25%, which can enable enterprises to recover certification costs more rapidly.

An analysis of product structure shows that raw meat consumption accounts for 67.3%, while processed products, including sausages, frankfurters, and canned products, account for 32.7%. The processed meat products sector has an annual growth rate of 12.4%, indicating changes in the structure of consumer demand. In particular, demand for processed food products increased significantly after 2020 as a result of urbanization and the intensification of working life.

Consumers increasingly prefer convenient and ready-to-eat products. This trend represents an additional challenge for quality and safety management because processed meat products undergo more processing stages than raw meat products, and each additional stage may increase the potential risk of contamination.

Conclusion

The analysis of the meat industry in Uzbekistan during 2019–2024 demonstrates that the sector has achieved significant quantitative growth in production and export activity. Total meat production reached 1,128.4 thousand tons in 2024, while exports increased 2.1 times compared with 2019. At the same time, significant differences remain in the implementation of quality and safety management systems among enterprises of different sizes. Small and micro enterprises constitute the majority of meat-producing enterprises, but their level of ISO/HACCP certification remains extremely low. Regional disparities in quality infrastructure, shortages of qualified specialists, insufficient laboratory capacity, weak metrological services, and the limited implementation of traceability and HACCP monitoring represent important challenges for the sector. The growing production of poultry and processed meat products further increases the importance of systematic quality and food safety management because these segments involve specific microbiological and technological risks. Therefore, the development of Uzbekistan's meat industry requires not only further increases in production volumes but also simultaneous improvement of quality and safety management systems, certification, traceability, laboratory infrastructure, metrological control, and professional training. The achievement of the identified 2030 targets requires systematic reforms and coordinated measures throughout the meat production and processing chain.

Table 1. Dynamics of Meat Production and Foreign Trade in Uzbekistan (2019–2024)

Year	Total production (thousand tons)	Growth rate (%)	Exports (thousand tons)	Imports (thousand tons)	Export value (million USD)
2019	837.2	—	12.4	38.7	18.6
2020	871.6	+4.1	10.8	41.2	15.2
2021	934.3	+7.2	14.6	44.9	22.4
2022	1,012.7	+8.4	18.3	47.6	31.7
2023	1,076.1	+6.3	21.7	43.8	38.9
2024	1,128.4	+4.9	26.4	39.2	47.3

Table 2. Classification of Meat Enterprises by Size and Certification Status (2024)

Enterprise type	Number	Share (%)	Production share (%)	ISO/HACCP certification (%)	Main problem

Large (>500 t/year)	47	3.8	41.2	38.3	Lack of experienced specialists
Medium (100–500 t/year)	183	14.7	33.6	8.7	Limited resources
Small (10–100 t/year)	612	49.1	19.8	0.5	Certification is very expensive
Micro (<10 t/year)	405	32.4	5.4	0	Lack of knowledge and resources
TOTAL	1,247	100	100	3.7 (average)	Systematic reforms are required

Table 3. Uzbekistan's Meat Industry: Key Indicators and International Comparative Analysis

Indicator	Uzbekistan (2024)	Kazakhstan	Russia	EU average	USA	Target (2030)
Per capita consumption (kg/year)	27.3	68.0	75.0	52.0	98.0	45.0
ISO/HACCP-certified enterprises (%)	3–4	34	41	94	99.7	≥30
Salmonella detection (%)	5.4	2.1	1.8	0.8	0.5	≤1.0
Calibrated instruments (%)	~38	~72	~68	~97	~99	≥90
Product recall rate (%)	~4.1	~1.8	~2.1	~0.4	~0.3	≤1.0
Export share of production (%)	2.3	12.4	8.7	—	18.2	≥10
Annual employee training (hours)	~2	~12	~14	~24	~32	≥16

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