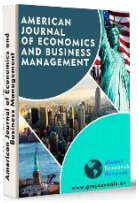

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*Article*

# Characteristics of Dairy Production and Influencerating Factors in The Livestock Industry of Uzbekistan

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**Abstract:** Demographic data show that the population is growing year by year. The increasing demand for food products and the increase in the population indicate that ensuring food security is an urgent issue. The livestock sector, especially the dairy industry, plays an important role in this direction by providing the country's population with products of high nutritional value. This article analyzes the organizational and economic characteristics of milk production in Uzbekistan. Factors affecting productivity, in particular, feed quality, breed selection, technical and technological support, and veterinary services, are studied. The activities of farms, mainly farmer and peasant farms are compared and their strengths, weaknesses, and problems are identified. The results of the study show that creating a high-quality feed base, improving veterinary services, and effectively organizing the supply chain are important factors in increasing milk productivity and expanding its market access.

**Keywords:** Milk, dairy, supply chain, agriculture, farming, food safety, animal husbandry, veterinary, agriculture

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## 1. Introduction

As one of the most important sectors in the world, agriculture not only ensures the population's access to food products but also fully supplies industry with raw materials, serving as a key source for job creation and income generation. In 2023, 2,145 projects worth 7.4 trillion soums were launched in the livestock sector, creating 170,000 jobs [1]. At the same time, by combining agriculture and entrepreneurship, it can significantly improve the living standards of the population living in these areas by creating new jobs in rural areas [2]. Frank Rijsberman, head of the Advisory Group on International Agricultural Research, said that demand for food products is increasing year by year [3]. In one of his speeches, he stated that the world population is expected to reach nine billion by 2050, ... and that by 2050, 70% more food should be produced than now. Also, in one of the articles published on the official website of the Senate of the Oliy Majlis of the Republic of Uzbekistan, it was reported that the demand for food products is increasing as a result of the growing population [4]. Therefore, countries, taking into account their demographic, socio-economic, and environmental factors, strive to provide the population with high-quality and safe food products. In this regard, in accordance with the Decree of the President of the Republic of Uzbekistan "On measures to further ensure the country's food security" dated January 16, 2018, priority tasks have been set to ensure food security, fill the market with high-quality, safe, and affordable products, strengthen

the purchasing power of the population, liberalize foreign economic activity, and develop a healthy competitive environment [5].

Agriculture is at the forefront of ensuring food security. In this regard, the President of the Republic of Uzbekistan Sh.M. Mirziyoyev, in his speech at a joint session of the chambers of the Oliy Majlis, noted that "The issues of reforming agriculture and ensuring food security undoubtedly remain one of the most important tasks for us. First of all, great attention will be paid to the consistent development of the agro-industrial complex and its locomotive, that is, the driving force, diversified farms" [6].

**Literature Review.** Studies on dairy production show that the dairy sector plays an important role not only in ensuring food security, but also in increasing the income of the rural population. A study by Tew and Barbieri emphasized that product diversification on farms, including dairy production, can ensure sustainable economic activity in rural areas. According to FAO, the demand for dairy products in developing countries is increasing year by year, which indicates the need to develop dairy farming as a strategically important sector of livestock production. Shrivastava et al. noted that climatic conditions, feed quality and genetic factors directly affect milk productivity. Nabuuma et al. link the production and consumption of dairy products to the level of nutrition and emphasize the importance of agricultural diversification in this direction for smallholder farmers. On the other hand, Puech & Stark showed that dairy farming can increase productivity for farmers when used in combination with crops such as wheat. The existing scientific literature confirms that dairy farming plays a significant role in creating sustainable agriculture and ensuring food security.

## 2. Materials and Methods

This study used a comprehensive approach to study the economic and organizational characteristics of the dairy production process in Uzbekistan. The main objective of the study was to identify factors affecting milk productivity, analyze the differences between farm and peasant farms, and assess the role of the dairy sector in food security. The following scientific and methodological approaches were used in the analysis: Descriptive analysis method — to determine the current situation, study the volume and structural structure of milk production based on statistical indicators. Comparative approach — to compare production capabilities, financial resources, market participation, and technological approaches between farms and peasant farms. Analytical method — to study the impact of factors on milk productivity using statistical analysis based on tables and graphs. Study of regulatory and legal sources — based on decrees of the President of the Republic of Uzbekistan, government decisions, statistical data, and FAO recommendations. The data was collected on the basis of open statistical reports, scientific publications, and practical conference materials on the agricultural sector of the Republic of Uzbekistan for the period 2020–2023. At the same time, the author assessed the activities of farmers and farms in the field based on monitoring and analyzed expert opinions for qualitative analysis.

## 3. Result

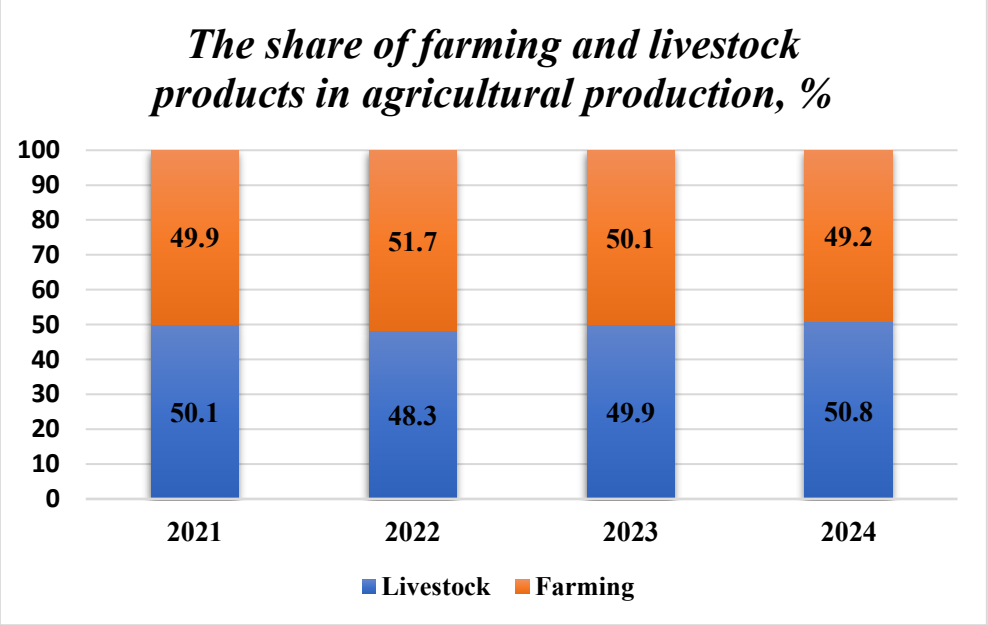
At a time when the global food problem is becoming more urgent, given the direct connection between food supply and national security and the fact that livestock products occupy one of the main places in the composition of food products, special importance should be given to the livestock sector [7]. Animal husbandry occupies an important place in the economy of agrarian and agrarian-industrial countries.

The development of animal husbandry in Uzbekistan dates back to a long history, namely the Neolithic period. Archaeological finds confirm that in the 4th-3rd millennium BC, the population of the Margilan and Fergana valleys raised black cattle, goats, camels and sheep. In the Middle Ages, during the reign of Amir Temur, animal husbandry developed further and took an important place in the economy [8][9]. Today, livestock breeding is one of the main sectors of agriculture, playing an important role in the country's food security and economic stability. As of the end of 2023, the share of

agriculture, forestry and fisheries in the gross domestic product (GDP) was 24.3 percent. The share of livestock products in agricultural production was 49.9.

In Table 1. illustrates as can be seen from the graphic data above, livestock products account for almost half of the total agricultural production. This indicates that livestock farming makes a significant contribution to the country's food supply. Therefore, special attention is paid to the livestock sector, and various measures are being taken to expand and develop it.

Table 1. Share of agricultural and livestock products in agricultural production ( %).




In particular, on February 8, 2022, the Resolution of the President of the Republic of Uzbekistan "On approval of the program for the development of the livestock sector and its branches in the Republic of Uzbekistan for 2022-2026" was adopted [10]. According to it, the goal is to ensure food security by increasing the production of livestock products in the country, widely introduce modern production methods, thereby creating an added value chain, develop cooperative relations, provide state support for the livestock sector and its branches, as well as organize the effective use of modern information and communication technologies and scientific achievements in this area.

In Table 2. illustrates livestock farming, milk productivity is affected by a number of factors, both directly and indirectly, with or without human intervention.

2- Table.

**Positive and negative factors affecting milk productivity in livestock farming**

| *Positive factors* | *Negative factors* |
|---|---|
| -breed of cows | - Poor quality and shortage of feed |
| - feed quality and diet | - Genetics and wrong breed selection |
| - veterinary services and care | - Unsuitable climate and weather |
| - cow housing conditions | - Diseases and infections |
| - genetic selection and artificial insemination | - Improper care |
| - advanced farming practices | - Stressful conditions |
| - milking technology | - Lack of sufficient knowledge of the farmer or dehkan on livestock |
| - stress-free environment for cows | |
| - adaptation to climate and temperature conditions | |

Source: Compiled based on the author's research

The breed of a cow significantly affects its productivity [11]. Selecting breeds with high productivity will help increase milk production. Based on general zootechnical data, it is noted that productivity indicators vary depending on the breed [12]. The materials of

the Republican Scientific and Practical Conference on "Prospects for the Development of Veterinary Medicine and Animal Husbandry: Modern Practice and Innovative Technologies", organized at the Samarkand Institute of Veterinary Medicine in May 2020, also provided information that the productivity indicators of cows directly depend on their breed [13]. In order to improve the breed of cattle in our country, 135 thousand heads of cattle were imported from foreign countries in 2023 [14].

Achieving productivity in livestock farming largely depends on the strength of feed reserves, and it is advisable to use them as catch crops in the fall, winter, and spring seasons on arable land, and during periods when there are no crops [15]. Livestock feed shortages have arisen as the area under fodder crops has declined by more than 70% since 1991. This problem has arisen as land has been allocated to other crops, mainly cotton and grain [16]. Despite this, work is underway to supply feed to livestock. In 2023, 431 thousand ha (+25 thousand ha compared to 2022) of main crops, 90.2 thousand ha of intermediate crops, and 221.7 thousand ha of areas freed from grain were sown with secondary crops.

As is known, the Decree of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev "On the Strategy of Actions for the Further Development of the Republic of Uzbekistan" also sets the task of modernization and rapid development of agriculture, and according to this decree, attention is paid to improving veterinary services and strengthening their material and technical base in the development of the livestock sector [17]. Veterinary services worth 200 billion soums have been provided within the framework of projects with the participation of international financial institutions to develop livestock farming by 2023 [18].

Another factor that increases milk productivity is the use of artificial insemination [19]. By 2023, the number of breeding farms was increased to 1,604, and the number of enterprises producing purebred bull semen to 3. Since the beginning of the year, 2.4 million cows have been artificially inseminated, and the number of improved cattle has increased to 72%. In general, $240 million has been attracted to develop the livestock sector within the framework of projects with the participation of international financial institutions.

In Table 3. illustrates dairy production in farms and dehkan farms has distinctive characteristics that distinguish it from other crops. They differ from other agricultural products.

3- Table.

Dairy production in farms and dehkan farms

| | | **By production capacity** | **Financial and market access opportunities** | |
|---|---|---|---|---|
| Farms | Positive | -Large-scale production<br>-Availability of high-quality and productive breeds<br>-Access to modern technologies<br>-Easy to organize a feed base<br>-Access to modern technologies<br>-Good feeding system<br>-Access to veterinary services<br>-Access to fodder crops | -There is always a demand for dairy products<br>- High market access<br>- Availability of state subsidies<br>- Possibility of attracting loans and investments<br>- Possibility of concluding contracts with industrial enterprises<br>- Possibility of exporting milk and dairy products | |

| | | | | |
|---|---|---|---|---|
| | Negative | -Requires large investments<br>-Lack of qualified specialists<br>-Seasonal impact<br>-Requirement of special care for a purebred cow<br>-Requires special transport for storing and transporting milk<br>-Product processing infrastructure is underdeveloped | - Price volatility in the market<br>-Existence of competition for medium and small farmers<br>-Problem of long-term storage of milk<br>-High operating costs<br>-No guaranteed demand from buyers | |
| Dehkan farms | **Positive** | -Long-term experience<br>-Feeding is organized in a natural way<br>-High milk quality (without additives)<br>-Cow breeds adapted to local climatic conditions<br>-Concern for food safetya | - Low transportation costs when entering local markets<br>-Government support<br>-Potential for rapid sales through small-scale production<br>-Entrepreneurship opportunities<br>-Low initial investment requirements | |
| | **Negative** | - Limited production capacity<br>-Lack of feed<br>-Limited modernization and technological development<br>-Lack of specialized milking equipment | -No permanent cooperation with large buyers<br>-Limited marketing strategy and advertising opportunities<br>-High losses due to insufficient cooling and storage facilities<br>-Seasonal price fluctuations | |

Source: Compiled based on the author's research

Dairy production in farms, peasant farms and agricultural enterprises can be quite difficult. If the conditions created for cows and their feed do not meet the requirements, it is very difficult to obtain the desired amount of milk from farms. The rapid deterioration of the quality of dairy products, the inability to transport them for a long time, or the need for separate transport for transportation, fluctuations in their prices on the market, and seasonal production make it much more difficult to operate in the dairy sector. In cases where the conditions for transporting the product are not properly provided and the distance of transportation is increasing, its quality is negatively affected [20].

Milk- is a liquid rich in proteins, fats, minerals, carbohydrates, and other vitamins produced by the mammary glands of healthy mammals [21]. Milk is a good breeding ground for microorganisms. Therefore, its storage conditions and cleanliness are important. It is recommended to clean and cool the milk no later than two hours after milking, as the temperature of the milk should not exceed 10℃ [22]. Milk is made up of an average of 87.5 percent water [23].

In Table 4. illustrates milking is associated with processes such as milking cows, cooling milk, standardization, pasteurization. There is a risk of milk contamination in these processes, the reason for which is non-compliance with simple requirements. Sources of milk contamination can be manure, dust, dirty water, unwashed hands of the milker, etc. 1 gram of manure contains 400 million bacteria, which multiply rapidly when they get into milk. Therefore, it is necessary to pay attention to the cleanliness of milk starting from the milking process. In order to produce quality dairy products, it is necessary to be careful not only during milking, but also during the entire transportation process. In this case, attention is paid to the integrity, cleanliness, correct filling of milk containers, and the presence of a rubber layer under the lids [24].

4 - table.

The difference between milk and other agricultural products

| | Milk | Other agricultural products |
|---|---|---|
| **Differences in production process** | - **live source product** - Milk comes only from living animals. Its production depends on constant care and husbandry conditions. | - Crop production is seasonal, dependent on soil and climatic conditions. |
| | - **low seasonality** - Milk can be produced year-round | - Plant products are seasonal and their harvest is carried out at a specific time. |
| | - **process continuity** - Milk must be collected from animals regularly (milked). | - other agricultural products are harvested once. (Meat is harvested once when an animal is slaughtered) |
| **Economic differences** | - **high production costs**- Breeding requires significant costs for animal care, feed, veterinary services, and production equipment. | - Plant products are usually limited to a single growing cycle. |
| | **The dairy market is highly competitive and price volatile**- its price varies seasonally and depends on market demand | - Grain and vegetable markets are relatively stable. |
| | **- State support–** It is relatively easy to obtain subsidies and soft loans for dairy farms | - Crop production is often managed by the private sector. |
| **Storage and delivery to market differences** | **- Milk is a very perishable product-** It should be stored in cold conditions (below 4℃) and processed in a short time. | - Meat and other products can be stored for a short period of time. |
| | **- requires processing-** requires pasteurization, sterilization, or piped cooling | - other agricultural products can be sold immediately after production |
| | **- supply chain continuity -** The product must be delivered to the market (sold) quickly. | - Grains and vegetables (with some exceptions) - can be stored in the warehouse for several months. |
| **Structural and biological differences** | **- High nutritional value-** Milk contains proteins, fats, carbohydrates, vitamins and minerals. | - Grain products (meat, vegetables) are usually only rich in certain nutrients. |
| | **- high water content in natural composition –** Milk is 87-88% water, which places strict requirements on its storage conditions. | - Vegetable and meat products can be stored for longer periods of time due to their low water content. |

Source: Compiled based on the author's research

## 4. Discussion

From the information provided above about the properties of milk, we can see that dairy products require a high level of care and attention[25]. Therefore, farms engaged in the dairy sector of animal husbandry try to be equipped with equipment and technologies that control the quality of milk and its primary processing. The rapid sale of dairy products after their receipt also requires a special approach. Because if there is no clear buyer (consumer) for milk, the entire product may be at risk. Therefore, farms engaged in the sale of milk must clearly define their sales channels[26]. In other words, they must properly organize the supply chain of milk and dairy products. A properly organized supply chain provides consumers with timely and high-quality milk and dairy products.

## 5. Conclusion

The dairy sector in Uzbekistan's agriculture plays an important role in ensuring food security, meeting the population's need for quality products, and expanding employment and income sources in rural areas. The results of the study showed that the factors that directly affect milk productivity are closely related to the quality of the cow breed, the availability of feed, veterinary services, technological equipment, and the level of

knowledge of farmers. Although farms have large-scale production capabilities, their activities face significant investment, logistics, and marketing problems. Dehkan farms, on the other hand, have the opportunity to obtain quality milk through small-scale, but flexible production methods and natural feeding methods. However, their capabilities for modernization and the introduction of innovative technologies are limited. The following factors are crucial for the sustainable development of dairy production and increasing its competitiveness in the market: strengthening veterinary services, systematic breeding work, expanding fodder crop areas, introducing refrigeration, processing and storage technologies, effectively organizing the supply chain and creating sustainable sales channels. This study proves that modernizing the dairy sector in Uzbekistan can serve not only economic stability, but also comprehensive food security.

## REFERENCES


[1] Ministry of Agriculture of the Republic of Uzbekistan, Annual Report on Agriculture of Uzbekistan, Tashkent, 2023.

[2] S. V. Mamajonova, "The role of entrepreneurial structures in improving the living standards of the rural population," Economic Development and Analysis, Jul. 2024.

[3] Voice of America, "The world may face food shortages," May 31, 2012. [Online]. Available: https://www.amerikaovozi.com/a/food-security-agriculture-155888575/1209180.html

[4] Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan, "Food security and nutritional quality," Sep. 8, 2023. [Online]. Available: https://parliament.gov.uz/articles

[5] President of the Republic of Uzbekistan, "Decree No. PF-5303 on Measures to Further Ensure Food Security in the Republic," Jan. 16, 2018.

[6] Sh. M. Mirziyoyev, "We will build a free and prosperous democratic Uzbekistan together with our courageous and noble people," Xalq So'zi, Dec. 15, 2016.

[7] S. S. Abdullaeva, "Current issues in the development of environmentally friendly milk production systems," Economy and Innovative Technologies: Scientific Electronic Journal, no. 6, Nov.–Dec. 2015.

[8] Review.uz, "The economic foundation of Amir Temur's empire," May 29, 2022. [Online]. Available: https://review.uz/oz/post/amir-temur-saltanatining-iqtisodiy-poydevori

[9] Xabar.uz, "Women among Amir Temur's warriors," Apr. 9, 2018. [Online]. Available: https://xabar.uz/post/amir-temur-lashkarlari-orasida-ayollar

[10] President of the Republic of Uzbekistan, "Decree on the Approval of the Program for the Development of the Livestock Sector and Its Branches in the Republic of Uzbekistan for 2022–2026," Feb. 8, 2022.

[11] F. Juraev, Organization of Production in Agricultural Enterprises. Tashkent: Istiqlol, 2004.

[12] T. Kh. Ikromov, General Zootechnics. Tashkent: Sharq Publishing and Printing Joint-Stock Company, 2002.

[13] Samarkand Institute of Veterinary Medicine, Prospects for the Development of Veterinary Medicine and Animal Husbandry: Modern Practice and Innovative Technologies, Proceedings of the Republican Scientific-Practical Conference, Part I, Samarkand, May 21–22, 2020.

[14] Ministry of Agriculture of the Republic of Uzbekistan, Annual Report on Agriculture of Uzbekistan, Tashkent, 2023.

[15] Research Institute of Livestock and Poultry, Practical Guide on the Development of Cattle Breeding in Farms, Households, and Peasant Holdings. Tashkent, 2019.

[16] Analytical Recommendation: Sustainable Development of Livestock in Uzbekistan: Current Situation and Recommendations, no. 1, 2008.

[17] President of the Republic of Uzbekistan, "Decree No. PF-4947 on the Action Strategy for the Further Development of the Republic of Uzbekistan," Feb. 7, 2017.

[18] Ministry of Agriculture of the Republic of Uzbekistan, Annual Report on Agriculture of Uzbekistan, Tashkent, 2023.

[19] Analytical Recommendation: Sustainable Development of Livestock in Uzbekistan: Current Situation and Recommendations, no. 1, 2008.

[20] M. Al-Dairi, P. B. Pathare, and R. Al-Yahyai, "Effect of postharvest transport and storage on color and firmness quality of tomato," Horticulturae, vol. 7, no. 7, 163, 2021. [Online]. Available: https://doi.org/10.3390/horticulturae7070163

[21] Persianovsky, Milk and Dairy Products Technology: A Textbook, 2018.
[22] Z. Tulaganova, Processing of Milk and Dairy Products [in Uzbek], 2021.
[23] Sh. A. Normatova and Sh. S. Baxritdinov, Problems of Quality and Safety of Milk and Dairy Products, Tashkent Medical Academy, Fergana Branch, 2016.
[24] Z. Tulaganova, Preparation of Milk and Dairy Products [in Uzbek], 2021.
[25] T. H. Ikromov, Fundamentals of Animal Husbandry. Tashkent: Sharq Publishing and Printing Joint-Stock Company, 2001
[26] Livestock in Uzbekistan: Current Status, Challenges, and Development Prospects, An Analytical Review from the Perspective of Agrarian Sector Development. Nasaf Publishing, 2010.