

MUHANDISLIK

& IQTISODIYOT

4-MAXSUS SON

*Ijtimoiy-iqtisodiy, innovatsion texnik,
fan va ta'limga oid ilmiy-amaliy jurnal*

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- 05.01.01 – Muhandislik geometriyasi va kompyuter grafikasi. Audio va video texnologiyalari
- 05.01.02 – Tizimli tahlil, boshqaruv va axborotni qayta ishlash
- 05.01.03 – Informatikaning nazariy asoslari
- 05.01.04 – Hisoblash mashinalari, majmualari va kompyuter tarmoqlarining matematik va dasturiy ta'minoti
- 05.01.05 – Axborotlarni himoyalash usullari va tizimlari. Axborot xavfsizligi
- 05.01.06 – Hisoblash texnikasi va boshqaruv tizimlarining elementlari va qurilmalari
- 05.01.07 – Matematik modellash
- 05.01.11 – Raqamli texnologiyalar va sun'iy intellekt
- 05.02.00 – Mashinasozlik va mashinashunoslik
- 05.02.08 – Yer usti majmualari va uchish apparatlari
- 05.03.02 – Metrologiya va metrologiya ta'minoti
- 05.04.01 – Telekommunikatsiya va kompyuter tizimlari, telekommunikatsiya tarmoqlari va qurilmalari. Axborotlarni taqsimlash
- 05.05.03 – Yorug'lik texnikasi. Maxsus yoritish texnologiyasi
- 05.05.05 – Issiqlik texnikasining nazariy asoslari
- 05.05.06 – Qayta tiklanadigan energiya turlari asosidagi energiya qurilmalari
- 05.06.01 – To'qimachilik va yengil sanoat ishlab chiqarishlari materialshunosligi
- 05.08.03 – Temir yo'l transportini ishlatish
- 05.08.06 – "G'ildirakli va gusenisali mashinalar va ularni ishlatish" (texnika fanlari)
- 05.09.01 – Qurilish konstruksiyalari, bino va inshootlar
- 05.09.04 – Suv ta'minoti. Kanalizatsiya. Suv havzalarini muhofazalovchi qurilish tizimlari
- 10.00.06 – Qiyosiy adabiyotshunoslik, chog'ishtirma tilshunoslik va tarjimashunoslik
- 10.00.04 – Yevropa, Amerika va Avstraliya xalqlari tili va adabiyoti
- 08.00.01 – Iqtisodiyot nazariyasi
- 08.00.02 – Makroiqtisodiyot
- 08.00.03 – Sanoat iqtisodiyoti
- 08.00.04 – Qishloq xo'jaligi iqtisodiyoti
- 08.00.05 – Xizmat ko'rsatish tarmoqlari iqtisodiyoti
- 08.00.06 – Ekonometrika va statistika
- 08.00.07 – Moliya, pul muomalasi va kredit
- 08.00.08 – Buxgalteriya hisobi, iqtisodiy tahlil va audit
- 08.00.09 – Jahon iqtisodiyoti
- 08.00.10 – Demografiya. Mehnat iqtisodiyoti
- 08.00.11 – Marketing
- 08.00.12 – Mintaqaviy iqtisodiyot
- 08.00.13 – Menejment
- 08.00.14 – Iqtisodiyotda axborot tizimlari va texnologiyalari
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- 08.00.16 – Raqamli iqtisodiyot va xalqaro raqamli integratsiya
- 08.00.17 – Turizm va mehmonxona faoliyati

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OPTIMIZATION OF THE FOOD SUPPLY AND DELIVERY SYSTEM IN TASHKENT REGION

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Abstract. This thesis analyzes the current state of the food supply and delivery system in Tashkent Region, identifies areas requiring further improvement, and examines ways to address them. It substantiates the need to optimize the system through the development of logistics infrastructure, digitalization, and the implementation of a cold-chain system.

Keywords: food products, logistics, supply and delivery, optimization, digitalization, Tashkent Region.

Annotatsiya. Ushbu tezisda Toshkent viloyatida oziq-ovqat mahsulotlarini ta'minlash va yetkazib berish tizimining hozirgi holati tahlil qilinib, yanada takomillashtirishni talab etadigan yo'nalishlar aniqlangan hamda ularni rivojlantirish yo'llari ko'rib chiqilgan. Logistika infratuzilmasini rivojlantirish, raqamlashtirish va sovuq zanjir tizimini joriy etish orqali tizimni optimallashtirish zarurati asoslangan.

Kalit so'zlar: oziq-ovqat mahsulotlari, logistika, ta'minot va yetkazib berish, optimallashtirish, raqamlashtirish, Toshkent viloyati.

Аннотация. В данном тезисе проанализировано современное состояние системы снабжения и доставки продовольственных товаров в Ташкентской области, определены направления, требующие дальнейшего совершенствования, и рассмотрены пути их развития. Обоснована необходимость оптимизации системы посредством развития логистической инфраструктуры, цифровизации и внедрения системы холодной цепи.

Ключевые слова: продовольственные товары, логистика, снабжение и доставка, оптимизация, цифровизация, Ташкентская область.

In recent years, ensuring food security and the uninterrupted supply of high-quality products to the population have become pressing issues in the Republic of Uzbekistan. Population growth, urbanization, and the modernization of logistics infrastructure require a systematic approach in this area.

As one of the economically active regions of the Republic, Tashkent Region plays an important role in optimizing the food supply chain. The timely and high-quality delivery of food products is an important factor in ensuring food security for the population. This issue remains particularly relevant in Tashkent Region, where large population centers and industrial hubs are located. Climatic factors and global events such as the pandemic have highlighted areas for further improvement in the food supply and delivery system. Therefore, it is necessary to conduct a comprehensive analysis of the system and develop measures for its optimization.

In Tashkent Region, food products are supplied mainly by local farms, large agricultural clusters, cooperatives, and, in some cases, from other regions. Imported products also account for a certain share. The region has a certain level of infrastructure for the production, storage, and delivery of food products to consumers. Several large logistics centers, refrigerated warehouses, and motor transport facilities are operating in the region. However, several areas require further improvement:

- opportunities to improve delivery times;
- the need for further improvement of road infrastructure;
- insufficient use of information technologies;
- opportunities to improve the efficiency of resource allocation.

Supply Chain

The supply process is mainly carried out according to the following chain:

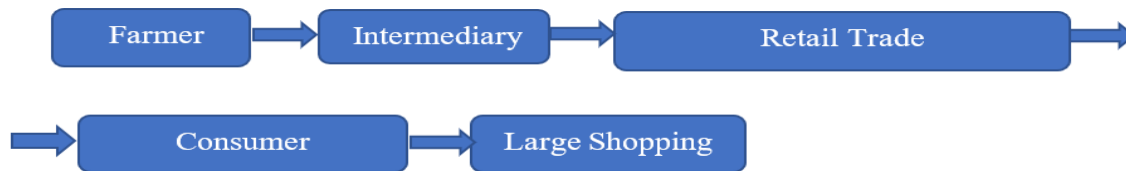


Figure 1. Food Supply Chain in Tashkent Region¹

In this chain, the presence of multiple intermediaries, together with limitations in transportation and storage conditions, may contribute to higher product prices and affect product quality.

Logistics Infrastructure

Although infrastructure is relatively well developed in some districts of Tashkent Region, such as Qibray and Zangiota, direct delivery of products to consumers in some rural areas has opportunities for further improvement. Additional transport capacity could support farmers in delivering their products to markets more efficiently.

Key Areas for Further Improvement

Further development of the cold-chain system;
Improvement of product storage conditions;
Reduction of delivery times, product losses, and logistics costs;
Modernization of logistics technologies;
Strengthening direct links between farmers and consumers.

Ways to Optimize the System: Digitalization

Digital platforms can enable orders to be placed quickly and accurately and make it possible to track product movement in real time. For example, mobile applications and online marketplaces can strengthen the direct farmer–buyer relationship.

Establishment of Logistics Centers

Modern logistics centers equipped with storage and distribution warehouses and specialized transport vehicles should be established in major district centers of the region. This would reduce product waste and ensure faster delivery.

Implementation of a Cold-Chain System

Cold-storage facilities and refrigerated transport vehicles are particularly important for milk, meat, fish, and other perishable products. They help preserve product quality and safety.

Development of Cooperation

Establishing cooperative relationships among farmers and jointly organizing product collection, storage, and distribution can reduce costs and increase efficiency.

Key Directions for Optimization

1. Digitalization: The introduction of ERP and SCM systems into the logistics system will enable real-time monitoring of product movement.
2. Transport Logistics: Route optimization and the use of GPS and IoT devices can reduce travel and time-related costs.
3. Cooperation with Local Producers: Direct contracts with farms in the region can reduce the number of intermediaries.
4. Improvement of Warehouse Infrastructure: Increasing the number of refrigerated warehouses will help preserve product quality.

Innovative Approaches

The application of AI (artificial intelligence) and Big Data technologies makes it possible to analyze and forecast supply and demand and determine optimal inventory levels. For example, AI can be used to forecast seasonal demand and ensure that the necessary products are prepared in advance in warehouses.

Recommendations Based on International Experience

In developed countries around the world, particularly the Netherlands, Japan, and South Korea, food supply systems are highly automated and digitalized. The following practices can be learned from their experience:

Logistics monitoring based on GPS and AI;
Delivery of products by drones (for rural areas);
Smart Warehouse systems;
Forecasting and planning based on consumer data.

The analysis of the food supply and delivery system in Tashkent Region identifies several areas with

¹ Source: compiled by the author.



potential for further improvement. The following measures are important for addressing them:

1. Modernization of logistics infrastructure;
2. Expansion of the cold-chain system;
3. Establishment of a direct communication system with farmers;
4. Introduction of digital technologies;
5. Strengthening cooperation.

These measures will not only ensure food security but also increase economic efficiency and social stability.

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