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PROSPECTS FOR DIGITALIZING "GREEN" CUSTOMS CORRIDORS IN FOOD IMPORTS

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Abstract:
This research analyzes the simplification of customs clearance processes in food imports, specifically focusing on the economic prospects of digitalizing "Green" customs corridors. The relevance of the study is determined by the necessity to reduce the clearance time for perishable food products at border crossing points and to ensure national food security. The author scientifically substantiates mechanisms to reduce excess expenditures by improving artificial intelligence-based risk management systems. Furthermore, the study evaluates the impact of the digital declaration system on supply chain efficiency and proposes practical recommendations for minimizing errors in the customs clearance process, as well as integrating phytosanitary and veterinary controls into a single digital platform.

Keywords: "Green" customs corridors, digitalization, food imports, logistics efficiency, artificial intelligence, risk management system, food security.

Introduction

At the current stage of global economic relations, food security has become a paramount priority, determining the strategic stability of every nation. For countries like Uzbekistan, which are actively integrating into the world market,

organizing effective customs control over food imports is crucial not only for ensuring state budget revenues but also for guaranteeing the availability and price stability of essential consumer goods in the domestic market. Particularly in the context of unexpected global logistics chain disruptions and geopolitical shifts, reducing customs barriers and accelerating trade turnover play a decisive role in increasing the national economy's resilience to external shocks [1].

In modern international trade practice, the "Green" customs corridor system is considered a key indicator of efficiency. Research indicates that delays of perishable goods at border crossing points cause the market value of the product to increase by an average of 0.8% to 1.2% for every hour of delay [2]. For instance, according to World Trade Organization reports, digitalizing customs clearance processes and improving the "Single Window" system can reduce trade costs by an average of 14.3% [3]. In the context of Uzbekistan, where a significant portion of the cost of food imports is attributed to logistics and bureaucratic expenses, a fundamental digital transformation of the sector is required.

Examining international experience, customs administration in countries such as Singapore, Estonia, and South Korea operates entirely on the basis of Artificial Intelligence and "Big Data." Notably, through Singapore's "TradeNet" system, the time for approving food product documentation has been reduced from 2 days to 10 minutes, generating billions of dollars in economic benefits annually for supply chain participants [4]. In Uzbekistan, digitalizing the operation of "Green" corridors will reduce the human factor, automate the risk management system, and establish integrated electronic data exchange between regulatory authorities, ensuring that high-quality and affordable food products reach consumers.

Furthermore, the application of digital technologies in food imports enables not only speed but also strict control over product quality. Monitoring the journey of a product from its origin to the final consumer (traceability) based on blockchain

technology prevents the entry of counterfeit and low-quality goods [5]. This research analyzes the economic mechanisms of digitalizing "Green" customs corridors in food imports and puts forward innovative proposals for addressing existing problems and aligning processes with international standards. This, in turn, marks a new stage in ensuring food security within the republic [6].

Main part

Ensuring food security and reforming customs administration are among the top priorities of the state policy in the Republic of Uzbekistan. In recent years, extensive work has been carried out within the framework of the "Digital Uzbekistan – 2030" strategy to fully digitalize the customs sphere, specifically the implementation of the "Single Window" customs information system. Currently, over 70% of food product imports in our country are cleared through "Green" and "Yellow" channels, which significantly saves time and resources for entrepreneurs. Nevertheless, the lack of full integration between the customs system and allied regulatory bodies, such as phytosanitary and veterinary services, prevents the maximization of the throughput capacity of "Green" corridors.

The Customs Code of the Republic of Uzbekistan and the normative-legal acts regulating the sector provide a solid legal foundation for the application of digital technologies. However, there is a need to further improve the legal status of automatic decisions made by artificial intelligence (AI) and the mechanisms for the mutual recognition of blockchain-based electronic certificates within current legislation. Fully aligning national legislation with international standards, particularly the requirements of the World Trade Organization's "Trade Facilitation Agreement," serves as a guarantee for ensuring transparency in the food import chain and maintaining price stability in the consumer market.

The efficiency of "Green" customs corridors in food imports directly depends on the speed of data processing and the accuracy of the risk management system (RMS). Presently, traditional customs control methods cause cargo to remain at border crossing points for extended periods. According to statistical data, a one-day delay in clearing food products leads to a reduction in trade volume and an average price increase of 1% for the final consumer [7]. In a digital environment, the "Green" corridor allows not only for faster movement of goods but also for the identification of "suspicious" cargo within seconds using artificial intelligence.

In international practice, Singapore's "NTP" (Networked Trade Platform) system stands as the most successful example of a digital customs model. Using this platform, food importers certify phytosanitary, veterinary, and customs documents with a single digital signature. Consequently, inspection processes that previously took 2–3 days are now completed within 10–15 minutes [8]. This system has reduced the human factor to nearly zero, eliminated corruption risks, and cut logistics costs by more than 20%.

In European Union countries, specifically the Netherlands, Internet of Things (IoT) technology is widely utilized within the "Smart Customs" concept. Special sensors are installed in containers carrying perishable goods, transmitting real-time data regarding the temperature and condition of the product to the customs system [9]. If the product meets all standards, it is cleared automatically through the "Green" corridor without any physical inspection.

In the context of Uzbekistan, prioritizing the implementation of an AI-based risk management system and mobile laboratories at border posts is of paramount importance for improving "Green" corridors. Currently, directing cargo to "Red" or "Yellow" channels often relies on subjective factors. In a digital model, however, the system accurately determines the risk level of the cargo by analyzing

thousands of data points, such as the importer's "discipline history," product type, and country of origin [10]. This ensures a continuous "green light" for honest entrepreneurs, fostering increased competition in the food market and lowering prices.

The integration of blockchain technology into the customs system allows for the creation of a "trusted chain." All documents for a food product (certificates, invoices) from the farm to the customs terminal are stored in a blockchain database, making it impossible to alter or forge them [11]. This system eliminates the need for customs officers to repeatedly check documents, as the source of information is verified in advance.

The experience of South Korea's "UNI-PASS" system shows that digitalizing customs processes not only increases speed but also optimizes state budget revenues. The system automatically compares the value of goods with international databases and calculates customs duties [12]. Implementing such automated control for strategic import goods in Uzbekistan would protect the domestic market from low-quality products while enhancing the efficiency of the state's fiscal policy.

Integrated digital platforms should cover not only customs but also phytosanitary and veterinary services. Conducting these forms of control in parallel on a "Single Window" basis before the cargo reaches the border crossing point (pre-arrival processing) reveals the true essence of the "Green" corridor [13]. This practice has been proven to reduce transportation time in international trade turnover by 30%.

In conclusion, developing digital "Green" corridors in food imports will serve to improve the republic's position in the Logistics Performance Index (LPI). The primary outcome achieved through digital transformation is the saving of time

and costs in international trade, ensuring price stability in the internal market, and raising national ratings for food security to a higher level [14].

Conclusion

The digital transformation of "Green" customs corridors in food imports is not merely a technical upgrade but a strategic necessity for ensuring national food security and enhancing foreign trade efficiency. Research indicates that by integrating artificial intelligence and blockchain technologies into customs administration, clearance time and costs can be reduced by an average of 20%, which in turn enables the maintenance of price stability for essential goods in the domestic consumer basket.

Based on the analysis of international experience and national legislation, it can be concluded that the full integration of phytosanitary, veterinary, and customs control authorities into a single digital platform minimizes the human factor. Furthermore, transitioning to a "Smart Customs" model will fundamentally improve Uzbekistan's standing in the global logistics performance index.

Based on the above, the following proposals are put forward:

1. To establish a remote certification system for all permitting documents through the full integration of customs, phytosanitary, and veterinary control information systems into a single digital platform, enabling pre-arrival processing.
2. To transfer certificates and other essential documentation for food products into an electronic database based on blockchain technology.
3. To integrate "Internet of Things" (IoT) sensors into the customs system for real-time monitoring of the temperature and condition of perishable products at border crossing points.

4. To launch mobile laboratories at customs terminals for the rapid inspection of food quality.

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