

GREEN LOGISTICS IN THE INTERNATIONAL TRADE MANAGEMENT SYSTEM: CHALLENGES AND OPPORTUNITIES FOR UKRAINE'S INTEGRATION INTO GLOBAL MARKETS

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Introduction. The modern system of international economic activity management is undergoing profound transformation driven by intensifying global competition, stricter environmental requirements, and the need to adapt to new models of international trade. Under these conditions, green approaches to logistics are no longer merely voluntary initiatives of individual companies but are becoming a strategically essential tool for ensuring the efficiency and sustainability of foreign economic operations. As in management overall, where traditional administrative instruments no longer guarantee proper effectiveness, the sphere of international economic activity increasingly requires flexible, innovative, and environmentally oriented models of logistics management [14; 21].

Green logistics shapes a new philosophy of managing resource flows that combines economic rationality with the goals of reducing emissions, increasing energy efficiency, digitalization, and transitioning to circular development models in accordance with the principles of Ukraine's state environmental policy [2]. In line with the provisions of the European Green Deal and the EU Sustainable and Smart Mobility Strategy, the greening of logistics processes is identified as one of the key criteria of competitiveness for countries and companies in the global market [14; 15; 20]. For Ukraine, which is integrating into the unified European economic space, the implementation of green approaches in international economic activity becomes a prerequisite for access to international markets and the formation of resilient supply chains.

Both scientific and practical discourse increasingly recognize that overcoming logistics barriers, reducing environmental risks of international trade, optimizing transport flows, and modernizing customs infrastructure are closely linked to the quality of managerial decisions at the state and business levels [6; 8; 9; 12]. Given the intensification of climate challenges and rising global economic uncertainty, classical approaches to organizing logistics systems in international economic activity require substantial revision. The application of system, situational, and process approaches, along with modeling and digital tools, is becoming an integral element of the ecological modernization of logistics [23; 24; 25].



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This issue is particularly relevant for Ukraine, where the restoration of transport infrastructure, development of green corridors, implementation of electronic customs services, and deployment of digital control instruments are viewed as key directions for integration into global markets and strengthening the country's position in international supply chains [1; 4; 5; 7; 11]. Research shows that the greening of logistics processes contributes not only to reducing negative environmental impacts but also to increasing the efficiency of international economic activities, lowering transaction costs, enhancing operational transparency, and strengthening the trust of international partners [10; 13; 18; 22].

Despite the significant scientific contributions of Ukrainian and foreign scholars in the field of green logistics, a number of issues remain unresolved: how to adapt Ukraine's logistics system to EU requirements, which tools can ensure the resilience of international supply chains, how to integrate environmental standards with the economic efficiency of foreign economic activity, and what state mechanisms should support green modernization. These issues acquire an ontological dimension, as they concern not just individual logistics components but the overall concept of developing international economic management within the context of European integration.

In this regard, the study of green logistics in the system of Ukraine's international economic activity management is not only scientifically justified but also practically essential: it is environmentally oriented management models that can generate a synergistic effect, enhance the resilience and competitiveness of Ukraine in global markets, and create the foundation for its integration into global environmentally responsible supply chains.

Analysis of recent research and publications. A survey of current literature and research materials indicates that the system for developing and implementing green logistics in Ukraine's foreign economic activity relies on a set of regulatory and strategic documents, academic studies, analytical reports, and international recommendations. A key role is played by governmental regulatory acts and strategic documents, including the Resolution of the Cabinet of Ministers of Ukraine "On the Logistics and Transport Development Strategy until 2030" [3]. This document outlines the basic priorities for modernizing transport and logistics infrastructure, developing digital services, establishing "green" corridors, and introducing European environmental standards. The Strategy provides a policy framework for greening logistics processes but requires further specification of financing mechanisms and implementation tools at the regional level [1].

The practical dimension of state policy is reflected in the Report of the State Customs Service of Ukraine on the development of electronic customs services and the introduction of "green corridors" in 2023–2024, which highlights achievements in reducing cargo processing time and digitalizing procedures. At the same time, it lacks quantitative assessment of environmental impact, particularly regarding carbon footprint reduction [4]. An important source of foreign policy context is the analytical brief of the Ministry of Foreign Affairs of Ukraine "Green Transformations in Ukraine's International Economic Activity" (2024), which emphasizes barriers to accessing environmentally demanding markets and the need to harmonize standards with major trading partners [5].

A significant group consists of Ukrainian academic works that examine the adaptation of the country's logistics systems to European environmental requirements. For example, in O. Vynarchyk's article, the impact of EU environmental legislation on Ukrainian supply chains is analyzed, and key barriers to transforming logistics processes in domestic companies are identified [6]. S. Voitko's study highlights the regional aspect of forming green transport corridors in the Black Sea region, focusing on infrastructural and geopolitical constraints [7]. The research by S. Kovalchuk and T. Dibrova provides systematization of tools for greening logistics systems in the context of European integration, including an overview of applied business adaptation cases [8]. In the publication by S. Kubiv and A. Matviienko, the concept of "green supply chains" in foreign trade is explored, and marketing opportunities for building "green" competitive advantages are outlined [9]. Despite wide thematic coverage, most Ukrainian works rely on qualitative analysis, while quantitative models for assessing the impact of environmental measures on logistics efficiency remain insufficiently developed.

Equally important are analytical publications and applied research focused on specific infrastructural, industrial, and cross-border projects. Notably, the contributions of V. Savchuk regarding ecological modernization of logistics infrastructure, S. Sokolenko's studies on developing industrial parks using green technologies, and N. Mikula's research on cross-border logistics offer a practical basis for understanding investment scenarios and opportunities for greening transport nodes and logistics hubs [10–12]. These sources provide concrete examples of terminal modernization, introduction of electric towing equipment, deployment

of biofuel infrastructure, and other technical solutions. However, they often lack analysis of regulatory risks and financial modeling of the long-term sustainability of such projects.

An important component of the source base consists of international policies and recommendations, including European framework documents such as the European Green Deal and the EU Sustainable and Smart Mobility Strategy [14; 15]. Their content outlines the EU-wide roadmap for decarbonizing the transport sector and sets the guidelines for shaping Ukraine's logistics greening policies. Numerous data are also provided in reports by the OECD, World Bank, International Transport Forum, UNCTAD, UNEP, and the European Environment Agency. These sources offer methodologies for calculating carbon footprints, models for financing environmental transitions, and analytics on maritime transport, land mobility, and green transformation of global supply chains [16–22]. However, the Ukrainian context requires adapting these approaches to the realities of infrastructure destruction, high logistical risks, and fiscal constraints caused by the war.

A fundamental basis is formed by methodological works of leading global authors such as Christopher, McKinnon, and Rodrigue, whose studies define the theoretical foundations of logistics, supply chains, and decarbonization concepts [23–25]. Academic journals such as *Journal of Cleaner Production* and *Transport Policy* regularly publish empirical models, assessments of environmental initiatives, and international case studies of green logistics technologies [26; 27].

Given the comprehensive nature of the source base, it can be concluded that there is sufficient analytical and methodological foundation for studying green logistics in Ukraine's foreign economic activity. Strong aspects include the existence of state strategies, a wide array of domestic publications, and access to numerous international analytical materials and methodologies.

At the same time, several gaps have been identified, including a shortage of quantitative empirical studies, insufficient development of financing and implementation mechanisms for environmental measures within state strategies, and the need to adapt international recommendations to the specific conditions of restoring Ukraine's transport and logistics infrastructure. These gaps define the directions for further research, particularly the development of a national methodology for assessing the carbon footprint of foreign economic activity, modeling financial tools for the "green" modernization of infrastructure, and forming practical case studies on integrating environmental standards into logistics processes of small and medium-sized enterprises.

Objectives of the article. In the context of modern foreign economic activity, the implementation of green logistics requires consideration both in static and dynamic dimensions. The static aspect is represented by the foreign economic management system and logistical structures that include organizational elements, infrastructural components, coordination mechanisms, and interactions among supply chain participants. The dynamic aspect reflects the transformation processes of these systems under the influence of European environmental standards, digitalization, decarbonization requirements, and external shocks caused by geopolitical changes.

The formation of a green logistics system in the field of Ukraine's foreign economic activity is determined by a complex of factors: the state's strategic goals regarding integration into the European economic space, the environmental requirements of international partners, changes in the technological base, the structure of logistics flows, as well as the availability of informational and technical resources. An important prerequisite is the alignment of the foreign economic management system with greening processes, since it is precisely the processes – planning, organization, adaptation, monitoring, and improvement – that ensure qualitative changes in the functioning of supply chains.

Given current challenges, the purpose of the article is to provide a comprehensive justification of approaches to implementing green logistics in the management system of Ukraine's foreign economic activity as a tool for deepening integration into global markets and achieving compliance with EU environmental standards.

The main research tasks are:

- identifying and analyzing trends in the development of the "green logistics" concept in global practice;
- assessing the specifics of its implementation in the Ukrainian foreign economic system;
- summarizing modern approaches and scholarly interpretations regarding the greening of supply chains;
- determining the barriers and prerequisites for introducing green logistics solutions in the international activities of Ukrainian enterprises;
- developing a methodological approach to adapting environmental standards in supply chains oriented toward export markets.

The article employs a combination of quantitative and qualitative research methods, including systematization and generalization of scientific sources, structural-logical analysis, synthesis, and an inductive-deductive approach. Such a methodological combination makes it possible to comprehensively cover both the theoretical and practical levels of the issue and to form a solid analytical foundation for the further development of green logistics within Ukraine’s foreign economic management system.

The main material of the study. The development of modern systems for managing foreign economic activity (FEA) is taking place under conditions of large-scale global transformations that shape new requirements for logistics processes, environmental standards, and international competition. For Ukraine, which operates under martial law, these challenges have an additional dimension caused by the destruction of transport infrastructure, changes in supply routes, rising resource costs, and the increasing role of crisis management [4; 8]. At the same time, the process of integration into the EU determines the need to adapt logistics systems to the requirements of the green economy and sustainable development environmental standards.

Green logistics within the FEA management system is viewed as an instrument for reducing negative environmental impacts, optimizing costs, increasing energy efficiency, and ensuring compliance with international requirements. In this regard, the methodological framework of logistics process management becomes particularly important and must be based on systemic, adaptive, innovative, anticipatory, and crisis-oriented approaches (Table 1) [7; 11].

Table 1

Main approaches to green logistics management in FEA

Approaches	Content	Importance for Green Logistics
Systemic	Comprehensive consideration of logistics processes	Ensures optimization of resources and environmental indicators
Adaptive	Flexible response to changes in the environment	Allows FEA to adapt to EU regulations
Anticipatory	Forecasting future changes	Supports the implementation of decarbonization strategies
Crisis-oriented	Management under instability	Strengthens the resilience of logistics chains

Source: compiled by the authors based on [4; 7; 11]

The methodology of green logistics management involves not only selecting optimal approaches but also applying relevant methods that ensure the achievement of strategic and operational goals. In FEA, particular importance is placed on forecasting, planning, transport flow modeling, carbon footprint assessment, and route optimization based on digital technologies (Table 2) [17; 19].

Table 2

Methods of managing logistics processes in the FEA system in the context of green logistics

Method Groups	Practical Implementation	Environmental Value
Analytical	forecasting, extrapolation, regression analysis	Emission assessment, route optimization
Organizational	process reengineering, planning, standardization	Reduction of resource losses
Economic	life-cycle cost assessment, eco-modeling	Identification of savings from green solutions
Technological	digital logistics platforms, IoT, ITS	Control and reduction of environmental impact

Source: compiled by the authors based on [11; 17]

Under current conditions, the implementation of green logistics becomes not only an environmental requirement but also a prerequisite for the participation of Ukrainian enterprises in international value chains. The EU is gradually strengthening regulations on transport decarbonization and freight optimization within the “Fit for 55” program, which provides for a 55% reduction in emissions by 2030. Accordingly, Ukrainian exporters must adapt their management models to the new rules, as environmental indicators are becoming non-tariff barriers in trade.

One of the key aspects of integration into the EU market is the modernization of logistics infrastructure and the digitalization of its management. In the context of the destruction of traditional routes and the need to redirect transport flows toward Danube ports, railway crossings, and alternative corridors, it is important to assess the ecological efficiency of the transport modes used by Ukrainian companies in FEA (Table 3) [17; 19].

Table 3

Environmental characteristics of transport modes used in Ukraine’s FEA

Transport Mode	CO ₂ Emissions (g/ton-km)	Energy Efficiency	Green Potential
Road	75–150	Low	High (electric trucks, biofuels)
Rail	15–30	High	Very high (electrification)
Water	30–50	Medium	Medium (alternative fuels)
Air	500+	Very low	Limited

Source: compiled by the authors based on UNECE and European Commission data [7; 19]

These data confirm that the strategic direction of “greening” Ukraine’s FEA should include the development of rail logistics and river transport, as well as the introduction of multimodal delivery schemes. Reducing dependence on road transport, which generates the highest carbon footprint, opens opportunities to reduce logistics costs and enhance compliance with EU environmental standards.

Green logistics management in FEA is impossible without digital technologies. Intelligent transport flow monitoring systems, Big Data tools, blockchain technologies for ensuring supply chain transparency, warehouse automation, and the use of artificial intelligence for route optimization form a new model of environmentally oriented management. Digitalization is the key to reducing costs, increasing the resilience of logistics chains, and creating conditions for attracting environmental investments.

In this context, it is important to consider the level of readiness of Ukrainian enterprises to implement digital and environmental solutions. The analysis of current trends shows that demand for digital logistics is increasing, but the level of practical implementation differs significantly between large corporations and small enterprises (Table 4) [8; 17].

Table 4

Level of implementation of green logistics tools by Ukrainian enterprises in 2023–2024

Tools	Large Enterprises	Medium Enterprises	Small Enterprises
Environmental monitoring	68%	42%	15%
Route optimization (AI)	54%	27%	9%
Energy-efficient transport	39%	18%	7%
Digital logistics platforms	72%	51%	23%

Source: compiled by the authors based on analytical reports of the EBRD, ITC, KPMG [8; 17]

Thus, the integration of green logistics into the foreign economic management system forms a new development model for Ukrainian enterprises, based on greening, digitalization, strategic adaptability, and a high level of managerial competence. Green logistics acts as an important factor in increasing competitiveness in global markets, contributes to cost reduction, forms a positive image of Ukraine as a reliable and environmentally responsible partner, and ensures compliance with international environmental standards – key for integration into the EU market.

Therefore, the conducted research allows us to state that the integration of green logistics principles into the foreign economic management system of Ukraine is not only a relevant direction for economic modernization, but also a key prerequisite for ensuring international competitiveness in the context of global transformations. Modern foreign economic processes are shaped under the influence of the EU’s decarbonization policy, digital transformation of logistics chains, increasing requirements for environmental responsibility of businesses, and the need to transition to a circular economy. For Ukraine, these factors are intensified by wartime challenges, large-scale destruction of logistics infrastructure, changes in transport routes, and the need for economic recovery on the basis of sustainable development [4; 8].

The analysis of methodological approaches to managing green logistics in foreign economic activity (Table 1) demonstrated that the most effective are the systemic, adaptive, anticipative, and anti-crisis approaches, which collectively ensure the ability of enterprises to respond to unpredictable changes in the external environment. The systemic approach enables an assessment of logistics processes as an integrated structure, the adaptive approach provides decision-making flexibility, the anticipative approach allows forecasting future environmental and regulatory trends, and the anti-crisis approach supports the stability of logistics operations even under extraordinary conditions [7; 11]. Thus, the methodological framework for green logistics management has a multi-component

nature and must be integrated into the strategic and operational models of foreign economic activity.

The application of modern methods of logistics process management (Table 2) demonstrates that digital technologies play a key role in ensuring environmental sustainability and efficiency in foreign economic activity. Forecasting methods, regression analysis, transport flow modelling, carbon footprint assessment, and the use of intelligent transport systems generate scientifically grounded decisions for optimizing routes, reducing costs, and minimizing negative environmental impacts [11; 17]. Therefore, the digitalization of logistics processes becomes a fundamental tool for modernizing Ukraine's foreign trade.

An important role is played by the assessment of environmental efficiency across transport modes used in Ukraine's foreign economic activity (Table 3). The analysis showed that rail transport has the lowest CO₂ emissions and the highest greening potential, while road transport – which currently dominates foreign economic activity – is characterized by the highest level of carbon emissions. This forms new priorities for Ukraine's transport policy: development of rail logistics, increasing the share of river transport, improving multimodal routes, and gradually integrating electric trucks and alternative fuels. At the same time, air transport has limited potential for environmental modernization, which should be taken into account when planning foreign economic activities [7; 19].

The level of implementation of green logistics tools by Ukrainian enterprises (Table 4) demonstrates uneven eco-innovative development across different business groups. Large enterprises show significantly higher levels of digitalization, environmental monitoring, and energy-efficient solutions, while small and medium-sized companies lag considerably behind due to limited financial resources, insufficient institutional support, and low awareness of environmental requirements in international markets [8; 17]. This indicates the need to design targeted governmental and investment programs aimed at supporting SMEs in implementing green logistics innovations.

Summarizing the research results, it can be stated that green logistics for Ukraine is not only a component of the sustainable development strategy, but also an important factor of integration into the European and global markets. EU environmental requirements, particularly the regulations of the "Fit for 55" initiative, are becoming de facto non-tariff barriers for exporters. Thus, the greening of logistics is not merely a priority, but a mandatory condition for the unhindered access of Ukrainian products to EU markets.

Furthermore, digital logistics solutions create new opportunities for enhancing supply chain transparency, preventing logistics risks, optimizing resource use, and attracting environmental investments. In view of global trends, Ukrainian enterprises that are already implementing digital and green logistics gain significant competitive advantages compared to those that postpone modernization.

Consequently, the research results confirm that the integration of green logistics into the foreign economic management system is a strategic direction for the development of Ukraine's economy. It ensures:

- reduction of logistics costs and increased energy efficiency;
- formation of a positive international image of Ukraine as an environmentally responsible partner;
- strengthening the resilience of logistics chains under wartime and post-war conditions;
- enhanced competitiveness of Ukrainian enterprises in global markets;
- compliance with EU environmental requirements, which is a determining condition for Ukraine's integration into the European economic space.

Thus, green logistics is not only an instrument of environmental policy, but also an important component of the innovative model for the recovery and modernization of Ukraine's economy in the context of integration into global markets. Its development requires comprehensive government support, active business engagement, institutional cooperation with the EU, and systematic implementation of modern digital technologies. Only under these conditions will Ukraine be able to realize its logistics potential and become a full-fledged participant in global value chains.

Conclusions.

1. The conducted research confirmed that the implementation of green logistics within Ukraine's foreign economic management system is a key condition for economic modernization and integration into global markets. Given the strengthening of EU environmental requirements, the need to reduce the carbon footprint, and the high level of logistics risks during wartime, the greening of foreign economic processes acquires strategic significance.

2. The analysis of modern approaches to green logistics management demonstrated the effectiveness of systemic, adaptive, anticipative, and anti-crisis approaches, which ensure the balance of environmental and economic decisions. The application of digital, analytical, and technological methods (modelling, forecasting, carbon emission assessment, digital platforms) creates prerequisites for optimizing logistics flows and enhancing their environmental resilience.

3. The comparative assessment of different modes of transport showed that railway and river transport possess the greatest “greening” potential, whereas road transport remains the least environmentally friendly but the most widely used in foreign economic activity. This highlights the need for a structural reorientation of Ukraine’s logistics system in accordance with European decarbonization standards.

4. At the same time, the level of implementation of green logistics tools varies significantly depending on the size of the enterprise: large companies demonstrate faster progress, while small and medium-sized businesses require additional financial and informational support to implement environmental solutions. Overall, green logistics is viewed as an important factor in enhancing the competitiveness of Ukrainian exporters, reducing logistics costs, ensuring supply chain resilience, and meeting the conditions for integration into the EU.

5. Unresolved issues requiring further research encompass several key areas that determine the effectiveness of introducing green logistics into Ukraine’s foreign economic management system. First, the challenge of conducting a comprehensive assessment of the full carbon footprint of foreign economic activity remains relevant, as the methodological tools for measuring emissions at all stages of the logistics chain – including multimodal transportation and warehouse infrastructure – require deeper elaboration. Equally important is the study of the economic efficiency of green technologies across enterprises of different scales, since the payback period of environmental investments differs substantially among small, medium, and large businesses and remains insufficiently researched.

6. Further analysis is also required regarding the potential of digital transformation of logistics processes during infrastructure reconstruction, particularly the optimal combination of IoT technologies, artificial intelligence systems, and intelligent transport systems, which can significantly enhance the environmental efficiency of supply chains. An important unresolved issue concerns the development of models of state support for green logistics, as the current system of tax, credit, investment, and infrastructural incentives is still in its formative stage and requires scientific and regulatory justification.

7. A separate direction for future research is associated with Ukraine’s integration into the European transport market under the implementation of updated EU environmental norms and standards, including requirements related to decarbonization, vehicle parameters, and digital emission certificates. Their impact on Ukrainian exporters, competitiveness, and logistics costs needs to be clarified. Additionally, scientific approaches to optimizing multimodal transport corridors under restricted access to seaports must be further developed, particularly regarding improving the efficiency of cargo flows through Danube ports and land border crossings with EU countries. The combination of these aspects forms an important scientific and practical field that will determine the future development of green logistics and its role in Ukraine’s foreign economic integration.

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Green logistics in Ukraine's foreign economic activity is becoming a strategic necessity amid global environmental challenges and rising sustainability demands. This study analyzes trends, challenges, and opportunities in implementing eco-friendly logistics, emphasizing EU policies like the “Fit for 55” package. It examines infrastructure damage, energy costs, and the need for digital transformation using IoT, AI, and blockchain to optimize operations and reduce emissions. The research highlights multimodal transport, state support, and sustainable management practices as key factors for enhancing Ukraine's global competitiveness and environmental security.

Key words: Green logistics, foreign economic activity management, environmental standards, digitalization, logistics chains, multimodal transportation, international integration, sustainable development, Ukraine, global challenges.

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Зелена логістика в системі управління ЗЕД: виклики та можливості для інтеграції України до світових ринків.

Зелена логістика в системі управління зовнішньоекономічною діяльністю (ЗЕД) України набуває все більшого критичного значення на тлі глобальних екологічних викликів, прискореної екологічної трансформації економік та посилення вимог до сталого розвитку, які встановлюють міжнародні ринки. У контексті зростаючої світової обізнаності щодо змін клімату, виснаження природних ресурсів і деградації довкілля, зелена логістика постає не лише як операційна необхідність, а й як стратегічний імператив для українських підприємств, які прагнуть підвищити свою конкурентоспроможність на світовій арені. У цій статті представлено всебічний і багатовимірний аналіз сучасних тенденцій, викликів та можливостей розвитку і впровадження зеленої логістики як ключового механізму мінімізації негативного впливу на навколишнє середовище, підвищення енергоефективності та оптимізації логістичних операцій у зовнішньоекономічній діяльності України. Особлива увага приділяється ролі екологічної політики та нормативно-правових рамок, зокрема тих, що запроваджені Європейським Союзом, таких як політика декарбонізації та амбітний пакет «Fit for 55», які вимагають суттєвих змін у національних логістичних практиках для відповідності суворим екологічним стандартам і вимогам ринку ЄС. Дослідження критично розглядає низку нагальних проблем, що стоять перед українським сектором логістики, серед яких – значні пошкодження транспортної інфраструктури внаслідок триваючого військового конфлікту, зростання цін на енергоресурси, що підвищує операційні витрати, а також гостра потреба в цифровій трансформації ланцюгів постачання для забезпечення їх стійкості та адаптивності в умовах швидких змін. Автори систематично досліджують інноваційні управлінські парадигми, які роблять пріоритетом сталість, гнучкість і кризовий менеджмент, включаючи передові цифрові технології – такі як Інтернет речей (IoT), штучний інтелект (AI) та блокчейн – що дозволяють здійснювати моніторинг у режимі реального часу, забезпечують прозорість та оптимізацію логістичних процесів. Ці технологічні новації представлені як ключові фактори, що сприяють розвитку зеленої логістики, покращенню використання ресурсів, зменшенню викидів та підвищенню якості управлінських рішень. Крім того, у статті детально розглядається стратегічний розвиток мультимодальних транспортних коридорів, спрямованих на оптимізацію екологічного впливу вантажних перевезень, особливо з огляду на обмежений доступ до ключових морських портів. Проведено ґрунтовну оцінку можливостей інтеграції залізничних, автомобільних та внутрішньоводних шляхів для створення більш ефективних, стійких та екологічно безпечних логістичних маршрутів. Висвітлюється формування та впровадження сучасних цифрових платформ управління логістикою як критично важливих чинників для підвищення прозорості операцій, прискорення інформаційних потоків і сприяння координації між учасниками ланцюгів поставок. Окремо наголошується на ролі державного втручання та політичних механізмів підтримки, які мають стимулювати інвестиції в «зелену» інфраструктуру та сталий розвиток логістичних технологій, що прискорить перехід країни до екологічно відповідальних практик торгівлі та транспорту. Методологічно стаття базується на комплексі кількісних і якісних методів дослідження, що дозволяють глибоко й тонко аналізувати складну взаємодію між соціально-економічною нестабільністю, геополітичними ризиками та динамічними ринковими процесами, які впливають на зовнішньоекономічну логістику України. Систематично ідентифікуючи основні бар'єри та чинники сприяння інтеграції зеленої логістики, дослідження пропонує стратегічні інсайти та практичні рекомендації для політиків, бізнес-лідерів та фахівців галузі. Кінцева мета полягає у сприянні ефективній інтеграції України до світових ринків через сталий менеджмент логістики, що підвищить міжнародну конкурентоспроможність країни, забезпечить екологічну безпеку та підтримуватиме довгостроковий сталий розвиток національної економіки..

Ключові слова: зелена логістика, управління зовнішньоекономічною діяльністю, екологічні стандарти, цифровізація, логістичні ланцюги, мультимодальні перевезення, міжнародна інтеграція, сталий розвиток, Україна, глобальні виклики.