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CROSS-BORDER TRANSPORT CONNECTIONS UNDER WARTIME CONDITIONS

Cross-border transport connections play a crucial role in ensuring the stability of international economic relations and the functioning of national economies particularly during periods of crisis and geopolitical instability [1]. In wartime conditions the significance of transport infrastructure and logistics systems increases substantially as they become key instruments for maintaining trade flows ensuring humanitarian support and supporting the resilience of economic systems [2]. Military conflicts inevitably disrupt traditional transport corridors damage infrastructure and complicate international cooperation which forces governments and businesses to adapt logistics networks and develop new mechanisms for organizing cross-border mobility of goods services and people [3]. Therefore, the study of cross-border transport connections under wartime conditions acquires particular scientific and practical relevance within the context of ensuring economic security and sustainable regional development [4].

The functioning of cross-border transport systems in wartime is characterized by a high level of uncertainty and risk. Military actions often lead to the destruction of critical infrastructure including railways bridges highways ports and logistics terminals which significantly reduces the capacity of transport networks. At the same time security restrictions changes in border control procedures and the introduction of special regulatory regimes complicate the movement of vehicles and cargo across state borders [5]. As a result, transport operators are forced to restructure logistical routes increase the use of alternative corridors and develop flexible supply chain management strategies. In these circumstances the efficiency of cross-border transport systems depends largely on the ability of states to coordinate infrastructure restoration ensure safe transport operations and create institutional mechanisms that facilitate international cooperation.

One of the most important aspects of cross-border transport connections in wartime is the diversification of logistics routes. The disruption of traditional trade corridors forces national economies to reorient cargo flows toward alternative directions including neighboring countries and regional transport hubs. This process often involves the modernization of border checkpoints the expansion of railway and road infrastructure and the development of multimodal transport systems that combine

different modes of transportation. Multimodal logistics solutions allow for greater flexibility in organizing cargo transportation and help reduce the negative impact of infrastructure damage or security risks. Consequently, the development of diversified cross-border transport networks becomes an important factor in maintaining the continuity of international trade and supply chains.

Another significant dimension of wartime cross-border transport is the growing importance of international institutional cooperation. Governments international organizations and transport companies must coordinate their actions to ensure the efficient functioning of logistics corridors and the timely delivery of critical goods including energy resources food medical supplies and humanitarian aid. The harmonization of customs procedures the simplification of border crossing regulations and the introduction of digital logistics management systems contribute to reducing administrative barriers and increasing the speed of cargo movement across borders. In addition, joint infrastructure projects and coordinated investment programs help strengthen the resilience of transport systems and improve their ability to withstand crisis situations.

The social and humanitarian role of cross-border transport connections also increases considerably in wartime conditions. Transport corridors become essential channels for the evacuation of civilians the delivery of humanitarian assistance and the support of displaced populations. The effective organization of passenger and cargo transportation allows governments and international organizations to respond more quickly to humanitarian challenges and provide essential resources to affected regions. In this context the reliability and safety of transport infrastructure acquire not only economic but also social and humanitarian significance.

Digital technologies and information systems represent another important factor in the development of cross-border transport connections during periods of military conflict [1]. Modern logistics management increasingly relies on digital platforms that allow real time monitoring of cargo movements optimization of transport routes and the rapid exchange of information between logistics operators customs authorities and border control services. The implementation of electronic documentation systems intelligent transport technologies and automated customs procedures significantly increases the transparency and efficiency of cross-border logistics operations. At the same time digitalization helps reduce corruption risks minimize administrative delays and improve the overall coordination of transport activities under conditions of limited resources and heightened security requirements.

The experience of countries that face military challenges demonstrates that the resilience of cross-border transport systems depends largely on strategic planning and the development of adaptive logistics policies. Governments must prioritize the protection and restoration of critical transport infrastructure invest in the modernization

of border crossing facilities and strengthen cooperation with neighboring states and international partners. Particular attention should be paid to the integration of national transport networks into broader regional logistics systems which can provide alternative routes and increase the flexibility of international supply chains.

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ВИКЛИКИ АКТИВІЗАЦІЇ ІННОВАЦІЙНИХ ПРОЦЕСІВ В УКРАЇНІ ПІД ЧАС ВІЙНИ ТА У ПЕРСПЕКТИВІ ПОВОЄННОГО ВІДНОВЛЕННЯ

Подолання технологічної відсталості і збереження стійкості економіки України в умовах війни та у перспективі повоєнного відновлення неможливі без модернізації і розширення виробництва, що відповідно потребує широкого впровадження інновацій і активізації інноваційних процесів. Водночас, вітчизняна інноваційна сфера перебуває у вкрай важкому становищі [1; 2]. Україна покладає чимало сподівань на інтеграцію в ЄС, яка, на думку вітчизняних урядовців, дозволить, принаймні частково, його поліпшити. Проте, такі сподівання можуть виявитись занадто оптимістичними і перебільшеними оскільки ЄС сам відчуває чимало труднощів у цій сфері та зазнає наростаючого технологічного відставання і технологічної залежності від свої глобальних конкурентів, зокрема від США та Китаю (табл. 1)⁴.

⁴ Детально проблеми в інноваційній сфері ЄС викладені у доповіді Єврокомісії «The Future of European Competitiveness», 2024 р. [3, 4]