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International Transport Corridors and their Impact on the Countries' Economic Development

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ABSTRACT

This article discusses the international transport corridors' concept, goals of establishing and general characteristics. The author provides brief description of prerequisites for the international transport corridors formation and development, and also considers the contribution of international transport corridors to the national economy development of the states participating in the transport and logistics system from the point of view of micro- and macroeconomic indicators. The conclusions contained in this article regarding the international transport corridors importance for the economy of the state can be used in the future to assess the need to develop transport and logistics infrastructure within the framework of already functioning international transport corridors, the formation of new international transport corridors in the context of changing macroeconomic conditions and redistribution of traffic flows. This work may be of interest to researchers in the field of global and regional economics, transport and logistics, international entrepreneurship and public administration.

Keywords: International transport corridor, transport corridor, economic development, shipments, transport, transit.

INTRODUCTION

International transport corridors (ITC) in the context of global integration processes and the global labor division are among the most important factors in the world economy development. ITCs ensure the creation and functioning of stable transport links between various participants in international economic relations.

It is certainly difficult to deny the ITCs' importance for the global economy development. At the same time, scientific interest arises in relation to what prerequisites lie behind the ITC's formation and what contribution they make to the national economies' development of states where the ITC's national part passes.

The theoretical and methodological foundations of the ITC's formation and development are presented in the works of such authors as T. Schmidt, S. Schaefer, R. Garcia, M. Regan and M. Behrens, H. Lu, J. Liu and D. Jeng, B. Vardomsky, M. Turaeva and others. Although the variety of literature sources and points of view reflected in the works of the authors allow us to study the topic under consideration, nevertheless, there remains a certain set of issues that are not sufficiently disclosed and require clarification. The issues related to methodological support of the processes of the ITC's formation and development and the determination of the assessment of their impact on the national economies of the countries participating in the transport system seem relevant.

The purpose of this work is to comprehensively study the current state and trends in the international transport corridors modern development, taking into account new challenges related to decarbonization and existing factors preventing the digital technology's introduction in the transport sector.

The author also assesses the impact of the processes of the ITC's formation and functioning as an international transport and logistics phenomenon not only for the global economy, but also for the national economies of the countries participating in the transport system where the ITC passes.

MAIN PART

In accordance with the ITC definition approved by the group of experts of the Inland Transport Committee of the United Nations Economic Commission for Europe (UN ECE), the ITC is a part of a national or international transport system providing significant freight and passenger transportation between individual geographic areas, includes rolling stock and devices of all transport types operating in this direction, as well as a set of technological, organizational and legal conditions for the implementation of these shipments. Due to the transport corridors functioning, joint investment projects in the infrastructure field are activated, the territory and infrastructure are used more rationally and optimally, the trade and customs legislation of the participating countries forming the corridor framework is unified, and unified digital tools and services are introduced.[i]

ITCs include not only geographical area within which the movement of goods and people is ensured, but also the technological infrastructure directly creating conditions for ensuring the goods and passengers movement within the ITC, and a set of regulatory requirements imposed on the ITC. The developed unified requirements for the European Highway Network which are the infrastructure elements of the corresponding ITC, serve as a clear example of the ITC last element.

Thus, it can be stated that ITC is a union of three elements:

1) Geographic area;
2) Transport infrastructure (highways, railways, navigable rivers and canals, various types of freight and passenger transport);
3) Internal and cross-border contractual legal framework and regulatory requirements.

The ITC as an independent phenomenon appeared in the economy relatively recently - in the 80s of the twentieth century when the Inland Transport Committee of the UN ECE began to study transport flows in the European continent. The purpose of the above study was to find new routes for the goods transportation in conditions of high load on the existing at that time transport and logistics infrastructure.

The transport flows development in Europe in the above period was due to the beginning of deep economic integration of the states located in the region formalized by the establishment and functioning of the European Economic Union. Thus, according to the union's functioning principles, one of the goals of creating this integration association was to ensure the freedom of goods movement across the borders of the member states. Accordingly, the ITC

establishment, in addition to the need to unload the existing transport and logistics infrastructure, also pursued the goal of eliminating barriers to the free goods movement within the European Union.

As the trade volume between the countries of the European Union and the countries of the Asian region increased, there was a need to establish new sustainable transport links between the two parts of the world. To solve these issues, such initiatives as the "One Belt One Road", "North-South", "India - Middle East - Europe" ITCs are currently being implemented.

The ITC's formation and the use of its potential is subject of interstate agreements concluded by countries where the ITC's national parts pass, as well as integration associations. As a rule, the implementation of these agreements requires the signatory states to use various administrative, technical and legislative resources.

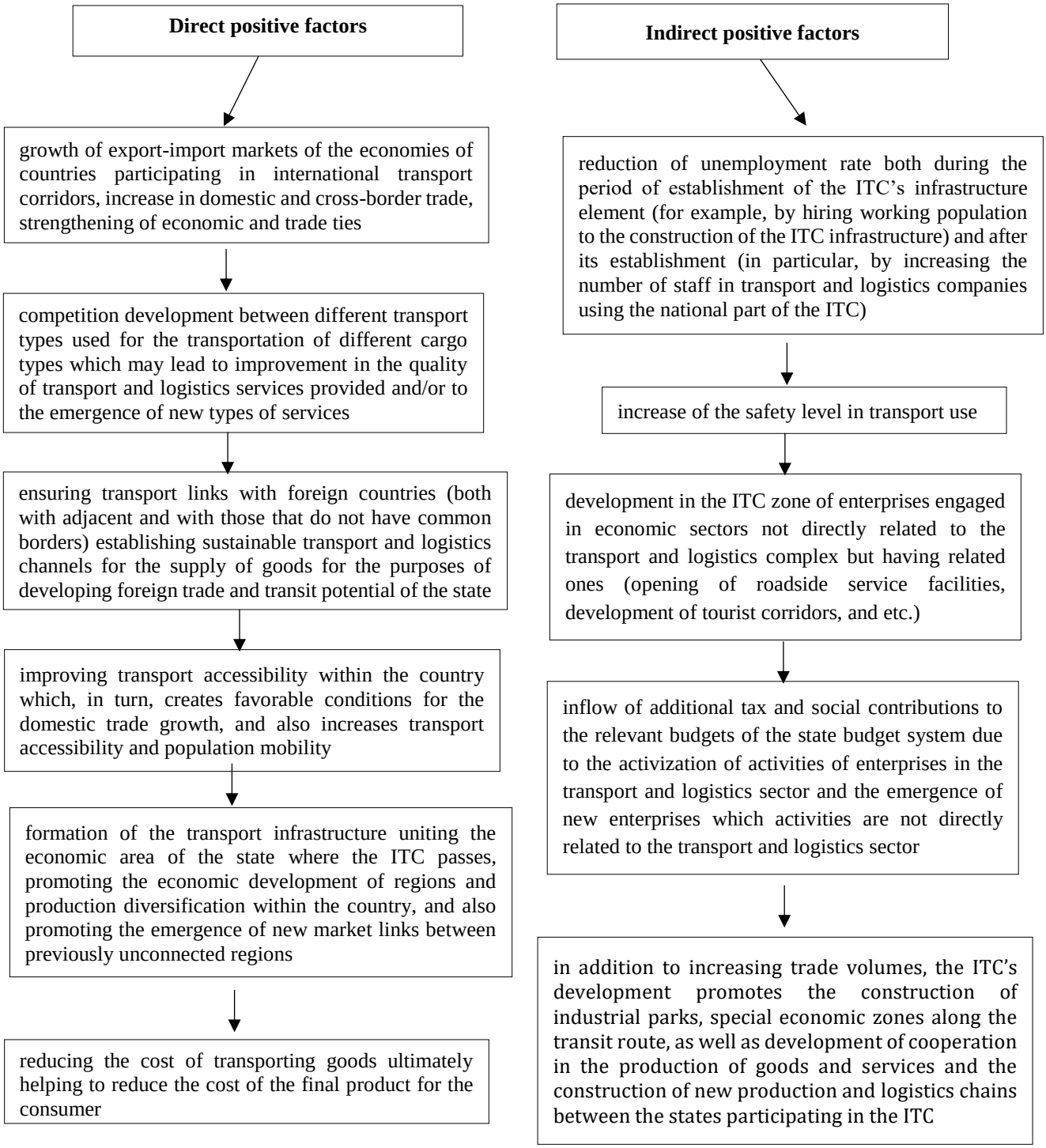
For example, the North-South ITC was formed by signing a corresponding intergovernmental agreement between the Governments of the Russian Federation, the Republic of India, the Islamic Republic of Iran and the Sultanate of Oman.

It is difficult to deny the ITC's contribution to the global economy development. First of all, the use of transport corridors helps to reduce transport costs in foreign trade, and also increases the level of national products accessibility to the foreign markets.

The illustration of how important the ITCs are for the global economy was the situation with the ships blocked in the Suez Canal by the stranded Ever Given container ship in March 2021. Then, the Lloyd's List shipping company estimated the damage for each hour of delay for ships with goods at $400 million for a period of 6 days.

At the same time, ITCs make significant contribution to the economies' development of the states where their national parts pass. This contribution can take form in direct and indirect effects arising from the formation of transport corridors' national parts and contributing to the improvement of the macro- and socio-economic indicators of the state:

Positive ITC Factors Influencing the Economy



However, despite the above-mentioned positive effects facilitated by the ITC, ITC's presence on the territory of the state can also contribute to the emergence of factors that can make a negative contribution to the economy of the country. In particular, among such factors is the deterioration of the environmental situation in the zone of the ITC national part and relatively uneven development of the state territories.[ii]

Having an important and effective transport and logistics corridor, the state can ensure not only the achievement of a high level of economic development, but also influence the economic and political processes in neighboring states. In the process of developing transport flows along international transport corridors, it should be taken into account that there is fierce competition among states and interstate associations regarding various options for establishing the infrastructure of international transport corridors in order to attract transport flows to their territory.

Historically, the formation of trade routes used in international trade was spontaneous. The functioning of trade routes was carried out taking into account natural barriers which were mainly seas and rivers. In turn, the smooth operation of international transport corridors is based on developed infrastructure, respectively, of automobile, rail, sea, air or multimodal transport. However, as the experience of recent years shows, not only economic but also political processes significantly affect the transport flows functioning. This leads to redirection of transport flows from traditional routes, the loss of significance of previously functioning international transport corridors and the emergence of new international transport corridors.[iii]

The vivid example is the decline and replacement of the most important intercontinental land route between Europe and Asia, the Great Silk Road, by newly opened and more profitable sea routes which have advantages in terms of movement speed, relative cheapness and the ability to transport significantly larger quantities of goods.

The transport corridors development also helps to use the benefits of the scale effect. Transport corridors connect the largest economic centers, allowing to concentrate demand for transport services, investments in large infrastructure projects, generating synergistic effect, usually supported by federal authorities through the establishment of special economic zones and stimulating the clusters emergence.

ITCs also contribute to the development of urban agglomerations. In this case, the transport infrastructure formed in the process is not only used to deliver goods to the consumer, but also creates additional jobs, generates demand for new technological developments, and becomes an income source for the regional budget. At the same time, transport corridor passing through the territory of a region can cause an overload of the transport and logistics network of urban agglomeration leading to the need for additional construction of bypass roads.

The importance of transport corridors in terms of ensuring sustainable development and their ambiguous (often negative effects from their functioning) impact on the environment led to the formation and development of the "green transport corridors" concept. Within the framework of this concept, it is assumed that participants in the green transport corridor, operating in different territories, will strive to find sustainable logistics solutions in order to both reduce costs and minimize the environment impact. Thus, the changes taking place in the modern economy and management force interest in the instruments and factors of sustainable development. In particular, this led to the UN formulating the Sustainable Development Goals (SDGs), and currently most countries and large organizations integrate them into their policies and strategies, and carefully monitor their progress in achieving these goals.

There is an opinion that a competent logistics policy can become a link for most sustainable development goals, both on the state part - in terms of creating a "playing field", and on the part of logistics services market participants - in terms of applying ESG criteria to assess their activities, implementing modern digital technologies, addressing global decarbonization issues, investing in "green logistics" to reduce the impact of negative external effects.[iv]

In modern conditions, traditional logistic links established using international transport corridors, on the one hand, are being seriously tested, and on the other hand, a new incentive for their development is being born. This process was initiated by the COVID-19 pandemia consequences, and the subsequent disruption of established supply chain links due to international political reasons accelerates this trend.

The transport complex activities are associated with environmental costs - negative externalities arising as a result of the construction of transport and warehouse infrastructure, as well as during the operation of transport systems (harmful emissions (for example, carbon dioxide emissions), energy consumption and physical impact on the environment).

The use of different transport modes has different effects on the environment. Studies show that road transport produces maximum carbon emissions. While rail transport has a minimal environmental impact.

At the same time, analysis of greenhouse gas emissions from various transport modes shows that land or sea transport are more promising in terms of reducing CO_2 emissions.

CO_2 Emissions by Transport Type[v]

Transport Type	**CO_2 Emissions**
Automobile internal transport: passenger, freight	80%
International shipping	9%
International aviation	4%
Other types	7%

Since logistics is an integral part of any production chain, logistics decarbonization actually implements the long-term ambition of society and the economy to reduce the GDP carbon intensity.

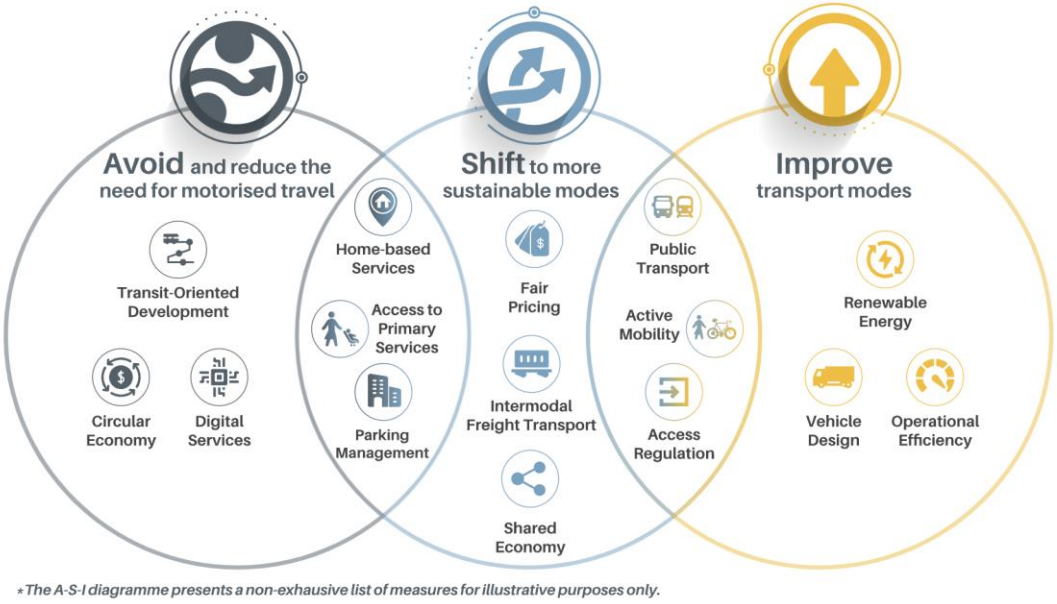
Thus, in order to decarbonize transport corridors, it makes sense for participants to pay attention to improving the quality of logistics services and the ability to reduce harmful emissions by establishing uniform restrictions (within one corridor) on customs clearance and improving logistics infrastructure to reduce energy consumption and harmful emissions.

It is worth to mention that formation of sustainable supply chains within transport corridors can have a dual effect. On the one hand, the spread of the "green" agenda to transport corridors improves the environment quality, reduces negative externalities and promotes long-term development of the territories involved in the formation of the logistics corridor. This contributes to the achievement of sustainable development goals.

On the other hand, this leads to increased costs in the short term and requires serious investments from both the state and the private sector. In particular, carbon footprint regulation and reduction of logistics energy intensity through appropriate taxes and/or customs duties (within the ITC) can decrease the competitiveness of a logistics corridor route, if users can choose an alternative.

With increasing environmental awareness and introduction of the "green agenda", sustainable logistics is inevitable requirement for a comprehensive assessment of the supply chains efficiency. And since transport corridors are an important part of them, the transport corridors functioning, as a single infrastructure, according to the "green" logistics "rules" becomes practically inevitable.

In this case, the state plays a decisive role in promoting the management and development of "green" logistics. However, reducing the burden on the environment from logistics activities requires joint work of the state and business. The Avoid-Shift-Improve system which has been at the centre of strategies to expand access to sustainable, low-carbon transport and mobility is applied in this area for over a decade.



«Avoid-Shift-Improve» System

Currently, in order to improve the international transport corridors efficiency, the issues of introducing Artificial Intelligence technologies into the process of logistics modeling are being actively considered. Thus, the AI use is quite capable of changing the operational logistics model to a more predictable one, at the same time today there are a number of issues to be addressed to accelerate the transport sector digitalization:

- insufficient competence of transport industry employees in the IT field;
- lack of funding for advanced technologies implementation;
- general low level of digital technologies development in the sphere;
- weakness of the regulatory and technical framework base.[vi]

Overview of International and Eurasian Transport Corridors One Belt One Road

In 2013, China launched the Belt and Road Initiative (BRI) aiming to improve links and deepen cooperation on transcontinental level. The scope of the Initiative is still under debate but it contains two main components, each of which involves significant infrastructure investment:

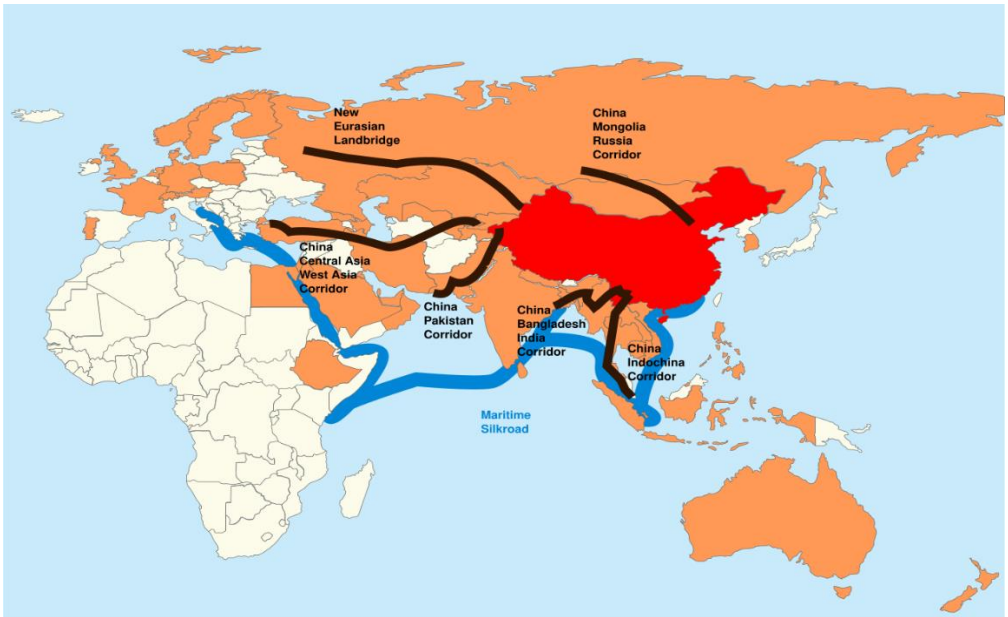
- Silk Road Economic Belt ("Belt");
- New Maritime Silk Road ("Road").

The land "Belt" connects China with Central and South Asia and further - with Europe, the maritime "Road" connects China with Southeast Asian countries, the Gulf countries, East and North Africa and further - with Europe.

More than 65 countries of the world are involved in the BRI functioning, the project covers 30% of the world's economic potential, 55% of the world's GDP, about 70% of the world's population and unites about 75% of the world's energy resources.

According to the concept, the BRI is based on five priority cooperation areas:

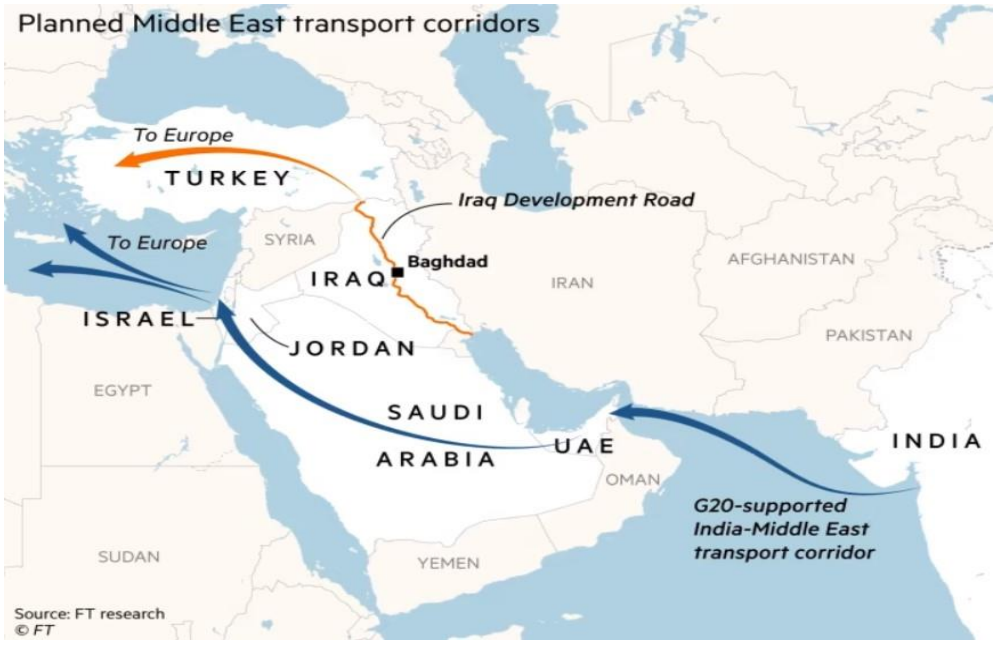
1. Policy coordination (promoting intergovernmental cooperation, multi-level intergovernmental mechanism for macropolicy exchange and communication);
2. Connection of structures and facilities (improving the relationship between infrastructure construction plans and technical standard systems);
3. Non-barrier trade (reducing investment and trade barriers, promoting regional economic integration);
4. Financial integration (coordination and cooperation in monetary policy, establishment of financial institutions);
5. People-to-people connections (cultural and academic exchange and dialogue, cooperation with the media).



India-Middle East-Europe

This initiative was first put forward in September 2023 on the sidelines of the G20 Summit which was held under the Indian presidency.

During the recent visit of Indian Prime Minister to the UAE, a framework agreement was signed to work together on the India-Middle East-Europe economic corridor project.



This large-scale project is designed to connect the railway lines and sea routes running from India to Europe via the UAE, Saudi Arabia, Jordan and Israel. It is expected that this will lead to accelerating and facilitating the goods transit from one continent to another. In general, this project may become India's response to China's "Belt and Road" initiative, which India and Western countries are cool about.

North-South

In September 2000, during the Second Eurasian Conference on Transport, the intergovernmental agreement on the North-South corridor establishment was signed in St. Petersburg. The participating countries were Russia, Iran and India. In May 2002, the protocol was signed on the corridor official opening.

The North-South International Transport Corridor connects St. Petersburg and Mumbai and includes only 14 countries, the total length of the route is about 7,200 km.

From 2022 to 2023, the total volume of shipments along the North-South ITC increased by approximately 18% - from 19.0 to 22.6 million tons.

CAREC Transport Corridors

The CAREC partnership includes Afghanistan, Azerbaijan, China, Georgia, Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan and Uzbekistan.

Most of the CAREC countries are located in the Central Asian region and are landlocked but have relatively good land connectivity to their major trading partners in Europe, Eastern and Central Asia.

CAREC member countries give priority to the investment projects and transport initiatives, focusing on multimodal connectivity, efficient road management and road safety. The CAREC corridor network includes six major, extensive roads, railways and logistic facilities.[vii]

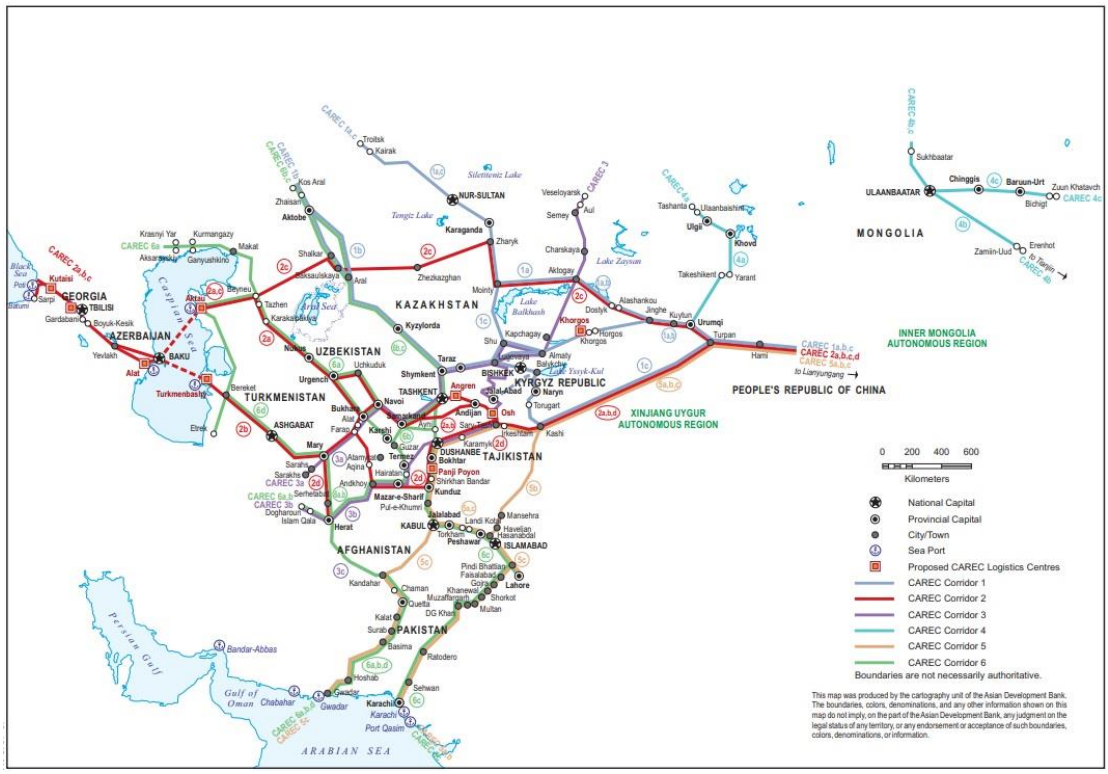
Among these corridors, there should be mentioned recently launched multimodal transport corridor "China - Kyrgyzstan - Uzbekistan - Afghanistan". By this, cargo arrives from China by road, then at the Osh station in Kyrgyzstan it is loaded into wagons and travels by rail through Uzbekistan. The implementation of this multimodal route became possible as a result of agreements reached during a four-party meeting of representatives of the railway administrations of Kyrgyzstan, Uzbekistan, Afghanistan with participation of the China International Logistics Company, held in September 2022 in Tashkent.

This railway will run along Kashgar - Torugart - Makmal - Jalalabad - Andijan route and will become the shortest land "shoulder" connecting China with the Central Asian region with subsequent access to the promising Trans-Afghan corridor and ensuring the goods transit to significant markets of the countries of South Asia and the Middle East.

At the same time, following negotiations of the governments of Uzbekistan, Afghanistan and Pakistan, the Roadmap was approved for the construction of the Mazar-i-Sharif - Kabul -

Peshawar railway with a length of about 600 km. According to the expert estimates, the full implementation of this ITC will reduce the time for transporting goods from Uzbekistan to Pakistan from 30-35 to 10-15 days, as well as reduce transportation costs between Russia and Pakistan by 15-20%, and between the countries of Central Asia with Pakistan - by 30-35%.

These transport corridors support powerful transport and logistics route from the eastern ports of China, through Central Asia to South Asia, to such ports as Karachi, Gwadar, Bandar Abbas and Chabahar.



Landlocked Countries

Another relevant factor proving the need for a more in-depth study of the methodology for the ITC formation and the transport links improvement between the countries is the large number of landlocked countries. As of 2023, there are 44 countries that do not border the world's oceans or seas.

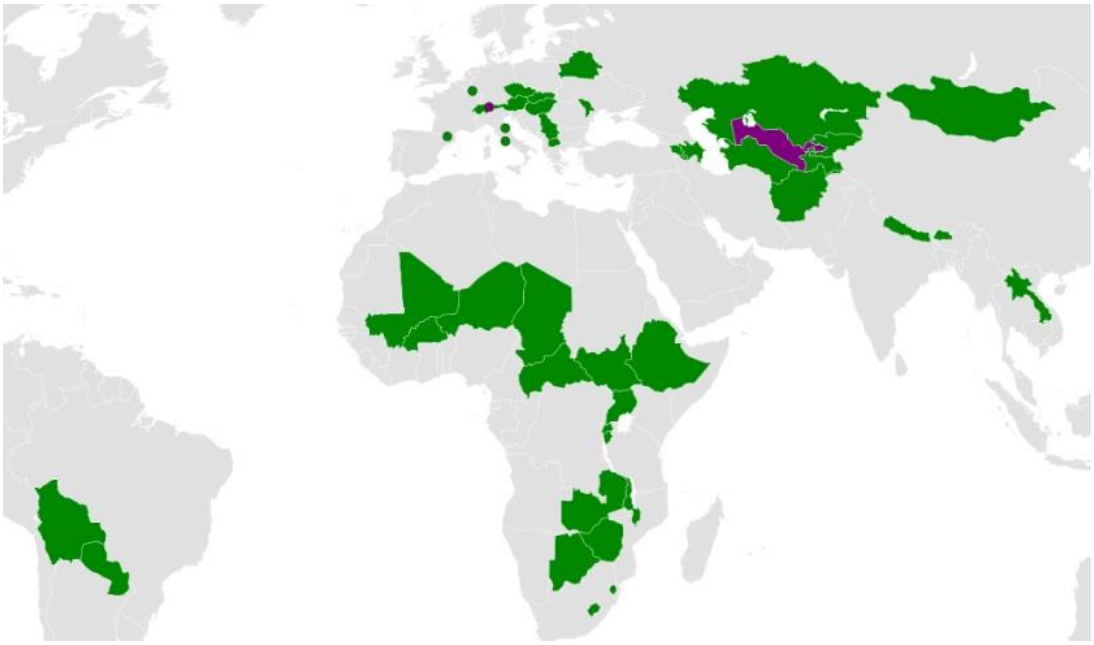
The largest number of such countries are in Africa - 16 and Europe - 14. In Asia, 12 countries are landlocked, in South America - 2 countries. There are also two countries that are landlocked and border exclusively with countries not having access to the World Ocean - these are Uzbekistan and Liechtenstein.

Adam Smith in his work "The Wealth of Nations" noted that access to the sea and, accordingly, to trade routes is of great importance for the economic performance of states. Over time, the land transport development has reduced the advantages of coastal states compared to the

landlocked states. However, maritime transport still plays a central role in the world trade, and being landlocked therefore creates certain problems.

According to the international law (UN Convention in the Law of the Sea 1982, Part 10), the landlocked states have the right of access to the sea. This right is implemented by concluding special agreements between interested landlocked states and transit states.

At the same time, it is natural that these countries have high transportation costs, shipment delays and other factors limiting opportunities for trade development.



CONCLUSION

The international transport corridors development contributes not only to economic growth, but also to maintaining political stability in the region. The longer transport corridor functions, the more stable and strong economic ties built around it become.

Mutual investments in transport routes and infrastructure projects are the significant guarantee for maintaining friendly political relations between the participants in such projects. No one wants to lose the funds already invested and change established supply chains without good reason. The international transport corridors development, increase in the trade and investment volume is a kind of indicator of strengthening not only economic, but also political relations.

The ITC is a necessary component of the functioning of the real sectors of the economy. For sustainable and predictable economic growth, it is important to rely primarily on the sectors of the real economy and industrial production. The crises of the recent years, especially COVID-19 pandemic, have clearly demonstrated that the service sector quickly "collapses" in case of any shocks and largely ceases to be in demand. Therefore, the value of the practical projects in

the real sector of the economy is substantially higher. Sustainable supply chains, infrastructure development and effective regulation are the key factors supporting the real economy.

It is becoming increasingly clear that the transport and logistics geopolitics is as important component of the states' political doctrine as geopolitics and geoeconomics. At the same time, logistics is almost a key factor in economic feasibility for making certain economic and political decisions, and international transport corridors are becoming important drivers of integration development.

We believe that all transcontinental and regional international transport corridors that have been launched should have their logical conclusion, thereby establishing the expanded, multi-variant, highly competitive network of transit of goods and cargo along the "East-West", "North-South" routes and back. In this way, favorable conditions will be created for the rapid growth of external and internal trade turnover on a global scale. At the same time, we believe that it is extremely important to abandon the politicization of the processes of selection, priority and setting artificial barriers for one or another international transport corridor.

RECOMMENDATIONS

Taking Comprehensive Measures

- simplification of transit and trade procedures. Transit and trade play a key role in economic interaction between countries. Simplifying these processes means reducing barriers to the movement of goods and services between nations. This includes reducing customs duties and administrative formalities, as well as improving transportation procedures for goods crossing borders. When countries make transit more convenient and faster, it promotes trade development, as it reduces costs for businesses and improves mutual cooperation.
- integration of regional economies, including landlocked countries. Countries without access to the sea often face difficulties in international trade due to their dependence on transit countries for delivering their goods to ports and further to other regions. Simplifying transit can help strengthen cooperation with neighboring countries, creating conditions for better integration of their economies into the regional and global trade system.
- transport flows through neighboring countries on mutually agreed terms. For countries located in the same region, the ability to move goods through neighboring states on mutually beneficial terms can significantly increase trade efficiency. This will create more stable and predictable supply channels and reduce transportation time and costs.
- economic diversification and investment attraction. Simplifying transit can open new opportunities for countries that previously struggled to participate effectively in international trade. This promotes economic diversification, meaning the expansion of sectors that can develop, and it also attracts foreign investment. For example, improving infrastructure can make these countries more attractive to international companies, creating new jobs and boosting economic growth.
- integration into global trade networks. The development of transport networks and logistics infrastructure allows countries to become part of broader global trade flows. The better a country integrates into these networks, the easier it will be for them to trade

with other nations and participate in global production chains. This also benefits the economy, as countries will be able to export their products more effectively and gain access to new markets.

- positive impact on global trade. When transport and logistics networks are improved in one or more countries, it has a positive effect on global trade as a whole. This is because the global economy functions as a single system, and improving one part of it can facilitate the movement of goods worldwide. Ultimately, this can lead to lower prices, better product quality, and greater economic stability in countries.

Introduction of The Unified Electronic Transport Bill

The transport waybill is a key document that confirms the conclusion of a transport contract and is used to identify the shipper and consignee. Implementing the electronic waybill involves transitioning from the traditional paper document to a digital version that will be stored, processed, and transmitted electronically. This solution will significantly simplify and accelerate processes in the transportation sector.

Feasibility of implementation among the countries participating in the International Transport Corridor (ITC) within one region. The International Transport Corridor (ITC) is a network of transport routes connecting several countries, providing opportunities for more efficient movement of goods. The implementation of electronic waybills is particularly advisable within such international corridors, as it ensures standardization and simplifies processes between countries, reducing administrative barriers at borders and increasing overall transportation efficiency.

Bilateral or multilateral basis. The implementation of electronic waybills can be carried out on either a bilateral or multilateral basis. This means that countries can agree on the mutual recognition and use of electronic waybills in international transport. Bilateral agreements involve cooperation between two countries, while multilateral agreements involve several countries, offering broader opportunities for efficient operation.

Acceleration of administrative work. Electronic waybills significantly reduce the time needed for document processing, as they can be created, transmitted, and processed instantly in electronic form. This will reduce the burden on administrative bodies and allow for faster document handling, thereby speeding up the entire transportation process.

Acceleration of invoicing. Electronic waybills can be integrated with billing systems, allowing for the automatic generation and sending of invoices after the completion of transportation. This will simplify financial processes and reduce the number of errors associated with manual data entry.

Improved transparency and data accuracy. Electronic waybills enhance data accuracy, as information in these documents is entered automatically into the system, reducing the chances of human error. Additionally, all data about the shipment will be available in real time, which increases transparency and allows for more accurate tracking of shipments. Ensuring control and tracking of shipments in real time. With electronic waybills, it is possible to track the location and status of the goods at any time. This is made possible by integrating modern

technologies, such as GPS systems or RFID, which allow real-time monitoring of the goods' movement. Such control helps to quickly respond to any delays or issues with the shipment.

Infrastructure Development

Infrastructure development plays a key role in overcoming the geographical and structural challenges faced by the countries participating in International Transport Corridors (ITC). Geographical difficulties may include natural barriers such as mountains, rivers, or deserts, which complicate the transportation of goods. Structural limitations may relate to outdated transport networks, insufficient logistics infrastructure, and a lack of integration between various modes of transport. Modern and efficient infrastructure projects can minimize the impact of these problems, ensuring faster and more economical transportation of goods.

Infrastructure includes roads, railways, air and sea routes, as well as all related elements like ports, terminals, warehouses, and traffic management systems. Developed infrastructure reduces transport costs and transit time, significantly increasing the competitiveness of countries. When transportation routes and logistics systems are well-designed and maintained, the process of moving goods between countries becomes faster and less costly. This is especially important for countries involved in international transport corridors, where it is necessary to coordinate and synchronize all modes of transport (road, rail, air). Reducing Transport Costs and Transit Time. When a country's infrastructure is improved, it directly affects transportation costs. Modern and high-quality roads, new rail routes, and efficient freight systems reduce travel time and minimize unnecessary costs. This is crucial for countries with high volumes of foreign trade, where every day of delay or additional costs can significantly impact the price and competitiveness of products on global markets. Reducing transit time also helps improve trade flow and lowers logistics costs for companies.

Investing in Infrastructure Development and Building Reliable Transport Networks. One of the most important factors for success is the presence of sufficient investment in infrastructure development. For transportation networks to be reliable and able to effectively serve international shipments, regular investments are required for their modernization and maintenance. This includes both repairing and upgrading existing routes and facilities as well as constructing new highways, ports, and terminals. Countries that prioritize these investments become more attractive to international partners and investors, strengthening their economies and creating opportunities for the development of new sectors.

Efficient Movement of Raw Materials and Finished Goods to Global Markets. Developed infrastructure not only boosts the domestic economy but also connects the country to global markets. This is particularly important for countries that export raw materials such as oil, gas, metals, and for those engaged in the production of finished goods. Well-established transport networks and logistics chains allow goods to be delivered to international markets with minimal delays and costs. This also increases the country's attractiveness to foreign investors who wish to participate in production and trade projects.

Increasing Value-Added and Stimulating Growth in New Manufacturing Sectors. Infrastructure development contributes to creating new manufacturing opportunities. The ease of transporting raw materials and finished products enables the development of new industries

and the creation of more complex production chains. This, in turn, leads to an increase in value-added, as products become more competitive and accessible to consumers. For example, if countries can quickly and cheaply transport their goods, it can foster growth in sectors such as automotive manufacturing, agriculture, electronics, and other high-tech industries.

Building a Resilient and Climate-adapted Economy

Building a climate-resilient economy means preparing a country or region to adapt to changing climate conditions and minimizing the negative impact of natural disasters such as floods, hurricanes, droughts, or extreme cold. The economy must be prepared for such changes, and the infrastructure should be designed to withstand extreme weather events. This includes the construction of climate-resilient structures, improving environmental sustainability in cities and regions, as well as innovations in energy efficiency and sustainable use of natural resources. Readiness and Ability to Respond to Increasing Natural Disasters. The frequency and intensity of natural disasters are increasing each year due to global climate change. These can include severe hurricanes, flooding, droughts, or other extreme weather events. Countries and regions must not only be prepared to prevent such disasters but also to respond quickly when they occur. This requires effective monitoring systems, early warning mechanisms, and well-prepared emergency response services that can minimize the consequences for people and the economy. It is also important to develop strategies aimed at reducing the vulnerability of the population and economic assets.

Building Climate-Resilient Roads, Bridges, and Other Infrastructure Components. One of the key aspects of climate adaptation is the creation of infrastructure that can withstand extreme weather conditions. For example, roads and bridges need to be designed and constructed to endure potential floods, heavy rains, snowstorms, and other natural phenomena typical for a given region. This includes using materials and technologies that ensure durability and safety even under intense environmental pressures. In some cases, it may require redirecting water flows, utilizing new types of pavement, improving drainage systems, and implementing other engineering solutions.

Reducing Disruptions in Trade and Economic Activity. The economic consequences of natural disasters can be massive. Destruction of transport routes, ports, factories, and other facilities can lead to prolonged disruptions in trade and economic activities. To prevent such disruptions, infrastructure must be resilient to extreme weather and natural disasters. For example, alternative transport routes, restoration of key facilities, systems that allow for rapid reconstruction of damaged infrastructure, as well as insurance and business support systems help minimize economic losses from natural disasters.

Timely Financial Support from Various Sources

For the successful development of International Transport Corridors (ITC), it is important to ensure regular and timely financial support. Funding for such projects can come from various sources, and each of these sources plays a crucial role in supporting national and international initiatives.

- Domestic Revenues – These are financial resources generated within the country, such as national budgets, tax revenues, and other forms of internal income, which can be directed towards infrastructure development and transport projects. It is important for

domestic resources to be used effectively and sustainably to support the long-term development of ITCs.

- International Aid – Countries involved in ITCs can receive financial support from international organizations and other donor countries. This assistance can be provided in the form of grants or subsidies for specific projects, such as building roads, bridges, ports, railways, and other infrastructure.
- Loans – Loans provided by international financial institutions or private banks can be an essential tool for financing large infrastructure projects. It is important that loan conditions are reasonable and that the share of borrowed funds in the total financing is balanced, so as not to create excessive debt burdens on the countries.

Bridging the Funding Gaps. During the implementation of ITC projects, funding gaps often arise. This can be due to the high cost of infrastructure construction, difficulties in attracting investments, or limited access to international credit. Closing such funding gaps is a key element of successful project execution. To address this issue, it is necessary to attract additional funds from various sources and to manage financial flows effectively. This includes: Attracting private investors who may be interested in infrastructure development;

- Involving international organizations that offer flexible funding mechanisms, such as public-private partnership support;
- Developing flexible financial instruments that can minimize risks and stimulate investment in ITCs.

Ensuring the Implementation of Key ITC Projects. To ensure the successful implementation of ITC projects, it is necessary not only to attract financing but also to create an effective management mechanism for these projects. This involves:

- Clear planning and organization of financing for different project phases;
- Developing monitoring and control systems for expenditures to ensure that resources are used efficiently;
- Developing strategies to stimulate private and foreign investment in transport infrastructure.
- Additionally, for successful project implementation, financial support must be directed not only at the construction of facilities but also at their long-term maintenance, operation, and modernization. This requires ongoing funding and a strategic approach to the development of transport infrastructure.

Creating a Broad Network of Partner Countries and ITC Participants

Creating a network of partner countries and participants in ITCs is a crucial part of establishing conditions for growth and integration into the global economy. This network can include both neighboring countries and more distant nations united by common interests in the transportation of goods and services.

The development of international cooperation within ITCs:

- Facilitating Integration into the Global Economy – By creating efficient transport corridors, countries can improve their connection to global markets, opening up new opportunities for trade, investment, and economic growth.

- Strengthening Regional and International Cooperation – The development of ITCs promotes better understanding and collaboration between countries, which enhances political and economic ties.
- Sharing Knowledge and Best Practices – ITC participants can exchange knowledge, experience, and innovative solutions, which improves project efficiency and the quality of infrastructure.

Creating Conditions for Growth and Integration into the Global Economy

Through ITC development, countries can ensure easier access to international markets and stimulate the growth of new industries. Stable and efficient transport networks open up opportunities for:

- Accelerating Economic Growth – Improved transport infrastructure reduces transit costs and delivery times, making goods more competitive in global markets.
- Attracting Foreign Investments – Developed and secure transport corridors are attractive to foreign investors, who see them as opportunities for successful and profitable investments.
- Developing New Sectors of the Economy – Efficient transport infrastructure supports the growth of new manufacturing and logistics sectors, contributing to job creation and the development of technology.

In Order to Reduce the Carbon Footprint of the ITC Activities, the Following is Recommended

- switching to less carbon-intensive transport modes, developing freight transportation by waterways, developing electrified road and rail transportation;
- modernizing the vehicles design, increasing the energy efficiency of various types of freight and passenger vehicles and switching to low-carbon energy sources during their operation.

The implementation of the above measures will ultimately:

- ensure the development of a modern and efficient transport infrastructure accelerating the goods movement and reducing transport costs in the economies of the ITC member countries;
- increase the transport services accessibility for the population;
- ensure the competitiveness of transport systems and realize the country's transit potential;
- increase the comprehensive safety and sustainability of the transport system;
- improve the investment climate and development of market relations in the region.

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