



Eurasian Development Bank

# The International North–South Transport Corridor: Promoting Eurasia’s Intra- and Transcontinental Connectivity

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# THE INTERNATIONAL NORTH-SOUTH TRANSPORT CORRIDOR: PROMOTING EURASIA'S INTRA- AND TRANSCONTINENTAL CONNECTIVITY

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The launch of the International North-South Transport Corridor (INSTC) and its connection to latitudinal transport corridors will enable the creation of a single Eurasian transport framework. Significantly shorter delivery time is the key advantage that the INSTC will have relative to the other transport routes. This report looks at potential INSTC freight traffic, which is estimated at 14.6–24.7 million tonnes per year. The gravity model points to a huge trade expansion potential, subject to achievement of “seamless” transport routes improving the quality of the transport infrastructure and digitisation of the international corridor. With a global drive for decarbonisation under way, the authors also assess the INSTC carbon footprint, which is comparable with that of deep-sea maritime transport. In the future, the transport corridor may become an economic development corridor for the EAEU member states, through expansion of production cooperation and build-up of logistical chains with the countries along the INSTC.

**Keywords:** international transport corridors, transport infrastructure, international trade, EAEU, Eurasia.

**JEL:** F15, F17, L92, O19, R11, R41.

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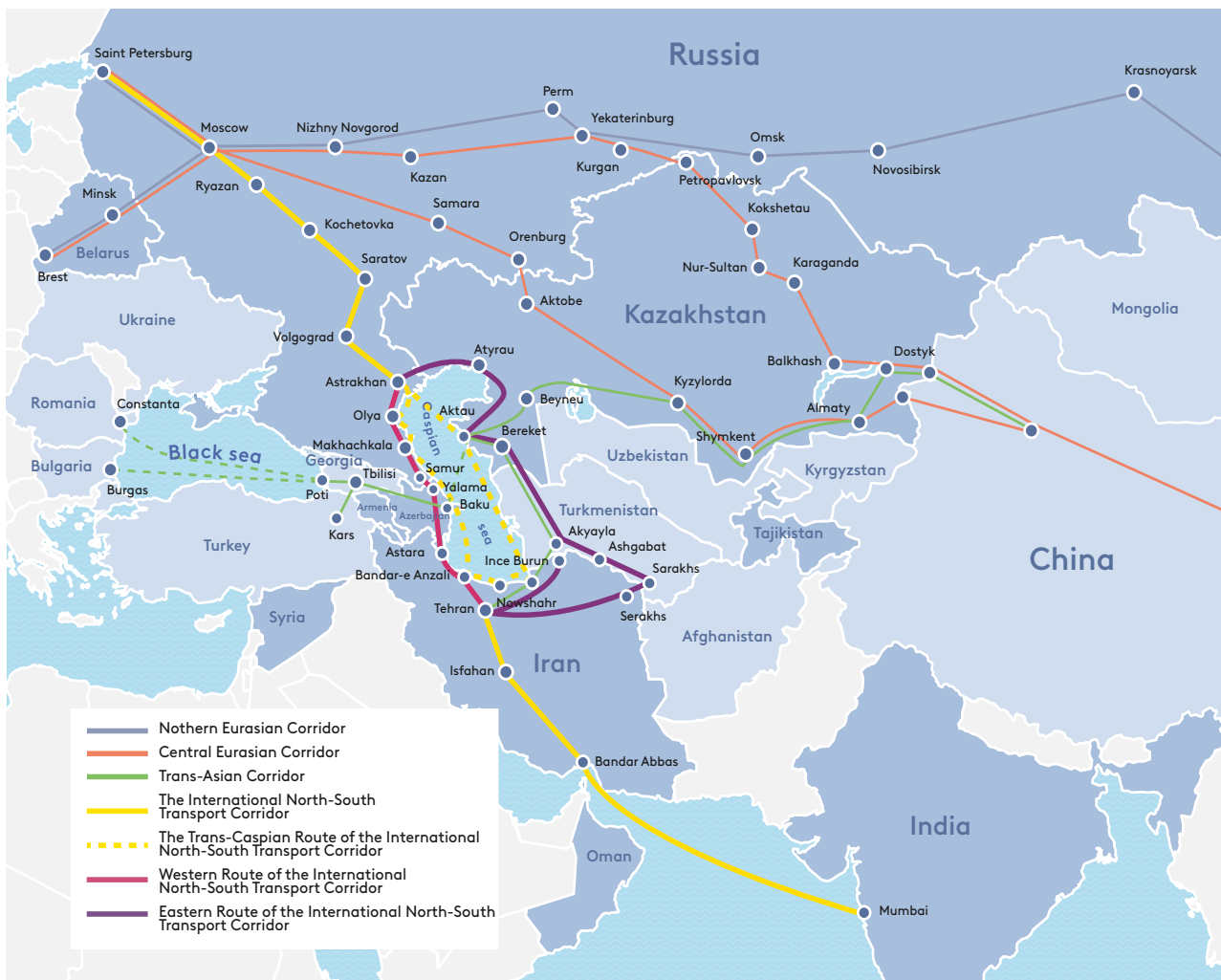
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# Summary

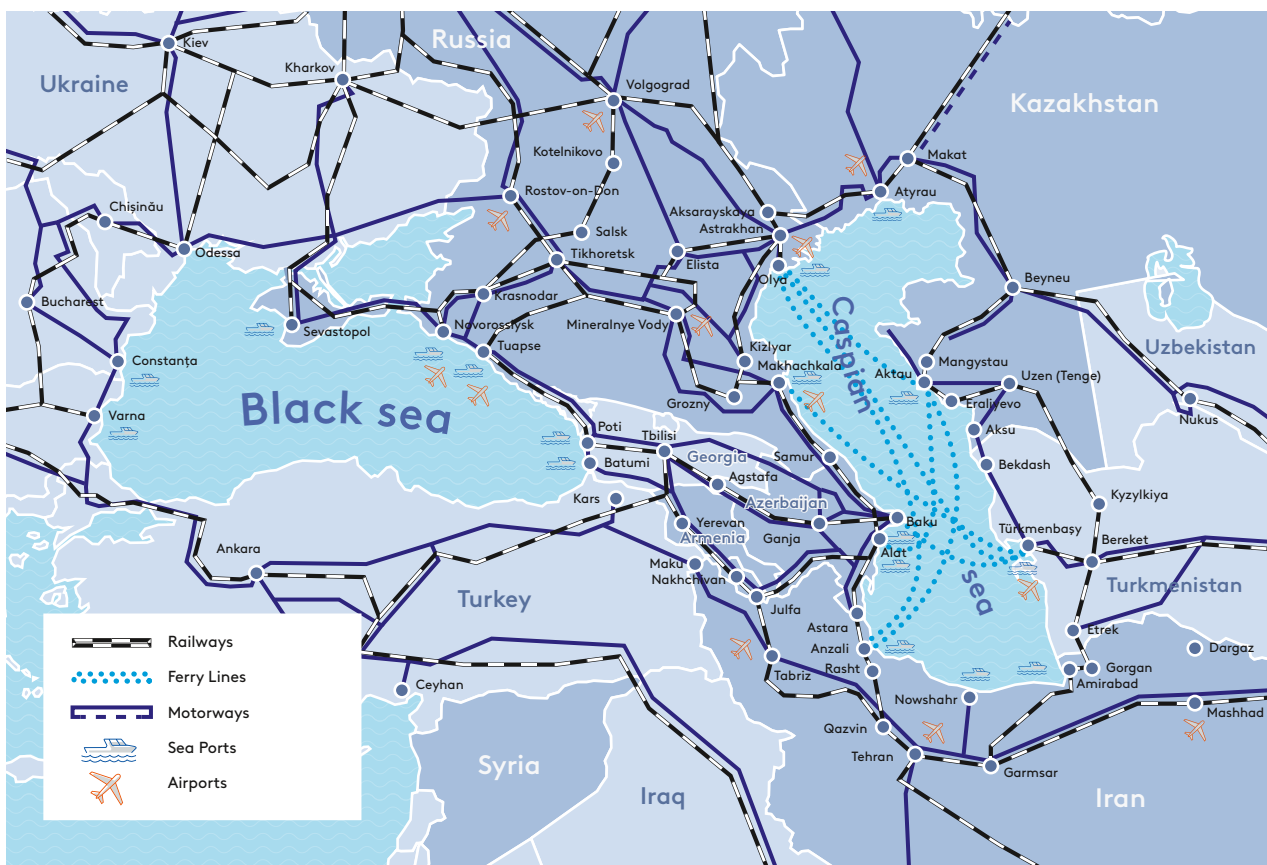
The multimodal International North–South Transport Corridor connects the northwestern part of the Eurasian Economic Union (EAEU) and the Nordic countries with the countries of Central Asia (CA), the Persian Gulf, and the Indian Ocean (see Figure A). The corridor includes railway, road, and inland water transport infrastructure, Caspian Sea ports (Astrakhan, Olya, Makhachkala, Baku/Alat, Aktau/Kuryk, Türkmenbasy, Anzali, Nowshahr, Amirabad), Persian Gulf ports (Bandar Abbas and Chabahar), automobile crossing points (ACPs), railway crossing points, and international airports. The legal basis underlying the creation of the North–South corridor was provided by the signing by three countries (the Republic of India, the Islamic Republic of Iran, and the Russian Federation) of the Inter-Governmental Agreement on the International North–South Transport Corridor at the Second International Euro-Asian Conference on Transport (Saint Petersburg, Russian Federation) on 12 September 2000.

Over the last several years, the **key factors** that are increasing the importance of transport routes along the North–South axis are **active interaction of the EAEU with India, Iran, and other countries in the southern part of the corridor, within the scope of the Greater Eurasia concept,**

**Figure A. INSTC – Meridional Corridor of the Eurasian Transport Framework**



Source: EDB.

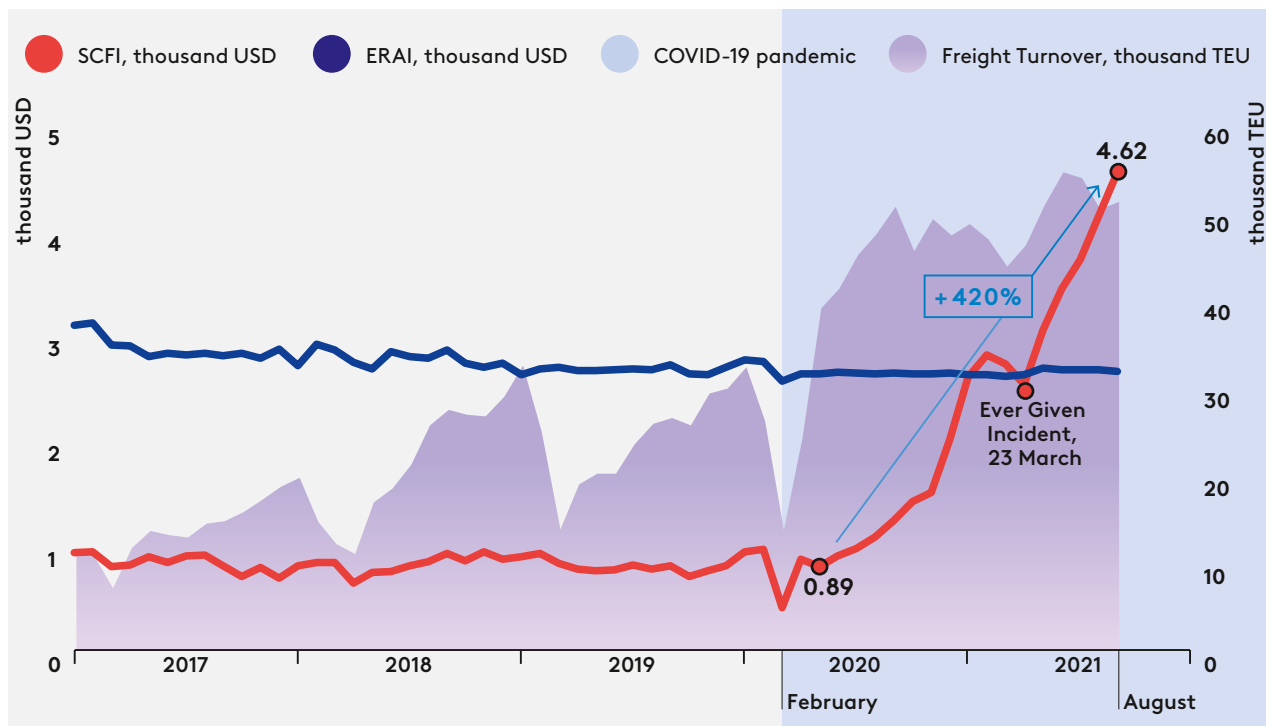
**Figure B. INSTC Transport Infrastructure Facilities in the Caspian Region**

Source: EDB.

as well as the increasingly intensive involvement of Azerbaijan, Kazakhstan, Turkmenistan, and other countries that are along with the INSTC in the expansion of transit and multimodal corridors in the Caspian region. For example, the new 900-km Zhanaozen–Gyzylgaya–Bereket–Etrek–Gorgan railway line running from north to south and connecting Kazakhstan, Turkmenistan, and Iran was put in operation in December 2014. An Interim Agreement leading to formation of a Free Trade Area (FTA) was signed by the EAEU and Iran in May 2018. Negotiations on the execution of an FTA agreement are under way between the EAEU and India. Realisation of the trade potential of the EAEU, Central Asia, and countries in the southern part of the INSTC is an important prerequisite for the continued development of the corridor.

**The unique INSTC route makes it possible to connect it to other global and regional east-west latitudinal transport corridors (see Figure B).** The INSTC is an important component of a network of latitudinal and meridional trade routes, including those to be built as part of the Chinese One Belt One Road (OBOR) initiative, and its development directly facilitates emergence of a macro-regional transport and logistics system (“**Eurasian transport framework**”) which, in turn, underpins expansion of trade and investment partnerships within Eurasia, and may become a driver of Greater Eurasia. Construction of that framework addresses the need to accommodate the long-term economic interests of many countries of the Eurasian continent (especially landlocked countries), reduces the negative economic impact of large distances and high transport costs, helps Central Eurasia to get rid of its “continental curse” by placing

**Figure C. SCFI\* and ERAI\*\* Quotes and Volume of Europe–China/China–Europe Rail Container Traffic**



Note: \* SCFI – Shanghai Containerised Freight Index; \*\* ERAI – Eurasian Rail Alliance Index.

Source: Thomson Reuters (2021), ERAI (2021).

it at the intersection of transport corridors and, ultimately, facilitates continental cooperation and regional integration.

The INSTC should facilitate finding optimal routes to deliver goods from the countries in the southern part of the corridor to Central, Western, and Northern Europe (and back), and also in switching freight traffic from the sea routes running through the Suez Canal and Gibraltar to land and multimodal corridors. The relevance of a multimodal North–South corridor was reaffirmed during the COVID-19 pandemic, when a major supply chain disruption provoked extreme volatility of maritime freight rates (see Figure C). A new upsurge of those rates (in stark contrast to the continued stability of end-to-end railway rates) was recorded after the Suez Canal obstruction on 23 March 2021, when the Ever Given container ship blocked all traffic between the Red Sea and the Mediterranean Sea, which caused a global failure to meet cargo delivery deadlines, aggravated the existing shortage of containers, proliferated uncertainties related to the operation of freight logistical chains and, accordingly, boosted demand for railway transport services in the Eurasian continent, highlighting the need to set up an additional freight channel. With that in mind, stakeholder countries can regard the INSTC as an alternative channel and necessary **insurance that will secure uninterrupted trade** between Asia and Europe.

The main advantage of the INSTC compared to the other routes, including the sea route via the Suez Canal, is the **significant reduction** of cargo **delivery times**. For example, it takes **30 to 45 days** to deliver cargo from Mumbai to Saint Petersburg by the traditional route through the Suez Canal, while INSTC land route delivery times may vary from **15 to 24 days**. Moreover, using the Eastern route of the corridor that runs through Kazakhstan and Turkmenistan

can reduce delivery times to **15–18 days**, and they are set to become even shorter after the commissioning of the Astarā–Rasht railway. Reduced delivery times are critical for many products that may be transported through the corridor, including food, textiles, household appliances, consumer electronics, etc. Higher capital turnover rates (lower in-transit cargo costs) are critical for manufacturers of expensive goods.

While the use of **INSTC transport routes enables a reduction of cargo delivery times by at least 25%**, the associated freight charges are not among the corridor’s competitive advantages. Despite the fast delivery, they remain relatively high. The average railway tariff charged for delivery of cargo from India/Pakistan/Iran/Oman to Europe is USD 3,500. The rate charged by JSC RZhD Logistika for the transportation of a twenty-foot equivalent unit via the INSTC from the port of Nhava Sheva (India) to the village of Vorsino (Kaluga Region, Russia<sup>1</sup>), currently USD 2,650 (assuming a round trip), can be used as a benchmark. By comparison, before the COVID-19 pandemic, maritime freight rates charged for delivery of similar cargoes through the Suez Canal were about half that, ranging from USD 1,000 to USD 1,200. However, in practical terms, development of transport routes does not always depend on availability of lower rates. **The key is the combination of stable end-to-end freight rates and short delivery times**, which assures the economic viability of the INSTC.

The **aggregate potential INSTC container freight traffic, including all three main routes and all modes of transport, may be as high as 325,000–662,000 TEU (5.9–11.9 mln tonnes) by 2030**, depending on the scenario (see Figure D). Synergies arising from interlinking the INSTC and the Eurasian east-west latitudinal transport corridors might be equivalent to 127,000–246,000 TEU (2.3–4.4 million tonnes), or about **40% of total potential** container freight traffic (see Figure E). Subject to the current geographical and commodity structure of foreign trade flows between the countries along with the corridor, an increase of freight traffic from north to south appears to be more likely. The aggregate railway container traffic by 2030 is projected at 9–18 pairs of container trains per day. That is well within the transport capacity of the corridor’s single-track railway lines (up to 24 pairs per day).

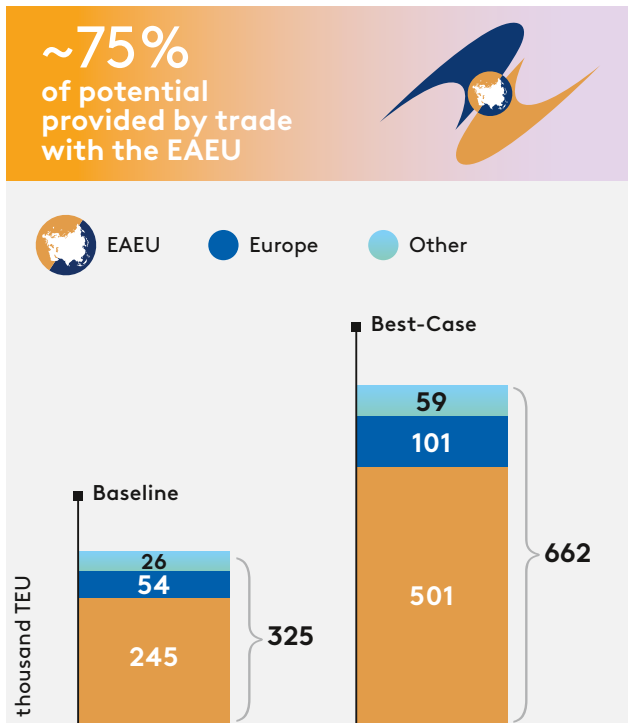
**Expansion of INSTC container freight traffic is of considerable interest to the EAEU member states.** By 2030, incremental freight traffic between them and the countries of South Asia and the Persian Gulf may amount to 245,000–501,000 TEU (4.4–9.0 mln tonnes), or about 75% of total potential container traffic (see Figure D). The main contribution to potential container traffic can be provided by the freight flows between the EAEU on the one hand and Azerbaijan, Iran, India, and Pakistan on the other. Interlinking the INSTC and the Baku–Tbilisi–Kars (BTK) latitudinal railway route can also have a significant favourable impact on the EAEU member states. That connection will enable expansion of railway container traffic between the EAEU, Georgia, and Turkey.

Currently the **main INSTC product categories** suitable for containerisation in all corresponding traded pairs, including non-traditional product categories, are as follows: Food Products (excluding Grain and Bulk Oil) with an aggregate potential of 69,000–164,000 TEU in 2030; Metals (Ferrous and Non-Ferrous Metals, Metal Products) with an aggregate potential of 54,000–113,000 TEU in 2030; Wood, Wood Products, and Paper with an aggregate potential of 31,000–68,000 TEU in 2030; Machinery and Equipment with an aggregate potential of 27,000–60,000 TEU in 2030;

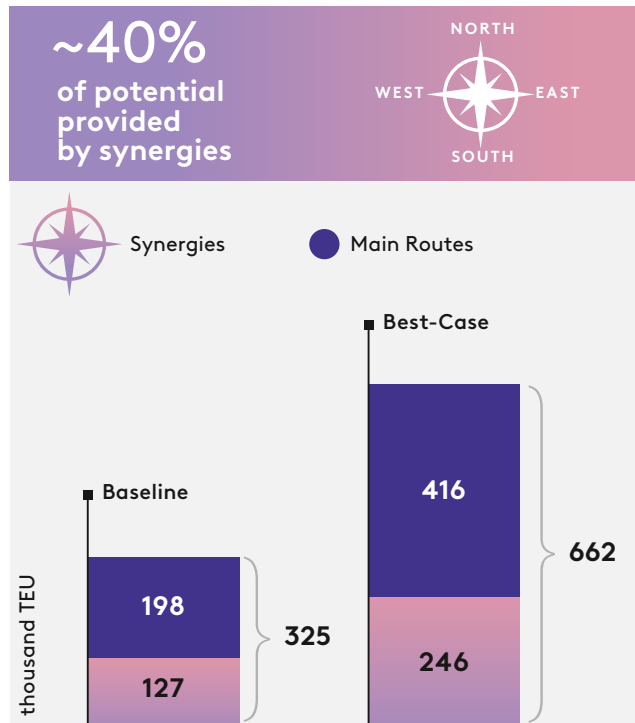
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<sup>1</sup> Vorsino is currently the only INSTC destination where transport and logistics operators can use fixed freight rates.

**Figure D. Potential Container Traffic Through the Key INSTC Routes in 2030 (thousand TEU)**



**Figure E. Potential Synergies in the INSTC Container Traffic Structure in 2030 (thousand TEU)**



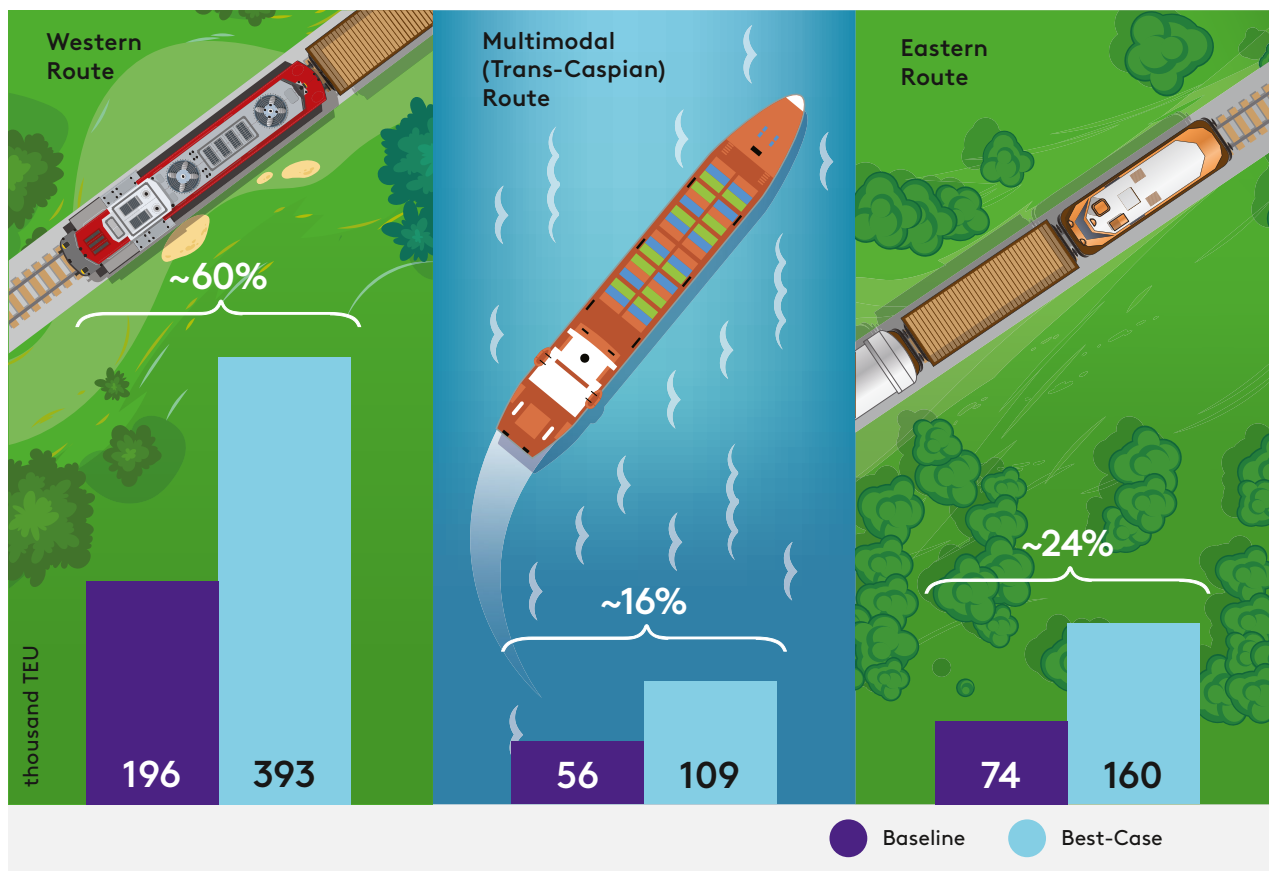
Mineral Fertilisers with an aggregate potential of 16,000–34,000 TEU in 2030; Textiles, Textile Products, and Footwear with an aggregate potential of 15,000–24,000 TEU in 2030.

**Grain is classified under a separate category** and, in terms of freight traffic, is currently the main product delivered through the INSTC. It is projected that by 2030 the INSTC grain traffic may reach 8.7–12.8 mln tonnes, and will continue to exceed the potential container freight traffic generated by all other product categories combined (5.9–11.9 mln tonnes). As a result, **by 2030 the aggregate potential INSTC freight traffic**, including the two types of product categories (containerised and non-containerised cargo), is expected to reach **14.6–24.7 mln tonnes** (see Figure G).

**All three INSTC routes are important for realisation of the transit transport potential.** However, the bulk of that potential is associated with two railway routes — the Western Route and the Eastern Route (see Figure F). Their shares in total potential freight traffic are about 60% and 24%, respectively. The critical role of railway transport in INSTC development is illustrated by the “mono-modality” of the corridor currently observable in some of its sections, primarily because railway service in the Caspian region is **more developed**.

**The effectiveness of railway development is supported by estimates of the effects of the gravity model** showing that improving the quality of railway infrastructure has the greatest impact on promoting trade between the countries along with the international North–South transport corridor, compared to other modes of transport. Thus, it is expected that, if the quality of the railway infrastructure improves by 0.1 points, the average increase in foreign trade volume will be 5.8%, all other things being equal. **Railway transport has a minimal carbon footprint**, which is an important competitive advantage for the purposes of INSTC freight carriage. As

**Figure F. Structure of INSTC Container Freight Traffic by Key Routes, 2030 (thousand TEU)**



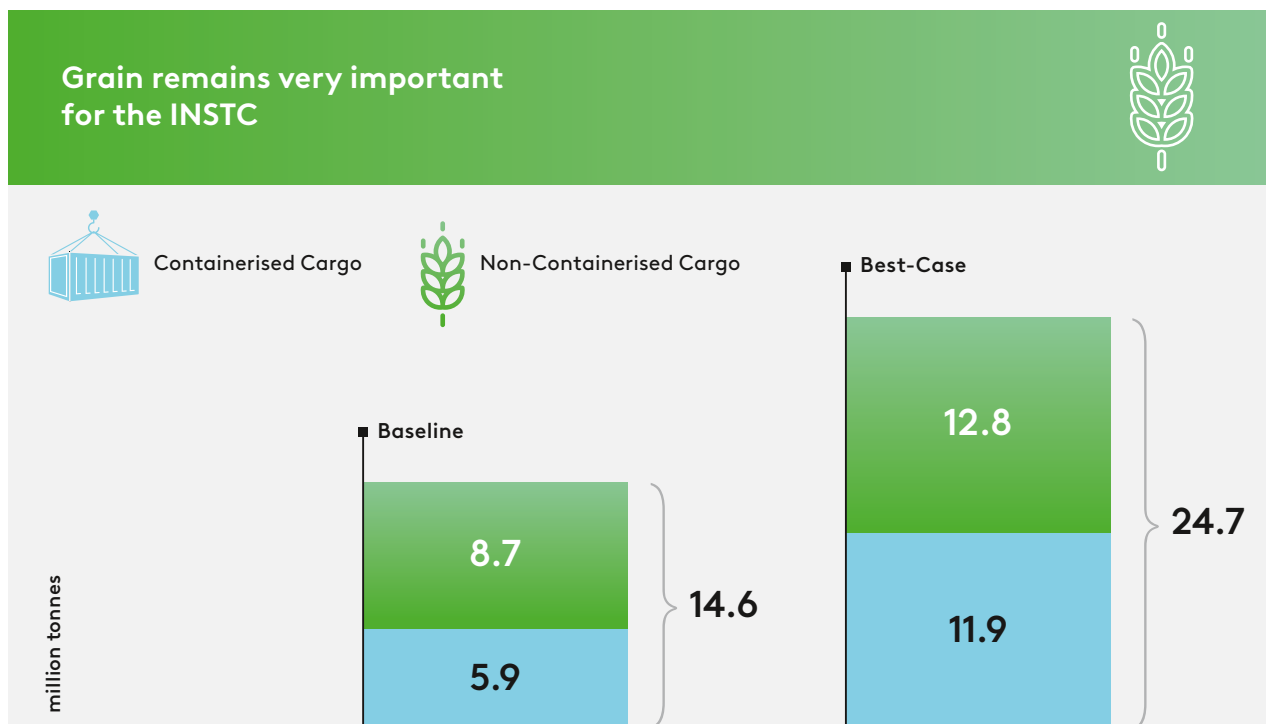
Source: Authors' calculations.

container traffic is switched from maritime transport to railway transport using the INSTC, greenhouse gas emissions may decrease by at least 25%. As with the East–West transport corridor, development of the INSTC shows that railway combined with road freight traffic will be the key driver of expansion of Eurasian land route transit potential.

**The development potential of the multimodal (trans-Caspian) route is lower at this time than that of the land routes.** The water transport infrastructure presents a number of bottlenecks, such as the dimensions of the Volga–Caspian Sea Canal, and accumulation of sediment. At the same time, one of the development objectives of the INSTC is its transformation into a fully functional multimodal corridor, where mono-modal sections are integrated with sea lanes connecting Iranian, Indian, Pakistani, and other ports. Another task is to increase the load of the multimodal (trans-Caspian) route of the INSTC, thus enabling it to attract international freight traffic, including containerised traffic, to the Volga water transport route.

Potential INSTC road and inland water freight traffic is much lower than the potential railway freight traffic, and is expected to reach 45,000–50,000 TEU (0.8–0.9 mln tonnes) and 10,000–20,000 TEU (0.2–0.4 mln tonnes), respectively, by 2030, depending on the scenario. Road transport is indispensable for small and medium-sized enterprises interested in delivery of small cargoes. The Islamic Republic of Iran is the key INSTC country for the purposes of expansion of international road freight traffic. Development of inland water transport relies primarily

**Figure G. Projected Aggregate Potential Freight Traffic on INSTC Routes in 2030 (million tonnes)**



Source: Authors' calculations.

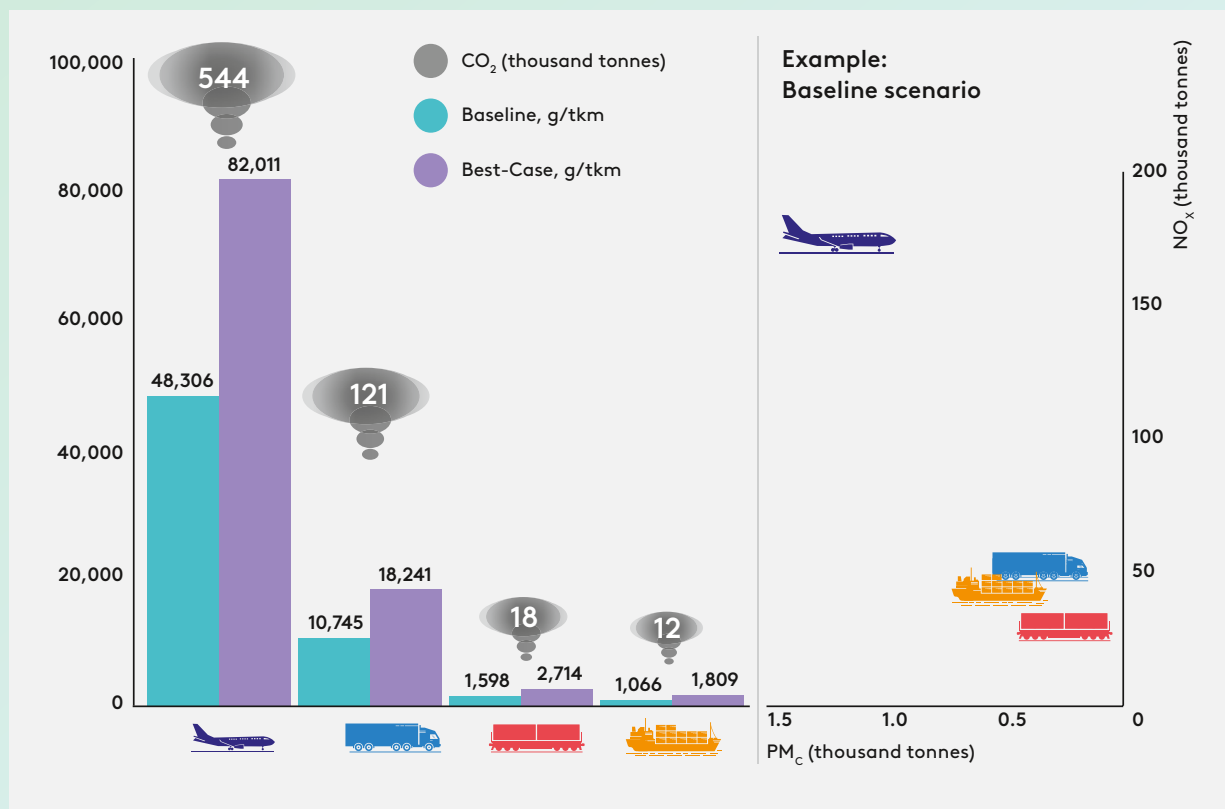
on the potential of the Unified Deep Water System of the Russian Federation, connecting the Caspian Sea via the Volga River to the Azov-Black Sea, Baltic, and North Sea basins.

**Tariff and non-tariff barriers constrain the potential expansion of INSTC freight traffic.** Possible challenges faced by the INSTC in its progressive development include the lack of a single tariff, uncoordinated transport policies of the member countries, international sanctions, lack of harmonised international transport standards and border-crossing procedures, missing links, and corridor bottlenecks. Accordingly, successful enlargement of the INSTC's potential hinges on expansion not only of the corridor's "hard" infrastructure, but also of its "soft" infrastructure. The gravity model indicates that:

- The reduction of export costs associated with border compliance in states participating in the INSTC Agreement, from the current USD 376.12 to USD 79.65 (EU average), is associated with the increase in their foreign trade by 5.9% (USD 59.08 billion) compared to 2019;
- The reduction of export time associated with border compliance in states participating in the INSTC Agreement, from the current 51.33 hours to 7.48 hours (EU average), is associated with the increase in their foreign trade by 52.6% (USD 526 billion) compared to 2019;
- Deployment of intelligent transport systems and digitisation of international multimodal transport and logistics using CIM/CMGS and CMR electronic waybills, eTIR carnets, and satellite navigation systems has a beneficial impact on foreign trade in the states participating in the INSTC Agreement, and can open up new opportunities for simplification of border-crossing procedures, reduction of cargo delivery times, and improvement of the INSTC safety record.

### Box A. Environmental Advantages of Railway Transport

The average level of direct and indirect greenhouse gas emissions generated by railway transport is 18 g/tkm, which is only slightly higher than that of the maritime transport used for long-distance sea freight (12 g/tkm). As for the other modes of transport, railway transport is more environmentally friendly, producing half the amount of emissions of inland water transport, one-seventh that of road transport, and one-thirtieth that of air transport. If we take into account emissions not only of greenhouse gases, but also of particulate matter and mono-nitrogen oxides, which also have deleterious effects on the environment and human health, then railway transport can be safely described as the most environmentally clean mode of transport.



Source: Authors' calculations based on coefficients published by Klein et al. (2021).

Creation of conditions conducive to further development of INSTC transport operations (elimination of infrastructural bottlenecks, simplification of border-crossing procedures, alignment of tariff policies, development of corridor management mechanisms, etc.) **may result in an expansion of the list of interested countries and countries participating in the Agreement**, including some countries of the Persian Gulf, the Indian Ocean and East Africa; countries of Central Asia, such as Turkmenistan, the Kyrgyz Republic, and the Republic of Uzbekistan; China (to the extent of expansion of its bilateral trade with Iran); and some countries of Central and Eastern Europe.

The **INSTC can make an important contribution to the implementation of international initiatives and programmes**, such as the Vienna Programme of Action for Landlocked Developing Countries 2014–2024, the UNESCAP Regional Action Programme for Sustainable Transport Connectivity in Asia and the Pacific, phase I (2017–2021), and the Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022–2026) to be adopted at the fourth UNESCAP Ministerial Conference on Transport (14–17 December 2021). Clearly, development of the INSTC will provide an important impetus to implementation of Sustainable Development Goals (SDGs), UN General Assembly resolutions on sustainable transport and transit transport corridors, and recommendations of the two global UN conferences on sustainable transport held in November 2016 in Ashgabat, and in October 2021 in Beijing.

**In the future, the INSTC may become a development corridor for the EAEU.** Implementation of large-scale transport infrastructure projects will not only reduce time in transit and carrier operating costs, but also indirectly promote sustainable development. Thus, in addition to expanding trade, development of the ITC will promote construction of industrial parks and special economic zones along transit routes, facilitate cooperation in the production of goods and services, and accelerate creation of new manufacturing and logistical chains between the EAEU member states and the large developing countries of the Persian Gulf and the Indian Ocean, including Iran, India, and Pakistan. This, in turn, will create new jobs, improve economic growth prospects, and increase the well-being of the local population. Moreover, with the development of the ITC, freight traffic will switch from maritime transport to railway transport – environmentally friendly mode of freight transport in terms of CO<sub>2</sub> emissions (as measured in grams per tonne-kilometre).