CONCEPT
FOR THE DEVELOPMENT
OF CONTAINER TRANSPORT
IN TRACECA COUNTRIES
UP TO 2030

CONTENTS

INTRODUCTION

The global trend shows that in recent years the fight for the flows of transit container cargo is intensifying and countries are taking serious steps to increase the attractiveness of container transport.

The document "On the Competitiveness of Container Transport in TRACECA Countries" prepared earlier by the Permanent Secretariat of the Intergovernmental Commission TRACECA (PS IGC TRACECA), briefly describes the main global trends in the development of container transport and the initiatives of the countries, including those not being the Parties to the Basic Multilateral Agreement on International Transport for Development of the Europe-the Caucasus-Asia Corridor (MLA).

The global trend of the struggle for container flows, which became relevant after China's announcement of the "One Belt, One Road Initiative" (BRI) in 2013, has contributed to the development of transcontinental traffic, which shows annual growth. Therefore, the growth of the competitiveness of the railway routes of the TRACECA transport corridor and the increase in traffic volumes requires the adoption of appropriate measures by the MLA Parties.

Taking into account the importance of timely adoption of measures for the development of container transport, as well as the impact of the current situation in the world on the volumes of trade and cargo transportation, the PS IGC TRACECA, together with international consultants and experts has developed this **Concept for the development of container transport in the TRACECA countries up to 2030**. The main goal of developing this Concept is to increase the competitiveness of container transport within the framework of TRACECA and to raise the volume of transport operations by attracting freight traffic.

The Concept consists of four main sections aimed at (1) analysis of trade relations with a forecast for 2030 both between the countries of Europe and Asia and between the TRACECA member states, (2) assessment of the impact of trade relations between the countries of the Eurasian continent on container transport and the effect of attracting additional container flow, (3) identification of the "bottlenecks" of the TRACECA corridor in the development of container transport along the railway and sea sections of the routes, and (4) development of the recommendation to increase the competitiveness of container transport within the territories of the countries participating in the corridor.

DETAILED ANALYSIS OF TRADE RELATIONS

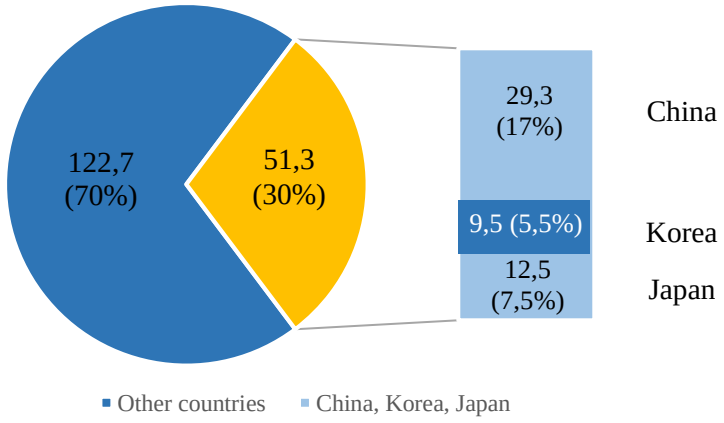
TRADE TURNOVER BETWEEN THE COUNTRIES OF EUROPE AND ASIA (except the MLA member states)

At the end of 2019, the exports of the countries of the world amounted to 174 trillion USD[1]. One third, or $ 54 trillion, of world exports is from China, Japan and South Korea, while $ 5.8 trillion is exported to these three countries. Thus, 40% of export operations are carried out by China, Japan and South Korea. Given the geographical location of the corridor countries, it is advisable to consider trade flows in two main directions: East-West and North-South.

EAST - WEST

If we consider the trade turnover of the countries of Europe and the above three countries, it can be seen that 4 trillion US dollars is the export of European countries (excluding TRACECA member states and Russia) to China, Japan and Korea.

Exports of these three countries to European countries in 2019 exceeded USD 51.3 trillion, or almost 90% of all exports of these countries. At the same time, more than USD 29.3 trillion falls to the share of China, US $ 12.5 trillion - of Japan and US $ 9.5 trillion – of Korea. Thus, China is the main country of export of goods to European countries and should be considered as the point of departure for container trains.



The share of exports of China, Korea and Japan to the European countries compared with the world exports volume (in trillion USD)

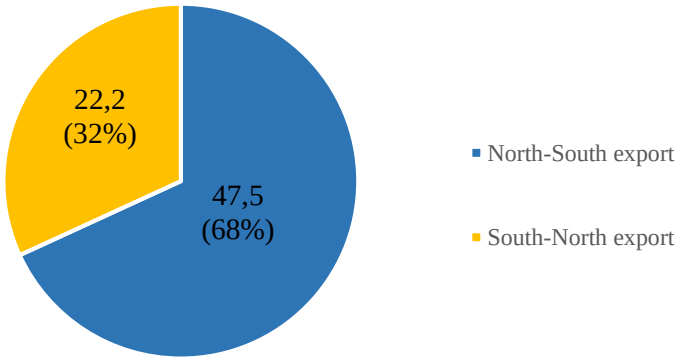
[1] According to the information available on https://comtrade.un.org/

Thus, transportation in the direction of Asia-Europe-Asia has great potential in the development of container transportation. At the same time, given the low volume of exports of European countries to China, Korea and Japan, the issue of reversed load of container trains plays an important role in the formation of competitive container traffic.

NORTH – SOUTH

In the North-South direction, the volumes of trade of such countries as Belarus, Denmark, Estonia, Finland, Lithuania, Latvia, Norway, Poland, Russia, Sweden are considered as the countries of the "north", as well as Afghanistan, India, Iran, Pakistan, Tajikistan, Turkey and Uzbekistan, as countries of the “south”. These countries were selected to consider the trade turnover between them, since the trade relations of these countries require the transportation of goods, at least through the territories of two or more countries participating in the corridor.

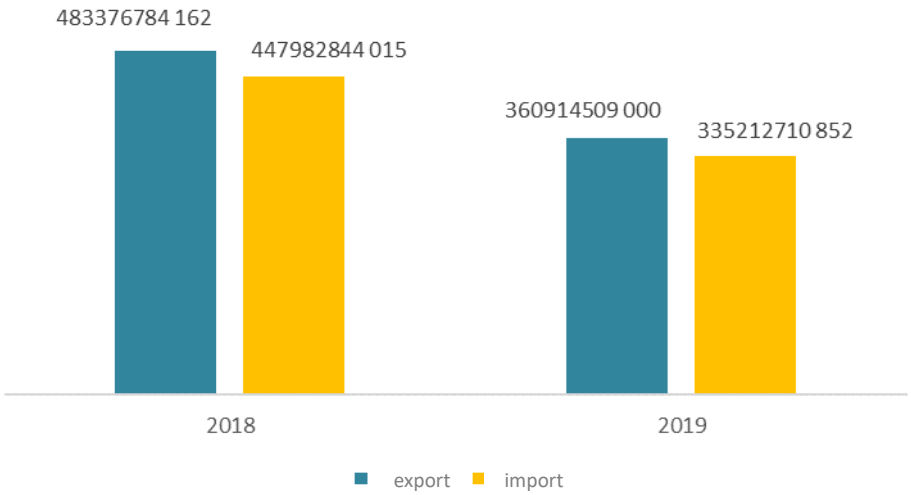
According to the data for 2019, the volume of trade between the above countries amounted to 69.7 billion US dollars, where the export of the "northern" countries is 2 times higher than that of the "southern" countries[2]. At the same time, 73% of exports to the "southern" countries (mainly to Turkey, India and Uzbekistan) are exports from Russia, which does not allow forming the movement of goods along one route. At the same time, given that the volume of mutual trade between North-South countries is much less than the volume of trade in the East-West direction, it is advisable to concentrate efforts on the development of container traffic in the East-West direction, thereby attracting cargo that can be transported in containers.



Trade between the countries of North and South (billion USD)

[2] The website (https://comtrade.un.org/) does not provide information on the export of Afghanistan, Iran and Tajikistan

Exports of the MLA member states to the countries of the world (excluding the corridor countries) in 2019 amounted to 360.9 billion US dollars, while imports amounted to 335.2 billion US dollars. Thus, the trade turnover of the corridor countries with the countries of the world made about $ 700 billion (696.1), which is 25.3% less than in 2018 ($ 931.3 billion)[3].



Volume of mutual trade of TRACECA countries with the countries of the world (USD)

If we consider the main trading partners of the countries, we can conclude that most of the corridor countries have developed trade relations with the countries of Europe, Russia and China[4].

The top 5 importers of **Armenia's** products are such countries as Switzerland (16%), China (13%), Georgia (12%), Bulgaria (11%) and Russia (9.9%), which together account for about 60% of all exports' countries (1.1 billion US dollars). At the same time, Russia is the main exporter of Armenia, and the volume of imported goods by Armenia reaches 43% or 740 million US dollars.

The main export markets of **Azerbaijan** are Italy, which imports 30% of the country's products (or 6.1 billion US dollars), as well as Turkey (2.8 billion US dollars), India (955 million US dollars) and Germany (US $ 931 million). Great Britain and Russia are also the main exporters of goods to Azerbaijan (44% or 4.7 billion USD).

[3] According to the information available on https://comtrade.un.org/
[4] According to the data on https://resourcetrade.earth for 2018

Bulgaria exports most of its products to Germany (14%), Turkey (11%), Romania (8.1%), Italy (8.1%) and Greece (6.7%). The total volume of exports is USD 13.2 billion. At the same time, Russia is also the main exporter of goods to Bulgaria with a share of 23% of the total imports of Bulgaria (3.2 billion USD).

37.9% out of **Georgia's**[5] total exports go to Azerbaijan (13,4%), Russia (13,1%) and Armenia (11.4%), while 36,3% out of the country's total imports fall on Turkey (17%), Russia (10,3%) and China (9%).

China and India make up the largest share in **Iran's** exports (31.2 billion US dollars), which accounts for 50% of the country's total exports. At the same time, Brazil, India, China and Russia make up the largest share in the imports of products with a percentage of 53.8% or 6.6 billion US dollars.

The main importing countries of **Kazakhstan's** goods are Italy (13%), China (11%), the Netherlands (8.9%), Russia (5.8%) and France (5.5%), whose total imports amounted to 26.6 US $ billion (out of US $ 60.5 billion). At the same time, 56% of all imports of the country are goods from Russia (4.4 billion US dollars).

The main trading partners of **Kyrgyzstan** are the United Kingdom (46% of the country's total exports), Russia (58% of the country's total imports) and Kazakhstan (20% of the country's total imports), the trade turnover with which exceeds 2 billion USD.

Among the main importers of **Moldova** are Romania (19%), Russia (13%) and Italy (9.9%), which import products worth $ 1.4 billion. At the same time, Moldova imports most of all from Romania (36%), Russia (14%) and Ukraine (12%) in the amount of 1.7 billion US dollars.

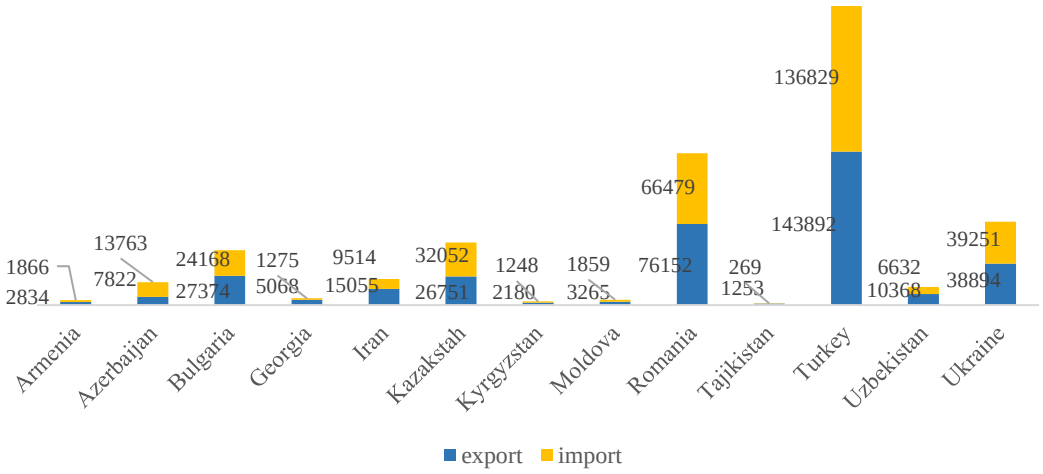
Romania exports its products to Italy (8.2%), Germany (7.8%), Bulgaria (7.5%) and Turkey (6.2%), which together amounts to about US $ 15.8 billion. At the same time, Russia is the largest exporter of Romania, which accounts for 15% of the country's total imports (or 3.2 billion US dollars).

Kazakhstan (27%), Switzerland (18%) and Turkey (17%) are the main importers of **Tajikistan**, accounting for more than 60% of the country's total exports ($ 726 million out of $ 1.2 billion). Kazakhstan (40%), Russia (34%) and China (8.4%) are the largest exporters of products to Tajikistan, which together exceed 80% of the total imported volume (US $ 930 million out of US $ 1.1 billion).

[5] According to the data of the National Statistics Office for 2019

Turkey's[6] [6] largest trading partners are Germany (9,1% of the total exports), the United Kingdom (5,6% of the total exports), the United States (4,1% of the total exports) and Russia (4,7% of the total imports of the country). At the same time, China, Germany, Russia, USA and Italy are the main importers of Turkish products the share of which makes 93,8 % of the total imports of the country).

The largest markets for **Uzbekistan's** products are Switzerland (28%), China (23%), Russia (12%), Kazakhstan (11%) and Turkey (8%), to which Uzbekistan exports the products worth US $ 6.4 billion out of
US $ 8.9 billion. Russia and Kazakhstan are also the largest exporters of their products to Uzbekistan. The share of these countries in the import basket of Uzbekistan exceeds 68% (3.4 billion US dollars).

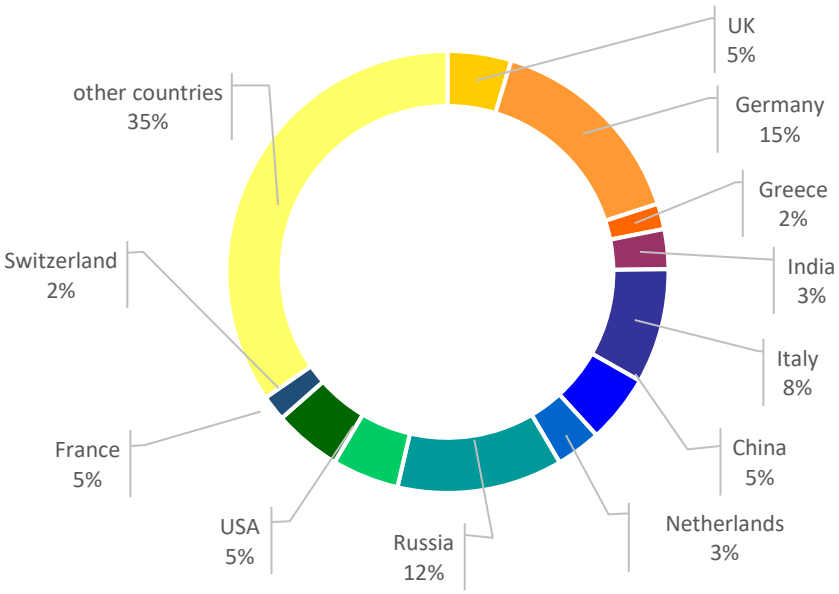


Volume of mutual trade of TRACECA countries with the countries of the world by country (million USD)[7]

The main trade partners of **Ukraine** are the countries outside the CIS, that is, the majority are not the countries participating in the TRACECA corridor. So, Ukraine mainly exports to Italy, Egypt (7%), China (6%), Turkey (6%) and India (5.3%) in the amount of 12 out of 38 billion US dollars.

In general, among the countries of the corridor, the largest volume of trade is observed in Turkey, Romania, Ukraine, Kazakhstan and Bulgaria. At the same time, trade of Turkey with third countries is practically equal to the total volume of trade of Romania, Kazakhstan and Bulgaria with countries not participating in the TRACECA corridor.

[6] Data for 2020 provided by the Turkish Party
[7] Data for 2019, available on https://comtrade.un.org/



Main trade partners of TRACECA countries (2019)

Hence, the main trade partners of the countries participating in the corridor are Germany, Russia, Italy and China, the share of which accounts for almost half of all trade relations of the TRACECA countries (40%). The trade turnover of the TRACECA member states with the countries of the world cannot become the main starting point in the development of container transport. The current situation requires priority work on transit container traffic, since the volume of freight traffic over the past years shows that the trade turnover between the countries of Europe and Asia, with the exception of the TRACECA countries, has great potential, especially for those goods that can be transported in containers. Cargo from the countries of the corridor can also be transported by launching permanent container trains subject to a possibility of organizing train traffic.

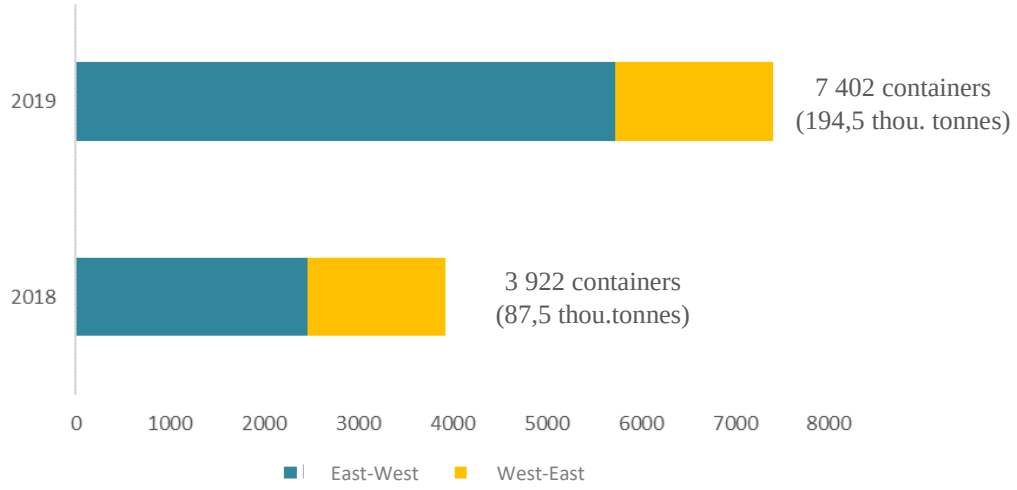
INFLUENCE OF TRADE RELATIONS OF THE EURASIAN CONTINENT COUNTRIES ON CONTAINER TRANSPORTATIONS ON THE TERRITORIES OF THE CORRIDOR COUNTRIES

Despite the current situation and some fluctuations in trade relations of some countries, container transportation has been gradually reorienting over the past ten years to land routes for cargo transportation, which is reflected in the increasing volumes of cargo transportation between the countries of Europe and Asia.

DETAILED ANALYSIS OF CONTAINER TRANSPORTATIONS THROUGHOUT THE TERRITORIES OF THE MLA MEMBER STATES

According to the information of the International Association **"Trans-Caspian International Transport Route"** (TMTM), the route of which runs through China, Kazakhstan, the Caspian Sea, Azerbaijan, Georgia and further to European countries, in 2019 25.9 thousand containers were transported, of which **7.4 thousand containers** were transported in transit traffic (an increase of 89% compared to 2018 - 3.9 thousand containers). At the same time, most of the goods were transported in the western direction (77%), while the remaining 27% were transported in the eastern direction.

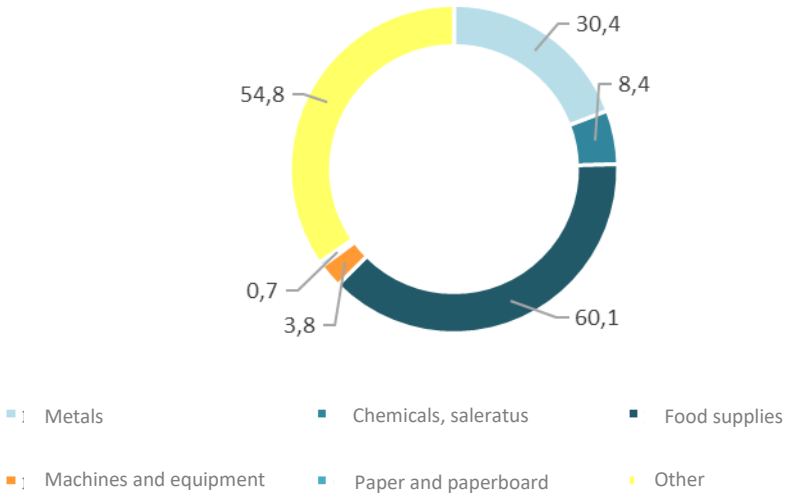
In 2020, 8.1 thousand containers were transported, which is 9% more than the volume of the same period in 2019 (7.4 thousand containers). Strong westerly momentum also remains in 2020.



Transportations directions along the TITR

The nomenclature of the transported cargo is slightly different. In the East-West direction, food cargo, non-ferrous metals and chemicals are mainly transported, while in the West-East direction, those are food cargo (25.5 thousand tons), sugar

(14.8 thousand tons), chemicals (8, 1 thousand tons) and construction cargo (2.1 thousand tons).



Nomenclature of cargo transported along the TITR in the East-West direction for 2019 (thou. tons)

In 2020, within the framework of the work of the ALE "IA" TITR ", two container trains departed from Turkey (Istanbul) to China (Xi'an), carrying export cargo. A similar container train also passed in 2020. Regular trips of container trains from Turkey to China make it possible to increase traffic through the territories of the MLA member countries, being a vivid example of organizing export traffic.

ANALYSIS OF CONTAINER TRANSPORT AND TRENDS OF THEIR DEVELOPMENT ALONG ALTERNATIVE CORRIDORS

China-Kazakhstan-Russia-Belarus-countries of Europe

The China - Europe train service was opened 9 years ago - in March 2011. By the end of 2020, the number of trains passing through the border station exceeded 15 thousand units.

При этом обратная загрузка в период становления не превышала 65%. In general, it took 7 years to reach the figure of 5 thousand trains, and to increase the number of trains to 10 thousand in 15 months. It took less than 12 months to reach 15,000 trains. Thus, the most difficult stage is the formation of the route and the attraction of goods at the initial stage. At the same time, the return shipment during its formation did not exceed 65%.

Today, 22 China-Europe train routes pass through Kazakhstan, reaching 13 countries, including Russia, Poland, Belarus, Germany, etc., these trains carry more than 200 categories of goods.

China imports through Kazakhstan mainly cotton yarn, timber, cars, spare parts and 7 other categories of important commodities. Exported goods are e-commerce, cars, electronics and 8 other main categories.
Since the summer of 2020, the Chinese station Alashankou has switched to a digital port system, which allows automatic control of imported goods. At the same time, export cargo inspection procedures can be completed in 20 minutes. The average stop time of China-Europe trains has been reduced from 14 to 5 hours.
In just 9 months of 2020, the number of China-Europe freight trains passing through Alashankou exceeded 3506, which is 40.5% more than in the same period in 2019. At the same time, the volume of cargo transportation amounted to 2,484.7 tons or 316.8 thousand containers, and the value of cargo is estimated at about 121 billion yuan.
In general, 517.5 thousand containers were transported in the China-Europe-China direction in 2020, which is 45% more than in 2019 (356.1 thousand containers). In total, in 2020, 5649 container trains passed through UTLC ERA services.
In January 2021, 51.3 thousand containers were transported in this direction, which is 88% more than in January 2020 (27.3 thousand containers). The number of incoming and outgoing China-Europe trains at the Alashankou border station in 2021 reached 444, which is 49.5% more than a year earlier. Of these, 230 trains went from China to Europe and 214 trains returned from Europe to China[8].

China-Russia-countries of Europe

The Russian Federation is taking active measures to attract and increase the volume of freight traffic in container trains. Reduction of the cost of transportation due to subsidies, as well as the implementation of the "Trans-Sib in 7 days" project give positive results.
Russia and Japan have also completed the third stage of test container shipments along the Trans-Siberian Railway. Transit traffic of containers between Japan and Europe through the Trans-Siberian Railway increased significantly in 2020, about 3,000 containers were transported, the volume of such traffic in 2021 is planned to increase and launch a regular service due to Japan's interest in subsidies allocated by the Russian side.
At the same time, in February 2021, a test container train with cargoes was dispatched from Japan to the UK via the Trans-Sib as part of the Maersk AE19 service. According to the Russian Railways, the train contains 40 forty-foot containers with sportswear and equipment.
From the Japanese port of Yokohama, the cargo arrived by sea at the port of Vostochny, where the containers were loaded onto the railroad and followed through the Russian Railways network to the port of St. Petersburg for subsequent shipment

[8] https://www.utlc.com/news/obem-perevozok-otlk-era-po-itogam-2020-goda-sostavil-546-9-tys-dfe/

by sea to the port of Felixstowe. The train departed on February 6, its arrival in St. Petersburg is scheduled for 11 days, and in general, the total transit time from Japan to the UK will be about 42 days, including 11 days per 10 thousand km via the Russian Railways network.
Thus, transportation through the territory of Russia is becoming an increasingly attractive alternative route for the delivery of containers between Asia and Europe, even for such a traditionally sea route as from Japan to the UK.

Importantly, Maersk launched the AE19 multimodal service in August 2019 in partnership with Russia's Global Ports. Over the year, Maersk launched a container service with a unique combination of short sea and intercontinental rail services that connects multiple points of origin in Asia with ports in Northern Europe[9]. In July 2019, the first shipment departed from the Far East, and in September 2020, thanks to increased customer interest, the combination product became a regular weekly service. The service is based on a short sea service between ports in Korea, Japan or China and the port of Nakhodka in the Russian Far East, followed by an intercontinental rail service via Russia from Nakhodka to St. Petersburg (takes 11 days). The last line is another short connection between St. Petersburg and the ports of Finland (Helsinki and Rauma) and continental Europe (Gdansk - Poland, Bremerhaven - Germany, etc.). Today this service has become a permanent product of the company.
The main cargoes are time-sensitive cargo, which requires faster transit times compared to the products for sea transport only and significant cost savings compared to air transportation.
Traffic data is powered by TradeLens, a platform jointly developed by IBM and Maersk, which provides near real-time delivery data to the customer database directly from the source of each participating organization, while connecting this rail corridor directly to its established ecosystem of international transport providers.
The main issue in the development of the service was the issue of return shipment, which became available half a year after the launch. Thus, in March 2020, the service was also launched eastbound, connecting the Nordic countries of origin with several destinations in Asia. At the same time, following the results of the second quarter of 2020, the company announced a 25% increase in operating income, which allowed the company to demonstrate positive results for the eighth consecutive quarter[10]. These indicators are also showing growth today.

[9] https://www.maersk.com/news/articles/2020/09/08/maersk-makes-ae19-ocean-railservice-from-asia-to-europe-permanent
[10] https://www.maersk.com/news/articles/2020/08/19/strong-performance-by-ap-moller-maersk-in-q2-despite-covid-19-impact

In general, the development of container transportation is becoming multimodal, which becomes possible thanks to the efforts of major players in the maritime container transportation market.

At the same time, according to the report of the international independent research company Drewry, the cost of delivery of goods between Europe and Asia by rail based on the Eurasian Rail Alliance Index (ERAI) and by sea based on the World Container Index (WCI) [11] differs by no more than $ 100. This makes rail transport not only efficient, but also more competitive compared to sea freight, which makes it possible to predict growth in rail traffic in 2021. At the same time, since the beginning of the pandemic, there has been a sharp increase in the cost of sea transportation. So, as of 18 February 2021, the cost of transporting one 40-foot container was USD 5249, while the cost of transportation by UTLC ERA as of the same date was USD 2670[12]. This shows that the increase in the cost of sea transport plays in favour of transcontinental transport, if a competitive price is offered, where the policy of subsidies of China and Russia plays a meaningful role.
The TRACECA corridor is significantly inferior to alternative routes in terms of the cost of transporting containerized cargo. Thus, transportation on alternative routes is estimated at USD 0.24 per container-kilometre, while transportation on TRACECA routes averages USD 0.36 per container-kilometre. The lowest tariffs are applied in Kazakhstan (0.24-0.25 dollars) and Turkey (0.33-0.34 dollars). Relatively high tariffs are set in the countries of Georgia ($ 0.56-1.17), Azerbaijan ($ 0.56-0.65) and Ukraine ($ 0.93).[13]
Considering the fact that transportations along the TRACECA corridor are inferior in transit time to transportations from China to European countries, the decisive factor in attracting containerized cargo is the equalization of tariffs.

POTENTIAL VOLUME OF CONTAINER TRANSPORTATION BY 2030, TAKING INTO ACCOUNT THE FORECASTED TREND OF TRADE RELATIONS AND CARGOES TO BE TRANSPORTED BY CONTAINERS

Calculation methodology

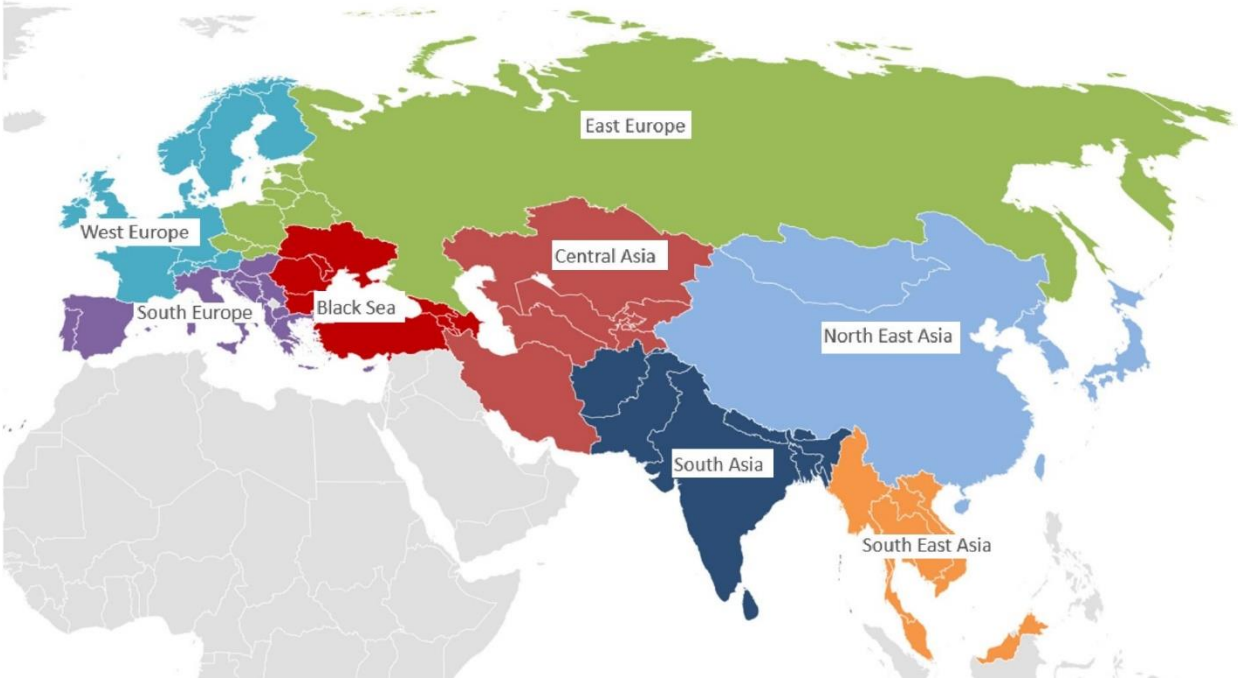
To determine the potential volume of container traffic, a detailed analysis of goods transported between countries was carried out based on data for 2019.
In order to determine the predicted trend of trade relations between the countries of the Eurasian space, 75 countries of Europe and Asia were selected, the mutual trade

[11] https://www.drewry.co.uk/supply-chain-advisors/supply-chain-expertise/world-container-index-assessed-by-drewry
[12] https://index1520.com/en/index/
[13] The cost on the TRACECA corridor was calculated on average along the routes of Altinkol-Poti, Altinkol-Istanbul, Altinkol-Constanta, Altinkol-Mersin, Altinkol-Slavkuv.

of which, in direct or indirect relations, can affect the volume of cargo transported in transit through the territory of the TRACECA countries. These countries are also classified into 8 groups depending on their location countries.

Types of goods and their share are grouped into 10 classes according to the International Standard Trade Classification (SITC), namely

0 Food products and live animals;
1 Drinks and tobacco;
2 Non-food raw materials, except fuel;
3 Mineral fuels, lubricants and similar materials;
4 Animal and vegetable oils, fats and waxes;
5 chemicals and similar products not elsewhere classified;
6 manufactured goods, classified mainly by type of material;
7 machinery and transport equipment;
8 different finished products;
9 goods and transactions not elsewhere classified by SITC. At the same time, postal parcels, coins, gold and other special operations, due to their minimal impact on the actual volume of trade, are excluded from the study.



Countries selected to forecast trade volumes and their groups

This section is based on data from two sources:

1. Comtrade database in terms of retrospective data for the period from 2000 to 2019, indicating the country of origin of goods, their country of destination, types of goods and their share and value;

2. Oxford Economics in determining forecasting approaches based on the prepared report on forecast trade data until 2030, indicating data by type of goods for 20 countries [14], which together cover 57% of trade in selected 75 countries.
According to the ComTrade database, the average share is indicated as kg / USD [15]. Based on this information, further work is based on calculations in a ton / US dollar ratio, which will later be used to calculate the projected volume of container traffic/trains.

Group	SITC code	Description	Kg/USD	USD/ton
Basic goods	0	Food products and live animals;	0.84	1193
	1	Drinks and tobacco;	0.78	1288
	2	Non-food raw materials, except fuel;	3.54	282
	3	Mineral fuels, lubricants and similar materials	2.46	407
	4	Animal and vegetable oils, fats and waxes;	1.13	882
Intermediate goods	5	chemicals and similar products not elsewhere classified;	0.40	2470
	6	manufactured goods, classified mainly by type of material	0.61	1627
Consumer goods	7	machinery and transport equipment	0.06	17859
	8	different finished products;	0.07	13376
-	9	goods and transactions not elsewhere classified by SITC	0.0002	-

Types of goods and their share (2019)

For the rest of the countries, the following model was applied:
- the same groups of countries of the same year were used as the initial data (forecasts of the trade volume of Oxford Economics by countries are classified by country groups, which gives an approximate estimate of the volume of trade from a group of countries to a group of countries by type of goods by year; the ratio of types of goods by trade value for groups of countries and countries by year is taken as the ratio of types of goods from a group of countries to a group of countries by year. For example, 42% of the volume of trade from the Black Sea to Western Europe in 2022 will be the class of machinery and transport equipment; thus, according to the forecast 42% of trade volume from Georgia (Black Sea country) to Belarus (Western Europe country) in 2020 will be SITC Section 7: Machinery and Transport Equipment).

[14] Trade between Belgium, Bangladesh, China, France, Germany, Hong-Kong (China), India, Ireland, Italy, Japan, Malaysia, the Netherlands, Poland, Russia, Singapore, South Korea, Spain, Turkey, Great Britain and Vietnam; and trade of each country out of these twenty with the South-Eastern Europe and the CIS, except Russia.
[15] The database lacks the information on 10% of trade operations in 2019. The goods which are not included in the database are removed from calculations.

- historical relations of the same groups of countries from 2017 to 2019 were used as the initial data (for example, from 2017 to 2019, 31% of the value of trade from Kazakhstan to Azerbaijan accounted for section 0 of the SITC: Food products and live animals; therefore, it is predicted that 31% of the value of trade from Kazakhstan to Azerbaijan annually from 2020 to 2030 will be food and live animals).

Since trading volume was quoted at par in US dollars, all figures have been adjusted for actual and projected US dollar inflation. Any US dollars referred to in this Concept, unless otherwise stated, refer to US dollars in relation to 2019[16].

Since the forecast is focused on the TRACECA corridor, European flows are subdivided into two dimensions depending on the availability of land routes in TRACECA and the likely direction of trade flow (selected directions are shown in the table below). Trade flows that are unlikely to be sent through the territory of TRACECA countries, for example from South Asia to Southeast Asia, are classified as "non-TRACECA" and thus excluded from the flow forecast classification. At the same time, possible transit flows only through the territory of one country were also not included in this section.

Through TRACECA		
From the region	*To the region*	*direction*
Eastern Europe	South Asia	North-South
South Asia	Eastern Europe	South-North
North-East Asia	Eastern Europe	East-West
North-East Asia	Southern Europe	East-West
North-East Asia	Western Europe	East-West
Eastern Europe	North-East Asia	West-East
Southern Europe	North-East Asia	West-East
Western Europe	North-East Asia	West-East
South Asia	Southern Europe	East-West
South Asia	Western Europe	East-West
Southern Europe	South Asia	West-East
Western Europe	South Asia	West-East
From TRACECA		
Black Sea	Eastern Europe	East-West
Black Sea	Southern Europe	East-West
Black Sea	Western Europe	East-West
Black Sea	North-East Asia	West-East
Black Sea	South Asia	West-East
Black Sea	South-East Asia	West-East
Central Asia	Eastern Europe	East-West
Central Asia	Southern Europe	East-West
Central Asia	Western Europe	East-West
Central Asia	North-East Asia	West-East
Central Asia	South Asia	West-East
Central Asia	South-East Asia	West-East

To TRACECA		
From the region	*To the region*	*direction*
Eastern Europe	Black Sea	West-East
Southern Europe	Black Sea	West-East
Western Europe	Black Sea	West-East
South-East Asia	Black Sea	East-West
North-East Asia	Black Sea	East-West
South Asia	Black Sea	East-West
Eastern Europe	Central Asia	West-East
Southern Europe	Central Asia	West-East
Western Europe	Central Asia	West-East
North-East Asia	Central Asia	East-West
South Asia	Central Asia	East-West
South-East Asia	Central Asia	East-West
Within TRACECA		
Black Sea	Black Sea	Inland
Black Sea	Central Asia	Inland
Central Asia	Black Sea	Inland
Central Asia	Central Asia	Inland

Trade flow categories

Due to the availability of data at the time of analysis, trade volume in 2020 was predicted taking into account the negative impact of COVID-19. The total value of

[16] Inflation 2000-2019 is a real value (fact). Inflation from 2020 to 2025 corresponds to the WMF forecast. It is expected that the inflation in 2026-2030 will make 2,2%.

Eurasian trade is projected to decline 5% in 2020, in line with UNCTAD's[17] forecast, that the value of global merchandise trade will fall 5.6% in par in 2020, and the total value of Eurasian trade will recover 13% in 2021. The average growth rate (CAGR) of the Eurasian trade value will grow at 3.7% from 2019 to 2021, up from an 11-year CAGR of 3.4 from 2019 to 2030. This means that the impact of the COVID-19 Pandemic on Eurasian trade is temporary and will not be affected by its long-term cost.

Detailed analysis of trade in 2019

Analysis of cargo in the context of trade operations according to the data for 2019 shows that of all trade relations that are related to the TRACECA countries, the largest share is occupied by mineral fuels (37%), raw materials (17%), which accounted for more than half of the trade volume. They are followed by manufactured goods (15%) and food and live animals (11%).).

In addition, 22% of goods in price equivalent are identified as potential cargo for transportation through the territories of the TRACECA countries, which corresponds to 18% in volumes. These indicators are important for further forecasting volumes by 2030.

Type of goods/Class	Goods value (billion USD)		Volume of goods (million tonnes)	
	TRACECA	Eurasia	TRACECA	Eurasia
Basic	**358**	**1628**	**611**	**3503**
0	91	574	97	436
1	16	85	10	881
2	61	228	159	850
3	183	705	338	1295
4	7	36	7	41
Intermediate	**494**	**2457**	**216**	**1145**
5	218	1214	79	448
6	277	1243	137	697
Consumer	**1178**	**5081**	**82**	**270**
7	834	3821	56	199
8	344	1260	26	71
Total	**2030**	**9166**	**909**	**4918**

41% of the total TRACECA-related trade or 370 million tonnes of trade is associated with transport or trade "**through TRACECA**". 26% or 240 million tonnes were "**Outside TRACECA**", 25% or 220 million tons were "**in TRACECA**", and 9% or 80 million tonnes were "**within TRACECA**". This significantly increases the possibility of using the TRACECA land corridor for different categories of origin-destination and different types of goods. For most of the trade, the origin or

[17] https://unctad.org/news/covid-19-drives-large-international-trade-declines-2020

destination of which is in TRACECA, the goods are inevitably sent by road, rail or pipeline, unless it is an expensive and urgent commodity that is transported by air or only by sea. Meanwhile, for trade "through TRACECA" such as trade between China and Europe, overland transport is nothing more than a niche alternative to traditional maritime shipping, and the market share of overland shipping was much less than 5%. Competition from other overland Eurasian corridors further squeezes the market share that the TRACECA corridor can occupy.

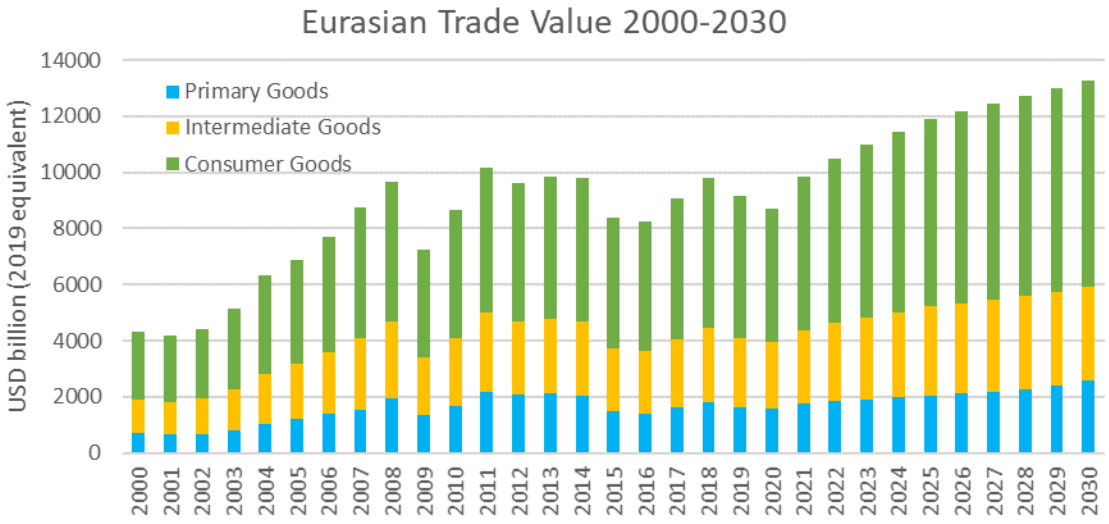
Another popular belief is that there is more trade from East to West than from West to East, and therefore trains and trucks inevitably went from West to East without cargo. Analysis of the data for 2019 shows, that the opposite direction is characterized by disproportion. Trade corresponding to TRACECA from West to East was 30% higher than trade from East to West. Below is the relevant TRACECA trade by destination, category, and by type and class of goods by volume.

Volumes of trade (million tonnes)	**Basic goods**					**Intermediate goods**		**Consumer goods**		**Total**
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
West-East	**48**	**8**	**102**	**188**	**4**	**37**	**52**	**15**	**3**	**457**
Through TRACECA	13	2	58	106	1	15	12	7	1	214
To TRACECA	30	5	32	53	2	21	35	8	2	189
From TRACECA	5	0	12	29	0	2	5	0	0	54
East West	**30**	**2**	**42**	**110**	**3**	**31**	**70**	**40**	**22**	**350**
Through TRACECA	7	0	6	21	1	16	36	27	17	132
To TRACECA	5	0	2	3	2	7	11	4	2	35
From TRACECA	18	1	34	86	1	8	23	8	3	183
Internal	**15**	**1**	**13**	**28**	**0**	**6**	**14**	**1**	**1**	**78**
Within TRACECA	15	1	13	28	0	6	14	1	1	78
North-South	**3**	**0**	**1**	**13**	**0**	**4**	**1**	**0**	**0**	**23**
Through TRACECA	3	0	1	13	0	4	1	0	0	23
South-North	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**
Through TRACECA	1	0	0	0	0	0	1	0	0	2
Total	**97**	**10**	**159**	**338**	**7**	**79**	**137**	**56**	**26**	**909**

Trade "through TRACECA" classified by destination, category, and type/class of goods by volume.

Thus, a retrospective analysis showed that trade relations using the example of 2019 shows that transportation through the territory of the TRACECA countries has great potential for development in the future.

Forecasting trade relations and container flow



Projected volume of trade in value terms

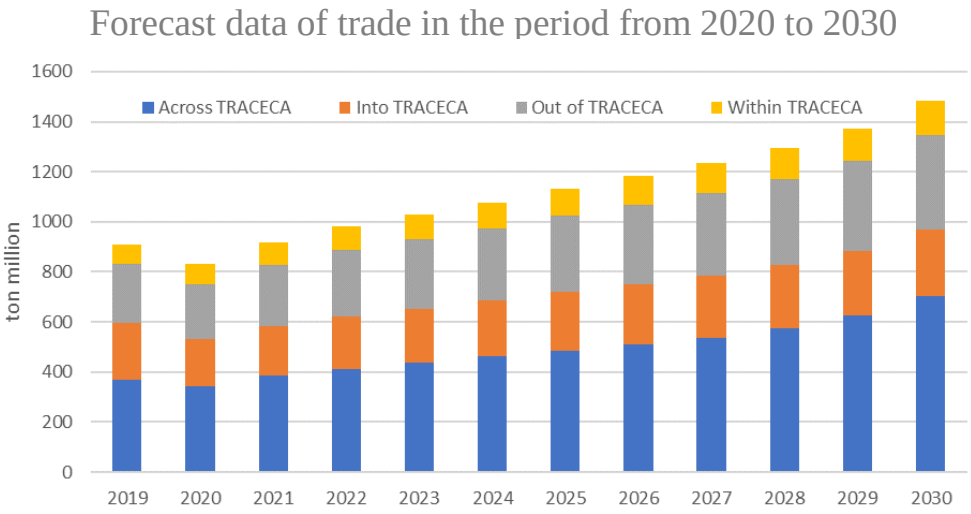
Projected volume of trade in nominal terms

Trends in the development of Eurasian trade flows from 2000 to 2030 can be divided into three phases depending on different growth rates:

1. Rapid growth from 2000 to 2008: total trade grew from $ 4.3 trillion to $ 9.7 trillion at a CAGR of 11%; Estimated total trade increased from 2.0 billion tonnes

to 3.3 billion tonnes at an average annual growth rate of 6%. Average unit cost per tonne increased from USD 2,100 to USD 3,100 per kg from 2000 to 2008.
Trends in the development of Eurasian trade flows from 2000 to 2030 can be divided into three phases depending on different growth rates:
1. Rapid growth from 2000 to 2008: total trade grew from $ 4.3 trillion to $ 9.7 trillion at a CAGR of 11%; Estimated total trade increased from 2.0 billion tonnes to 3.3 billion tonnes at an average annual growth rate of 6%. Average unit cost per tonne increased from USD 2,100 to USD 3,100 per kg from 2000 to 2008.
2. Continuous rise in value and increase in volume from 2009 to 2019: The global financial crisis hit Eurasian trade, with trade volume plummeting 25% in 2009 compared to 2008. Since then, the value of Eurasian trade has fluctuated. Total trade volume from 2009 to 2019 ranged from USD 7.2 trillion to 10.2 trillion. Meanwhile, total trade grew from 3.2 billion tonnes in 2018 to 4.9 billion tonnes in 2019, at an average annual growth rate of 4%. The average unit cost per tonne decreased from USD 3100 to USD 1860 per kg from 2018 to 2019.
3. Uncertainty between 2020 and 2030. On a reasonably optimistic outlook, forecasts show a 3.4% CAGR for trade and a 2.9% CAGR for volumes. This points to a projected Eurasian trade volume of USD 13.3 trillion (45% more than in 2019) and a trade volume of 6.7 billion tonnes (36% more than in 2019).
The corresponding trends in the development of TRACECA trade flows are similar to the trends in the development of Eurasian trade flows:
1. Rapid growth from 2000 to 2008: total trade grew from USD 700 billion to USD 2.0 trillion at a CAGR of 14%; The estimated total trade increased from 380 million tonnes to 720 million tonnes with an average annual growth rate of 8%. Average unit cost per tonne increased from USD 1,870 to USD 2,850 / kg from 2000 to 2008.
2. Continuous growth in value and volume increase from 2009 to 2019: The global financial crisis hit Eurasian trade, with trade volume plummeting 28% in 2009 compared to 2008. Since then, the value of Eurasian trade has fluctuated. The total trade volume from 2009 to 2019 also ranges from $ 1.5 trillion to $ 2.3 trillion. Meanwhile, total trade grew moderately from 720 million tonnes in 2018 to 910 million tonnes in 2019, at an average annual growth rate of 2%. The average unit cost per tonne decreased from USD 2850 to USD 2230 per kg from 2018 to 2019.
3. Uncertainties between 2020 and 2030. On a reasonably optimistic outlook, the projections show a 3.8% CAGR for trade and a 4.5% annual growth rate of trade volumes. This points to a projected Eurasian trade volume of USD 3.0 trillion (50% more than in 2019) and a trade volume of 1.5 billion tons (63% more than in 2019). If the forecasted optimistic growth in trade volume occurs, trade “through TRACECA” will contribute to the growth of trade. It is forecasted that from 2019 to 2030 its contribution to the total TRACECA trade will grow from 41% to 48%, or from 370 million tonnes to 710 million tonnes in absolute terms. At the same time,

the share “within TRACECA” will decrease from 25% to 18%, as its absolute value will increase only by 40 million tonnes from 220 million tonnes. Meanwhile, the volume of trade “outside TRACECA” will grow from 240 million tonnes to 380 million tonnes, which is ¼ of the total. The difference between "within TRACECA" and "from TRACECA" tends to increase, potentially creating a disbalance.



Forecast volumes of trade in nominal terms

While data on the share of modes of transport for the volume of Eurasian trade is practically unavailable, “rough estimates” based on the data on the share of modes of transport for specific origin and destination allowed modeling the potential volume of transport by rail.

The study uses assumptions about the share of rail transport as shown below:

1. “**through TRACECA**”: no more than 9% of the trade volume is destined to railways, and about 3% is addressed to the TRACECA corridor[18];
2. “**to TRACECA**” and “from TRACECA”: no more than 40% of the trade volume is addressed to the railway routes in TRACECA;
3. “**within TRACECA**”: not more than 60% of the trade volume is intended to the TRACECA railway routes;
4. The volume of trade specified in clauses 1-3 does not include 3 types of mineral fuels, since they will be transported by sea or by pipeline;

[18] Industry experience shows that with strong competition of maritime shipping, 9% of total freight traffic (representing about 40% of consumer trade) is likely to be the maximum potential that can be realized by railway transport. Within these 9%, the TRACECA railway corridor will continue to compete with other Eurasian railway corridors for freight traffic, for example, on established routes through Russia. Therefore, it is assumed that no more than 1/3 of the volume of trade transported by rail will potentially pass along the TRACECA corridor.

5. Traffic "through TRACECA" will be mostly containerized, since the bulk of it will be consumer goods; the other three traffic types are likely to be a mixture of basic, intermediate and consumer goods.
Based on the above assumptions, the potential volume for TRACECA rail routes is 153 million tonnes in 2019, of which 49 million tonnes come from TRACECA.
67 million tonnes - to TRACECA, 30 million - within TRACECA and 7 million – through TRACECA.

Trade volume (million tonnes)		From								Total
		Black Sea	Cent. Asia	East. Europe	North-East Asia	South Asia	South-East Asia	South. Europe	West. Europe	
To	Black Sea	34.1	2.3	24.8	9.6	1.4	1.6	8.6	13.3	**95.9**
	Central Asia	1.6	16.1	7.9	3.8	0.1	0.0	0.1	0.6	**30.4**
	Eastern Europe	6.8	13.5		1.1	0.1				**21.6**
	North-East Asia	13.0	7.7	1.8				0.4	6.1	**28.9**
	South Asia	6.4	2.7	0.7				0.1	0.5	**10.3**
	South-East Asia	2.1	0.1							**2.2**
	Southern Europe	19.1	0.3		1.0	0.2				**20.6**
	Western Europe	15.7	0.4		2.5	0.4				**19.0**
Total		**98.8**	**43.2**	**35.2**	**18.1**	**2.2**	**1.7**	**9.2**	**20.5**	**228.9**
Categories		**Through TRACECA: 15**		**To TRACECA: 88**		**From TRACECA: 54**		**Within TRACECA: 72**		

Transport volumes by rail – forecast for 2030

Within trade volumes related to TRACECA, about 153 million tonnes are transported along the TRACECA railway routes, of which 49 million tonnes are TRACECA exports to Europe / Asia, 67 million tonnes - TRACECA imports from Europe / Asia, 30 million tonnes - between TRACECA countries and 7 million tonnes - through TRACECA. Out of 7 million tonnes of "through traffic" along TRACECA, about 3.3 million tonnes will go from West to East / from East to West, and about 0.3 million tonnes will go from North to South.
China, Russia, Germany, Great Britain, the Netherlands, Spain and Italy are the key players in the transport market “through TRACECA”. Most of the end-to-end traffic will be non-bulk consumer goods with high containerization potential.
From 2030, the volume of Eurasian trade could potentially grow to 13.3 trillion US dollars (45% more than in 2019), and the trade volume will be 6.7 billion tonnes (36% more than in 2019). This points to the total available market for TRACECA rail routes in 229 million tonnes, of which 54 million tonnes are TRACECA exports,

88 million tonnes of TRACECA imports, 72 million tonnes within the TRACECA trade and about 15 million tonnes "through TRACECA".
With regard to the through transport along TRACECA, it is likely that the volume of trade from West to East will exceed the volume of trade from East to West in the next 10 years, since according to the forecast, the volumes by directions are divided as follows:
North-South - 0.7 million tonnes;
South-North - 0.1 million tonnes;
East-West - 5.2 million tonnes;
West-East - 8.9 million tonnes.

Thus, North-South and South-North traffic does not have the potential for development to run container trains. At the same time, the East-West / West-East direction has great potential for further development.
Considering that 54% of goods are container-suitable (according to SITC classification 0, 1, 2, 4, 6, 7 and 8), out of 14.1 million tonnes, 7.6 million tonnes can be treated as a potential traffic flow for the formation of container trains.
Taking into account the average load of one twenty-foot container (10 tonnes), then 7.6 million tonnes equals 760 thousand TEU containers in 2030 or 9 thousand container trains. It should be borne in mind that the issue of return loading remains one of the topical issues, and the volume of 100% secured volume of return loading will not exceed 2.9 million tonnes in both directions (290 thousand TEU or 3.3 thousand container trains a year).

"BOTTLENECKS" OF THE TRACECA CORRIDOR IN THE CONTAINER TRANSPORT DEVELOPMENT

At present the railway infrastructure of the MLA member states has been formed. The completion of the construction of the railway line Baku-Tbilisi-Kars (BTK) in October 2017 made it possible to connect the Central Asian networks with Turkey via Georgia and Azerbaijan. The first freight train from PRC to Europe arrived along the BTK line at the point of destination (Prague) on 9 November 2019 – the distance is 11 483 km (from Xi'an to Prague)[19]. It is expected that in the future the existing railway capacity will increase threefold.

The BTK section is 826 km long, but it is not continuous due to the break of gauge on the Turkish border. The route allows decreasing the delivery time between Asia and Europe to two weeks instead of 40-45 days by sea.

The PRC considers this corridor as an alternative to a new Eurasian land bridge (i.e., to the route of PRC – Kazakhstan – Russia – Belarus).

Annually the PRC transits about 10 million TEU (twenty-foot equivalent units) of cargo by sea and more than 400 000 TEU along a new Eurasian land bridge.

The TEU amount from the PRC to the Caucasus and Turkey increased from almost zero in 2017 to 8.1 thousand in 2020. Besides, the PRC is the EU's second largest trade partner after the USA, and the EU is the PRC's largest trade partner.

A greater part of this trade falls on the goods, such as manufactured and consumer goods, machinery and equipment, and only 10% - on trade in services. Most of the China-EU traded goods are transported in standardized intermodal containers along sea routes (over 90%) and by rail along the PRC-Kazakhstan-Russia-Belarus-Poland route (distance from Xi'an is 9000 km)

The new Port of Baku, Alyat, replaced the old port in the centre of the city and is both the main sea gateway of Azerbaijan on the Caspian coast and the main connecting link of the TRACECA corridor with a favourable geographical position to the south of the Absheron Peninsula, protected from northern winds. Currently, the port has a capacity of 15 million tons of bulk cargo per year (International Trade Port of Alyat - ITPA) and 100,000 TEU

Within the framework of the TRACECA corridor and CAREC, Azerbaijan is a key transit country for supplies between the Black Sea countries and Central Asia. Therefore, it is important to ensure the elimination of "bottlenecks" precisely in the connecting link, since further transit routes have branches and can be transported both by land routes and multimodal routes through the Black Sea.

[19] The information in this section is prepared by CAREC

“BOTTLENECKS” ALONG THE RAILWAY SECTIONS OF THE ROUTES, INCLUDING CONTAINER PARK

Transport operators report the following key problems along the corridor: relatively high cost and duration of transportation.
At the same time, the main factor affecting the cost of transportation is the need to change the transportation track at least twice and ensure the return loading (if necessary), as well as to cross the borders of countries, which requires registration and leads to delays by time standards. In addition, in a number of countries there is a shortage of containers or fitting platforms, which, in general, increases the cost and time of registration.
Both Azerbaijan and Georgia have significantly modernized the road infrastructure, however, in Georgia there are no logistics centres, warehouses of A class and railway container terminals of the same size and carrying capacity as in Kazakhstan or Uzbekistan, and in Azerbaijan such facilities are available in limited quantities (although some plans exist).
A common practice in the ports of Poti and Batumi is to unload containers and reload cargo into wagons or semi-trailers for further transportation. The cost is $ 6-10 per ton if the cargo is stacked on pallets, that is, from $ 150 to $ 250 for 25 tons. If the cargo does not fit on pallets, then its cost can go up to $ 500.
The rail tariff structure reinforces this approach. The cost of transportation of a 40-foot container from Poti to Baku (900 km) is 1000 US dollars at the tariffs of the Georgian railway. That's $ 1.11 per km. According to a preliminary study of CAREC ports conducted by ADB, rates for international road transport along the same route at the end of 2019 ranged from $ 1 to $ 1.3 per km on the routes from West to East and approximately $ 0.70 from East to West (considering that the cost of rail transport from east to west is subsidized).

According to ADB's preliminary study of CAREC ports, Hong Kong-based Kerry Logistics has opened rail services from Lianyungang via Kazakhstan to the Caucasus and Turkey. They offer services of full block trains and separate wagons with a delivery time of 18-20 days. Kerry Logistics' trial shipment from Lianyungang to Izmit took 65 days with some transit delays due to weather conditions and theft of goods from the block train.
In 2020, A.P. Moller - Maersk announced the arrival of its first China - Georgia block train from Xi'an to Tbilisi on 4 October 2020 (starting on 10 September 2020) with 41 containers on board and an empty return trip.

Some other rail restrictions include the number of wagons and high-altitude terrain. Typically, PRC-EU trains carry 42-44 FEU. Kazakhstani and Russian trains usually

have 32 wagons with a capacity of 4 TEU per wagon. Nevertheless, there are much fewer physical obstacles along the Altynkol - Brest route than in the Caucasus.
Georgian Railways have limited the capacity of block trains (bound for the Black Sea ports) to 29 wagons at 58 TEU (29 FEU) and 1,900 tons per train due to the high mountain Rikoti Pass (where a new tunnel is being built to remove this restriction). In addition, the capacity of the Akhalkalaki pass on the Tbilisi-Kars line is limited to 36 TEU (18 FEU) or 18 wagons per train. There are plans to overcome these bottlenecks, since such restrictions significantly reduce efficiency and average revenue per train / km.
At the same time, the application of various legal norms is also a kind of obstacle. For example, on the border of Georgia and Turkey, the CIM / SMGS consignment note is reissued, which also leads to time delays due to the use of the CIM consignment note in Turkey.
All of the above restrictions, as well as the application of various legal norms in the field of tariffs' formation for international transport of goods in transit traffic, also affect tariff setting, which requires the adoption of uniform approaches and methodology in calculations.

"BOTTLENECKS" ALONG THE SEA SECTIONS OF THE ROUTES

On the sea section, the issues of concern in organizing regular container service are similar to "bottlenecks" in railway transport.
At the same time, when forming the cost of transportation, the main issue is the reverse loading, on which the possibility of reducing the basic tariff depends. Insufficient freight traffic also affects the frequency of feeder shipments. At the same time, the cost of transportation on the sea section also depends on the services of seaports, whose tariffs are not unified today.

In general, the current practice leads to uncertainty and long waiting times due to changes in the traffic regime, the absence of a fixed schedule. Long travel time means longer funding for the goods sold and fewer direct voyages over a given period and often involves costly and lengthy unloaded return trips. Reduced transport productivity results in a lower return on transport operators' investment in vehicles or infrastructure. This consistency reduces investment in basic transport equipment and can lead to poor service quality from older, less reliable and less environmentally friendly vehicles.

Azerbaijan Caspian Shipping Company (ACSO) plays a connecting role in the TRACECA program (TITR), providing maritime transport of goods and passengers across the Caspian Sea. The company's transport fleet consists of 51 vessels: 20

tankers, 13 ferries, 15 general-purpose dry cargo vessels, 2 Ro-Ro vessels, and the marine fleet consisting of 210 ships.
The annual capacity of the Caspian ferries is 95 thousand railroad cars or 4.5 million tons of cargo. Currently, seven of these 13 ferries are intended for the TITR project on the Baku (Alyat) - Aktau - Baku (Alyat) route. In a preliminary study of CAREC ports by ADB, most ferries are considered obsolete. Old ferries can carry 28 railroad cars, while newer ferries can carry 52-54 railroad cars. The distance from Baku to Aktau is about 450 km, travel time is about 24 hours. On April 24, 2019, a feeder vessel was launched between Aktau and Baku.

The same ASCO Company operates rail ferries to Kuryk (KAZ) with two rail ferries providing a capacity of 80 passengers, 44 railroad cars or 54 railway tanks. The travel time between Kuryk and Alyat port is 18 hours, which is 4 hours less than from Aktau to Alyat. According to ADB's analysis of CAREC ports, Kuryk takes 3 hours to clear customs and the estimated average railway ferry traffic in Kuryk is 45 ferries per month. Railway ferries do not operate on a fixed schedule and depart from cargo ports based on the availability of cargo, subject to the arrival of a loaded freight train at the ports of call.
While ferries are designed to be used in railroad cars, they can also accept trucks, although railroad cars are clearly given priority. This situation creates uncertainty, especially for truck operators wishing to cross the Caspian. During a 2019 site visit, as part of ADB's preliminary CAREC port survey, it was observed that one hundred trucks were waiting at the port of Alyat. Some stakeholders (e.g. Uzbek road carriers) noted that it is more attractive to bypass the Caspian via Russia, especially for empty return trips.
Thus, low loading in seaports leads to a dilemma between railway and road carriers when filling a vessel. TITR tariffs include delivery across the Caspian using a railway ferry. ADB's preliminary study on CAREC Ports and Logistics noted that these are sunk costs incurred by railways, shipping companies, and / or ports, which does not occur on the New Eurasian Land Bridge route (i.e. PRC - Kazakhstan - Russia - Belarus).
Though the issue of tariffs rate for the carriage of a wagon by ferries was not clarified in the preliminary ADB study regarding CAREC ports, it is known that the rate for a truck is $ 1200 per trip, and the rate for a FEU on a container ship across the Caspian Sea is $ 460. To transport a container across the Caspian Sea is almost three times cheaper than a truck, and much cheaper than a railroad wagon. In addition, container ships have a fixed schedule with one turnaround service per week (the day

is fixed, the departure time is not), and rail ferries operate more often, but do not have a fixed schedule. [20].

Port dues, which today vary depending on the port, also serve as a limiting factor in the provision of competitive rates for transportation. In a number of the ports of TRACECA member states port services are subject to taxation, though, according to Article 5 of the Basic Multilateral Agreement on International Transport for the Development of the Europe-the Caucasus-Asia Corridor, it is stipulated that taxes, fees and other payments, regardless of their name or purpose, will not be levied in relation to transit traffic, with the exception of expenses payment for transport, customs services, services related to transportation, as well as payments for the use of transport infrastructure.

In general, "bottlenecks" can be grouped as follows:

- Uncertainty of the schedule of railway ferries and the lack of ferry capacities in the Caspian;
- Partially obsolete ferry fleet;
- Lack of railway container terminals, warehouses of class A and modern logistics centres;
- Priority of rail freight over trucks and oil over other trans-Caspian freight;
- Labour-intensive shunting operations, loading and unloading of ferries;
- The number of wagons on the train is half that in the PRC and the EU;
- Lack of private sector participation and competition in the logistics services sector;
- Return empty trips;
- Unstable and insufficient trade flows / volumes;
- Lack of a unified approach to the issue of tariff setting;
- Lack of a unified legal framework for the development of container transportation, including the application of consignment notes.

[20] Preliminary study of ports and logistics in CAREC countries by ADB. June 2020 (not published)

RECOMMENDATIONS FOR INCREASING THE COMPETITIVENESS OF CONTAINER TRAFFIC WITHIN THE TERRITORIES OF TRACECA MEMBER STATES

To increase the attractiveness and competitiveness of the TRACECA corridor, recommendations have been developed in the following two directions.

COMMERCIAL CONDITIONS OF CARGO SHIPMENTS IN CONTAINER TRAINS

Unified principles of tariff setting

First of all, it is necessary to take measures to reduce the transport tariffs in the corridor's countries and make the process of determining and setting them more transparent. This requires cooperation between state and private structures at the international level.

The existing tariff structure should be modernized and adapted to the intermodal container-oriented system. It should also be reconsidered to a client-oriented approach that reflects the commercial reality and the readiness of consumers to pay. As a whole, the work in this direction should be focused on the following principles: "openness of tariffs and their common availability", "open description of existing discount systems" and "timely response to market conjuncture". At the same time, increased openness at the first stage can be achieved by placing a "tariff calculator" on the websites of interested parties of railway and maritime transport (railway administrations, seaports and carriers) of the MLA member states.

In addressing this issue, it is also appropriate to consider the possibility of partial subsidizing in countries where the tariffs are currently relatively higher, and the geographical location plays a key role (Azerbaijan[21], Georgia). This practice is applied in the People's Republic of China and Russia and shows the positive results that affect the volume of cargo transported. After a certain volume of constant freight traffic has been accumulated, a gradual departure from the subsidizing mechanism is possible, but these measures are necessary to attract the cargo base at the stage of the container routes' formation.

Another important factor is the establishment of unified principles of tariff setting in seaports on the Caspian Sea, since the seaports of Azerbaijan and Kazakhstan are objects of the quasi-public sector. This has also been recommended in the study of

[21] Tariffs for international railway transportation are agreed on the basis of the Tariff Policy in relation to international transportation at the annual Tariff Conference of the railway administrations of the CIS and the Baltic countries. This information is updated on an annual basis and is posted on the website of JSC "ADY" https://ady.az/content/index/45

the International Transport Forum (ITF) at the OECD as a way to increase demand for maritime transport[22].
The situation on the Black Sea is characterized by many seaports, the activity of which is not directly related to the state regulation. Therefore, the reduction of tariffs for the services of seaports and carriers will directly depend on the commercial relations between carriers and port administrations.
In this context, the role of the PS IGC TRACECA is to ensure supranational coordination, which will benefit all parties involved and facilitate the process of transporting goods, and consequently trade between countries. It is important to ensure the adoption of a separate document between the TRACECA countries, that will define common unified approaches to tariff formation between the MLA member states, which will make it possible to implement the MLA provisions on the development of transit traffic and creation of favourable tariff conditions.

Improving interaction of the interested parties of railway and maritime transport

It is also appropriate to pay attention to improving the mechanism of interaction between the interested parties of railway and maritime transport (railway administrations, seaports and carriers). Up to date, the coordination of railway transport activity is carried out at the bilateral level and within the framework of the ALE "IA "TITR". This method of interaction demonstrates the necessity to improve the existing interaction mechanism.
A special feature of work within the framework of alliances is the joining of efforts to solve the problems of developing transit traffic on specific routes passing through the territories of several states, rather than competition.
The most common form of multilateral alliances involves the operational integration without pooling assets. At the same time, the effectiveness of the alliance's activity directly depends on the degree of integration of all its members involved in transportation. To attract container cargo traffic, everyone should perform their functions well.

A similar system is widely used in the field of civil aviation, where there are alliances that do not imply entering into each other's assets (SkyTeam, Oneworld, etc.). These alliances do not envisage that one airline company will manage the fixed assets of another airline company, but are aimed at improving the quality of service, reducing the cost of transportation and increasing sales. As practice shows, this scheme works unfailingly.
In maritime transport, a similar situation is observed: European, Asian, American and other ship-owners and carriers bring together to increase their competitiveness

[22] https://www.itf-oecd.org/sites/default/files/docs/impact-alliances-container-shipping.pdf

in the international market. For example, within the framework of the vessel sharing agreement, it is possible to exchange container slots to improve quality and reduce cost. The tendency and significance of work in the alliance is also noted in the ITF study.

The same practice applies to European railway operators, which provide a comprehensive package of services not only for transportation, but also for forwarding.

The absence of alliances in railway transport forces shippers and freight forwarders to work separately with each railway administration, while alliances offer one solution along the route for the countries that formed them. In addition, in the absence of an alliance, the railway administrations practiced maintaining the representative offices abroad, but the cost of maintaining them minimized the economic benefit without achieving the proper results.

Despite 2 seas along the TRACECA corridor, the time of cargo transportation by rail in container trains can be reduced through the formation of an alliance on the example of JSC "UTLC ERA", which annually demonstrates a twofold increase in traffic volumes.

In the future, it is proposed to create a joint venture (JV), which will unite all participants of railway and maritime transport of the MLA member states. However, at the initial stage, it is appropriate to create the JV with a limited number of countries that play a fundamental role in carrying out transportation between the countries of Europe and Asia.

Bringing together the relevant organizations of Kazakhstan, Azerbaijan, Georgia, Turkey, Bulgaria, Romania and Ukraine would form the corridor's basis for the development of container transport between the countries of Europe and Asia. Following the completion of works on creation of the JV and establishing the activity, it is proposed to ensure a gradual accession of all countries participating in the MLA.

In general, the JV activities should be focused on 3 main issues**: improving the service quality, operational management of routes, marketing and commercialization of services.**

At the same time, the JV could develop the proposals for marginal tariffs and work on the basis of the founder's decision. In addition, the founders of the JV could also check its activity for compliance with the approved minimum transportation tariffs.

The process of creating the JV can be divided into the following stages:

1. Signing the agreement and creating the JV;
2. Solving organizational issues (budgeting, determining the organizational structure and filling positions);
3. Coordination of tariff formation and tariffs;
4. Organization of regular container service and promotion of the service;

5. Monitoring of activity and further improvement of activity.

With prompt actions taken, this procedure can be completed within a year.

For the effective construction of the JV, it is also important to maximize the application of information technologies with the integration of databases of the interested parties of railway and maritime transport, but this is not the fundamental and first condition for launching the JV.

In order to attract the cargo flow of the JV, it is necessary to establish cooperation with major players in the container transportation and manufacturers' market. To promote the service, the JV should focus on the target audience and work with each potential consumer of the services provided pointwise. This experience is widespread in Singapore, where the work of large companies is based only on key partners and taking measures to keep them in the market.

For the effective implementation of the project, it is important to make a decision at the level of governments of the countries concerned. In order to simplify the creation procedures, it is also proposed to consider the possibility of transforming the ALE "IA "TITR" into the executive body of the JV, ensuring the independence of the director (along with the creation of the CV without the participation of the ALE "IA "TITR").

In general, the creation of the CV based on the example of global alliances will allow us to offer a competitive product in the transportation market on the Eurasian continent, where price and speed will be the main conditions for attracting transit cargo. The principle of a freight forwarding company will also simplify the work of potential customers on the organization of door-to-door transport service.

The creation of the JV will also allow to diversify the risks between its participants, create a single subject of negotiations in the markets of Europe and Asia, as well as act as a single structure for attracting other sources of financing.

Given that China Railways sell the transport services not directly to customers, but through logistics platforms or local freight forwarders (who consolidate cargo, form consolidated requests for container trains, determine the most optimal delivery schemes involving various modes of transport), the creation of the JV will allow to create a permanent container service by establishing linkages with them.

A stable container service will ensure the growth of transported cargo and the profitability of the JV, and, accordingly, of the railway administrations, seaports and carriers of the MLA member states.

TECHNICAL CONDITIONS OF CARGO SHIPMENTS IN CONTAINER TRAINS

Strengthening harmonization and standardization

For the stable development of the corridor and to ensure constant demand, it is important to increase the speed of delivery of goods in containers on the railway. At the same time, the stability of this indicator plays a crucial role, since shippers and consignees plan the delivery of goods.

In performing the transportation throughout the territories of several countries, it is not possible to increase the speed of delivery when working only at the national level. Therefore, the coordinated actions of railway administrations are required, which will make it possible to form routes by simplifying and optimizing the processes at border crossings.

On the other hand, it is necessary to ensure the application of the CIM/SMGS consignment note throughout the whole route of cargo transportation in container trains. The Republic of Turkey needs to accelerate the transition to the use of CIM/SMGS in order to avoid re-issuance at the Georgian-Turkish border.

In this context, the optimization of border crossing processes that don't involve control procedures and relate exclusively to operating on railway lines, including container handling at seaports and changing rolling stock/wheel handling is required. Various standards of track gauge (Chinese, post-Soviet, Turkish, European) and gauge change operations along the TITR, as well as wagon capacity, should be further analysed to achieve standardization along the corridor (at the initial stage, the PRC, Kazakhstan, Azerbaijan, Georgia, Turkey).

Both the problems with break of track gauge, and the number of wagons, as well as the charge-backs' mechanisms when the wagons are in possession of the connecting line of railways, standards of wagon repair, the calculation of repair fees, etc. negatively affect the price and delivery time along the corridor. The similar problems regarding the number of wagons also arose during the formation of the Northern Corridor, but this issue was resolved by increasing the number of wagon fleets by railway administrations, where the main focus was on attracting private platforms. Given the established transportation scheme and the demand for transportation along the alternative corridor, this method of attracting platforms has shown high efficiency. Therefore, it is recommended to deepen partnerships with the private sector in the countries interested in attracting cargo and developing container transport.

The practice of border management should also be coordinated and formalized both at the state and international levels.

A number of Governments have recently implemented a number of improvements in customs operations at the border, such as the simplification of procedures and electronic declaration, as well as the creation of a "green corridor" pass system. However, additional reforms of customs inspection and border crossing management are needed, for example, adding modern scanners and an integrated system for customs inspection, as well as providing the ability to track cargo and related services, bringing their accuracy as close as possible to real time.
In this context, it is also important to solve the issues regarding the declaration of customs goods in terms of revising the requirements for filling out declarations, allowing the transport operators to provide one declaration per container train. This will significantly reduce both the time and financial costs of transportation.

It might be necessary to move the Red Bridge BCP, as it only serves road traffic and its expansion is currently limited due to the mountainous terrain. Moving to a flatter area on the border with a multimodal infrastructure to serve both road and railways connecting the port of Alyat would be a good long-term solution[23].

Development of modern logistics infrastructure and opening of the market
Accelerate the development of inland dry ports and container terminals. Strategically located inland dry ports will reduce the load on existing Caspian Sea ports and provide useful logistics functions for nearby markets and production centres (both industrial and agricultural). The efficiency of inland dry ports has been proven in the region (in the PRC) and at the global level in terms of the reduction of logistics costs. In addition, modern cold storage facilities will allow agricultural producers to sell their products in the off-peak season at a more favourable price.
In addition, modern storage facilities allow to consolidate cargo and ensure their shipment. When launching permanent container trains in the direction of Asia-Europe-Asia, it is also possible to use them to send cargo to/from the MLA member states, which will be processed in logistics centers.

The projects previously implemented in 2009-2011 within the framework of technical assistance projects - International Logistics Centers/hubs in Central Asia and International Logistics Centers for the Western NIS and the Caucasus, funded by the European Union, also pointed to the role of logistics centers in improving the regional transport network, reducing transport costs and transit time, as well as increasing container traffic between Asia and Europe through the TRACECA corridor routes.

[23] Proposed by CAREC

At the same time, today, even after ten years, not all the logistics centers projects identified in the framework of the above projects have been implemented. In addition, not all countries have logistics centers that meet international requirements, and those listed in Annex I to the Intergovernmental Agreement "On Dry Ports" do not comply with the guiding principles for the development and operation of "dry ports" set out in Annex II to the same Agreement.

It is important to accelerate the development of free trade areas (FTA), which can attract important value-added enterprises that make a significant contribution to the development of new industries. The FTA also need adequate legislation and reforms.

Improving the overcoming of water barriers

It is necessary to accelerate the strengthening of Trans-Caspian shipping facilities and port capacity, as well as modernization of the ferry fleet.

The relatively high cost of ferry services and the capacity of the port of Alyat lead to very variable time delays, which increases the logistics costs of this port, as the priority is given to the transportation of oil equipment and spare parts.

Another important issue is to improve the efficiency of operations carried out in ports, especially in container handling during feeder transportation on the Caspian Sea. Process data should be automated and simplified as much as possible in order to reduce time delays.

At the same time, the weather conditions, which do not allow entering or leaving of vessels, are a limiting factor in the development of scheduled transport. Therefore, it is also recommended to take the necessary measures to equip the water area of the ports with modern wave extinction devices. As a result of the measures taken, it is recommended that the schedule of maritime shipping be made public to enable carriers to plan their personal schedules. This will increase the efficiency of not only container transport, but also road transport.

For the development of maritime service on the Black Sea, it is important to establish partnerships with carriers that will be able to transport containers at a competitive tariff. In this context, it is important to "join" the transport flows that ensure the transportation of goods between the ports of Georgia, Ukraine, Bulgaria and Ukraine.

Promotion of the corridor and attracting freight traffic

For this, it is important to ensure integration into global value chains and attract world leaders in the field of container transport. This would make the corridor more efficient from the point of view of prices, especially in light of multimodal transport system.

For example, in August 2020, COSCO SHIPPING Ports Limited, through CSP Abu Dhabi Terminal, its first overseas project, announced the launch of direct weekly service to several ports in Europe and the Indian subcontinent[24]. The new Abu Dhabi Port Terminal, where the terminal was established in the framework of a 35-year agreement with CSP, serves as the regional base for COSCO SHIPPING Ports' global network of 37 ports. The direct traffic is served by a fleet of eight rotating vessels with a capacity of 10,000 to 13,000 TEU. This shows that today, the capacity of only one vessel exceeds the annual volume of container transport in transit traffic along the TRACECA corridor.

Direct export from Abu Dhabi to the ports of Rotterdam, Hamburg, London, Antwerp and Le Havre will consist mainly of polymers, while returning vessels will carry both general and project cargo.

Taking into account the partnership of COSCO SHIPPING with Kazakhstan on the development of a dry port in the FEZ "Khorgos-Eastern Gate", with Azerbaijan on the development of transportation with Absheron Logistics Center, as well as other partnerships with the Black Sea countries, it is proposed to establish relations with COSCO SHIPPING on the reorientation of some cargo flows on the route Abu Dhabi-Iran – Turkey – the European countries.

Only the volumes of two vessels used for maritime transportation to / from the Abu Dhabi terminal could significantly increase the volume of traffic on the TRACECA routes and launch a permanent container service through the territories of Iran and Turkey. Similar work can be carried out on the route Kazakhstan-Azerbaijan-Georgia-Turkey/the EU countries.

The development of partnerships would also allow for the reverse loading, as the forecast data for 2030 show that cargo flows in the Europe-Asia direction exceed the volumes in the Asia-Europe direction.

Thus, the reorientation of container traffic requires strategic partnerships with international, primarily global 3PL operators, and the largest partners involved in maritime transport.

[24] http://en.coscoshipping.com/art/2020/8/11/art_6924_174111.html

CONCLUSION

Trends in foreign trade show that trade relations between Europe and Asia have the potential for further increasing. The forecast made within the framework of this Concept demonstrates that the TRACECA corridor is able to attract from 290 to 780 thousand TEU of the container flow, which will allow to launch up to 9 thousand container trains per year by 2030 in the direction of Europe-Asia-Europe.

This volume can be attracted only if the most competitive conditions are created, both commercially and technically, as the current situation shows that the "bottlenecks" along the corridor play the role of a deterrent mechanism in the development of container transport.

Guided by the MLA provisions, the TRACECA member states are encouraged to take active measures both at the national and interstate levels, which will result in attracting the potential volume of goods to be transported in containers. At the same time, dynamic monitoring of transport conditions along alternative corridors should become a permanent work of railway administrations, seaports and carriers.

At the macro level, the traffic increase will provide a multiplicative effect on the GDP of the MLA member states through a direct (increase in profit) and indirect effect (increase in profit of related industries involving the transport of goods by rail). Together, the maximum achievement of the forecast data will increase the profitability of the industry by at least 1 billion USD (based on the average cost of transportation of 3,000 USD per TEU).

The development of intra-continental traffic within the framework of China's "One Belt, One Road" initiative, as well as the implementation of the European Union's "Shift to Rail" initiative, will support the implementation of the TRACECA initiative for the development of container transport, and the development of partnerships with world leaders in the container transport market will play a crucial role in the development of the corridor.

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