

# Role of Azerbaijan in Implementation of the One Belt, One Road Initiative and the North-South Corridor

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**Summary.** Azerbaijan has historically played the role of an important transportation hub between Asia and Europe. Since gaining its independence, the government of Azerbaijan has implemented regional and global transportation projects, focusing on the development of the East-West transport corridor, along with other large-scale economic projects, and this process continues. The One Belt, One Road initiative offered by the Government of China has further diversified and accelerated this activity.

**Key words:** The One Belt, One Road Initiative, Trans-Caspian Corridor, physical infrastructure, soft infrastructure.

## 1. Introduction

The intensive technological inventions since the end of the 18th century led to the mass production at the end of 19<sup>th</sup> century and early 20<sup>th</sup> century.

The intensive technological discoveries since the late 18<sup>th</sup> century led to the expansion of mass production in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Mass production caused a fierce struggle to conquer world markets. This process stabilized somewhat in the 1960s and 1970s, when markets were distributed mainly among multinational corporations (MNCs).

At the same time, the transfer of production by these MNCs from the United States and Europe to countries with abundant and cheaper labor has led to technological advances and economic prosperity in these countries. As a result, rapid economic growth in China, India, Malaysia, Indonesia, Vietnam, and other East Asian countries has further intensified their trade relations with Europe and strengthened activities around the lucrative East-West and North-South logistics corridors.

The One Belt, One Road (BRI) Initiative, launched by the PRC leadership in 2013, is also aimed at reaching this goal. This initiative covering more than half of the world's population is a megaproject in the field of logistics between East Asia and Western Europe and is at the center of attention of all leading countries.

Six transport corridors are planned for the implementation of the BRI. Among these corridors, the Trans-Caspian Corridor, also known as the Middle Corridor, where Azerbaijan plays an important role, is highly competitive in terms of key transport indicators.

Sanctions against Russia and Iran, on one hand, increase the relevance of the Trans-Caspian Corridor, and on the other hand, make the launch of the North-South Corridor essential for Iran and Russia. Given that the North-South corridor is also beneficial for India where economy is growing rapidly, the prospects for this corridor also seem realistic. A study by the Eurasian Development Bank in 2021 showed that the corridor is not limited to the north-south direction, but also promotes the creation of new logistics chains, including the Russia-Turkey corridor through Azerbaijan (Винокуров, Ахунбаев, Шашкенов & Забоев, 2021).

The passage of both corridors through Azerbaijan is of particular importance for Azerbaijan where strategic direction of economic policy is sectoral diversification.

Azerbaijan's important role in these corridors promises our country serious political dividends in addition to economic benefits.

## **2. Projects implemented in Azerbaijan on the international transport corridors**

The development of the transport sector in independent Azerbaijan, as well as the implementation of projects of international importance began in the first periods of independence, i.e. in the early 1990s, long before the One Belt, One Road Initiative.

**TRACECA.** This project, expressing the Transport Corridor Europe-Caucasus-Asia (TRACECA), was adopted at a conference held in Brussels in May 1993 with the participation of Azerbaijan, Georgia, Armenia, Kazakhstan, Kyrgyzstan, Turkmenistan, Tajikistan and Uzbekistan. This project was aimed to provide an alternative for European access to eastern markets (previously mainly used by sea or land via Russia). This corridor, replicating the ancient Silk Road, can be considered the original version and the driving idea of the BRI.

The TRACECA corridor funded by the European Union starts in Eastern Europe (Bulgaria, Romania, Ukraine) and also involves Turkey.

The fiber-optic cable of the railroad between Baku and Poti/Batumi was laid with the financial support of the European Commission. Oil and oil products are the most important transportation cargoes in this network. This railway line is also an integral part of the China-Central Asia, Caucasus-Europe line, supported by the Member States and the UN. This railway line extends to the Kazakhstan-China border on one hand and to Poti port through Azerbaijan crossing the Caspian Sea on the other hand. The new Baku International Sea Trade Port, the ports of Aktau and Turkmenbashi on the Caspian Sea are the projects under the TRACECA program. Azerbaijan has committed to build Alat port, located about 65 km south of Baku, to strengthen its role in transportation both along the Caspian Sea and between East and West. The total cost of this project is AZN 870 million (US\$ 1.1 billion) approx. Within the TRACECA project, this port is of logistical importance in terms of transportation between the Central Asia-South Caucasus-Black Sea-Europe route, as well as between North and South. It is expected that in the first phase, the port's capacity will reach 10 million tons of cargo and 40 thousand containers; in the second phase, 17 million tons of cargo and 150 thousand containers; and in the third phase, 25 million tons of cargo and 1 million containers. In fact, Alat port was designed to receive 11.5 million containers to meet the ever-growing demand for transportation (Çelikpala & Veliyev, 2015, p. 130-133).

The TRACECA project was somewhat overshadowed upon the emergence of the One Belt, One Road initiative.

Our research shows that the pipeline from Azerbaijan to the West is currently the most intensively exploited among all modes of transportation, as these pipelines are mainly used to export hydrocarbon resources of Azerbaijan to Europe. Let us first consider the large-scale transportation projects related to this mode of transportation.

**Baku-Tbilisi-Ceyhan (BTC) Pipeline.** The BTC pipeline, inaugurated on May 25, 2005 in Baku and on October 12, 2005 at the Georgian-Turkish border, was commissioned in 2006 and the first oil pumped reached Ceyhan on May 28, 2006. While a tanker carrying Azerbaijani crude oil sailed from Ceyhan, Adana province, on June 2, 2006, an official ceremony was held at the Ceyhan terminal by Turkey on July 13, 2006 (Çelikpala & Veliyev, 2015, p. 127-128).

The length of the BTC pipeline is 1,768 km. It exports oil from the Azeri-Chirag-Deepwater Guneshli field in Azerbaijan, as well as from Turkmenistan and, more recently, from the Tengiz field in Kazakhstan through the Sangachal terminal to the Mediterranean Sea (total: 443 km in Azerbaijan, 249 km in Georgia and 1,076 km in Turkey). (Weitz, 2015, p. 12).

The diameter of the pipeline is 42 inches, or about 107 cm, in the most part of Azerbaijan and Turkey and 46 inches in the Georgian section, decreasing to 34 inches in the final section down to the Ceyhan marine terminal in Turkey. The current capacity of the pipeline is 1.2 million barrels per day.

The BTC pipeline facilities include eight pumping stations (two in Azerbaijan, two in Georgia and four in Turkey), two intermediate filling stations, one pressure reduction station and 101 block valves. BTC traverses more than 1,500 rivers and 13 seismically active faults and rises to an altitude of 2,800 meters before returning to the sea level at Ceyhan. In the first half of 2023, BTC Co. spent about \$59 million on operating expenditures and \$18 million on capital expenditures. In the first half of the year, 114 million barrels (more than 15 million tons) of crude oil exported through BTC was lifted at Ceyhan and loaded on 158 tankers. The BTC pipeline currently carries mainly ACG crude oil and Shah Deniz condensate from Azerbaijan. In addition, other volumes of Caspian regional crude oil and condensate (Kazakhstan, and Turkmenistan) continue to be transported via BTC. BTC is the cornerstone of Azerbaijan-Georgia-Turkey trilateral relations. The project allowed Azerbaijan, that has no direct access to the ocean, to export its hydrocarbon resources to world markets, while Georgia to purchase electricity and earn revenues from transit, and Turkey benefits from its status as a regional energy center. The pipeline has paved the way for other projects by connecting the Caspian, Black and Mediterranean Seas. For this purpose, the parties also recognize the importance of including Central Asian countries in the relations initiated by this project. BTC shareholders: bp - 30.1%, Azerbaijan BTC Ltd. - 25%, MOLGROUP - 8.90%, Equinor - 8.71%, TP - 6.53%, Eni - 5%, TotalEnergies - 5%, ITOCHU - 3.40%, INPEX - 2.50%, ExxonMobil - 2.50%, ONGC Videsh - 2.36% (BP, n.d.).

**Baku-Tbilisi-Erzurum (BTE) Pipeline.** The part of the pipeline in Azerbaijan and Georgia (692 km) is known as the South Caucasus Pipeline (SCP) and the Shah Deniz pipeline. It runs parallel to the BTC and starts from the Shah Deniz field in the Caspian Sea and extends to Erzurum city, the capital of the 4<sup>th</sup> largest province in Turkey. The length of the BTE is 980 km, of which 443 km passes through Azerbaijan, 249 km through Georgia and 288 km through Turkey. The first commercial gas was delivered through this pipeline on December 15, 2006 (Equinor, 2006).

The initial design capacity of the pipeline was 30 billion cubic meters per year (Çelikpala & Veliyev, 2015, p. 29).

In 2021, the capacity of the pipeline was 21 billion cubic meters per year, and this figure was planned to increase to 26 billion cubic meters (Reuters, 2021).

Currently, given the possibility of connecting Turkmenistan and Kazakhstan gases to this pipeline through the Trans-Caspian gas pipeline, Azerbaijan proposes to increase the capacity of the pipeline to 60 billion cubic meters per year through the construction of the second string of it (Socor, n.d.).

Shareholders of the South Caucasus section of the BTE pipeline: BP (UK) - 29.99%, Lukoil (Russia) - 19.99%, TPAO (Turkey) - 19.00%, SOCAR (Azerbaijan) - 14.35%, Niko

(Iran) - 10.00%, SGC Upstream (Azerbaijan) - 6.67%. Since January 1, 2015, commercial management of SCP was transferred to SOCAR (Socor, n.d.).

**Baku-Tbilisi-Kars (BTK) Railway.** The idea of this railway project was first proposed in 1993 at a Joint Transport Commission of the three countries. In 2002, the Ministers of Transport of these countries signed a Protocol on the approval of the route, and in 2005, a feasibility study was conducted. On May 25, 2005, a trilateral communiqué on the Baku-Tbilisi-Akhalkalaki-Kars railroad project was signed in Baku. On February 7, 2007, the transport ministers of the countries signed a respective agreement in Tbilisi, at the same time the heads of three countries I.Aliyev, R.T.Erdogan and Saakashvili signed the Tbilisi Declaration on Regional Cooperation in the field of transport, natural gas and electricity (Civil.ge, n.d.).

The Baku-Tbilisi-Kars railroad project is included in the master plan for the development of Trans-European railway networks funded by the UN Economic Commission for Europe. The BTK railroad project was excluded from TRACECA, since Armenia did not participate in this project. Just for this reason that, as a result of the efforts of the Armenian lobby in the United States, the US Congress prevented American financial institutions from financing the BTK. Thus, the financing of the project fell on the shoulders of the participating countries. Turkey pays for the construction of the 76-kilometer line between Kars and Akhalkalaki, Georgia pays for the restoration and reconstruction of the 29-kilometer railway line between Akhalkalaki and Marabda in Georgia (for which Azerbaijan allocated a loan of US\$775 million to Georgia), and Azerbaijan pays for the construction of the section in Azerbaijan (Çelikpala & Veliyev, 2015, p. 133).

The total length of the BTK railway is 850 km, of which 504 km passes through the territory of Azerbaijan, 263 km through Georgia and 79 km through Turkey. **This route halves the transportation time between China and Europe compared to maritime transport** (President.az, n.d.).

The opening ceremony of the BTK railway took place on August 30, 2017 with the participation of the leaders of Azerbaijan and Turkey, as well as the prime ministers of Georgia, Kazakhstan and Uzbekistan. As mentioned by I.Aliyev, “it is planned to transport 5 million tons of cargo at the first stage, 17 million tons at the next stage”. According to SOFAR, “as of September 30, US\$640.3 million have been allocated for the implementation of the project, some of these funds are also used in the implementation of most of the construction work carried out in Georgia” (BBC, n.d.).

**Upon completion of the Aktau-Urumqi railway project and its integration into the BTK railway, passenger and freight transportation between Asia and Europe will be ensured via the China-Central Asia-South Caucasus railway network. So, the Trans-Asian and Trans-European railway networks will be linked** (Çelikpala & Veliyev, 2015, p. 134).

Great works are also being done in Turkey in this direction. The implemented “Marmaray” project has provided a rail link from Istanbul to Europe. Along with this line, another railway line is being built between Kars and Edirne. According to the agreement signed between Turkey and China, the construction of the high-speed railway line will be completed with a loan provided by China. It will help connect the BTK to Marmaray (UTIKAD, n.d.).

One of the important future plans related to the BTK is the launch of high-speed passenger trains between Azerbaijan, Georgia and Turkey along the Baku-Tbilisi-Ankara route (EADaily, 2023).

In light of the events around the Zangazur corridor, it is relevant to mention a fact that demonstrates the EU's biased and double-standard position regarding the BTK.

The EU decided to extend its TEN-T (Trans-European Transport Network) project (European Commission, n.d.) to the South Caucasus and to direct investments in this direction starting in the mid-2000s. However, at first the BTK was not supported by the EU due to the exclusion of Armenia from the route. The EU tried to restore the Kars-Tbilisi-Gumru railway that closed in 1993 due to the Karabakh war, and justified it with the alleged aim of achieving stability in the region. Therefore, the EU, like the US, also refused to finance the BTK (Lussac, 2008, p. 217-218).

However, after the BTK railway was commissioned in 2017 and in the light of the development of relations in transportation between Kazakhstan and Azerbaijan, the EU was forced to change its approach – BTK, together with the Port of Baku, began to gain particular interest for the EU that was then focused on hydrocarbon resources in Asia. At a business forum in Baku in 2019, EU Commissioner Khan said that the EU has identified 6 priority projects in Azerbaijan within the TEN-T project and plans to spend EURO 2.1 billion on six logistics centers in the country, 300 km of highways and electrification of railways. (European External Action Service, 2019).

Presently, the EU is trying to support Azerbaijan on many issues in its fight against the threats of Russia and Iran in the region by accepting it as a partner (Abilov & Hajiyevev, 2022, p. 38).

During the international conference “Along the Middle Corridor: Geopolitics, Security and Economy” held at ADA University on November 25, 2022, the Azerbaijani President Ilham Aliyev announced an additional US\$100 million to finance the Georgian section of the Baku-Tbilisi-Kars (BTK) Railway (Caspian Policy Center, 2022).

**Alat Port.** The project of this facility that is a new commercial port of Azerbaijan on the Caspian Sea, was developed by Royal Haskoning, Dutch company, that won the international open bidding. The construction of the facility began in 2007 and was carried out by Evrascon OJSC, a local company. The ferry terminal of the New Baku International Sea Port in Alat settlement was commissioned in 2014. The full construction of the facility was completed in 2018, and the opening ceremony was held on May 14 of the same year with the participation of the President of the Republic of Azerbaijan. The area of the port is 117 hectares and the total area of the built-up area is 400 hectares. Cargo turnover at initial stage will be 15 million tonnes per year, i.e. 50 thousand TEU containers, and at the next stage - 25 million tons per year - 500 thousand containers. There is an infrastructure for simultaneous accommodation of more than 1,000 containers in the port (Denizxeber.az, 2022).

Dredging was carried out in the port water area, and an access channel with a length of 7.5 kilometers and a turning circle diameter of 450 meters was built. To improve the efficiency of loading and unloading operations at the facility, 6 new German made gantry cranes with load capacity of 80, 40 and 32 tonnes were installed, and modernization and installation of 2 existing gantry cranes are under process. Within the project, 72 buildings and structures of various purposes were constructed, close and open warehouses established, special infrastructure for simultaneous placement of 1,040 containers on the container yard was

created. The location of the country on the East-West and North-South international transport corridors creates a rich transit potential for the new port. This facility will serve as a direct cargo station for the Baku-Tbilisi-Kars railway line (Xalq.az, 2018).

There are 17 berths in the port, 5 of which are for transportation of oil and oil products, 10 for transportation of timber and other cargoes, and 2 for transportation of passengers. In addition, there are also large oil terminals in Sangachal and Dubendi in Baku. Construction of road infrastructure connecting Baku-Alat-Georgia road is also carried out by Evrascon. As part of the initial phase of the port operation, cargo transportation in the first half of 2017 increased by 40.4% compared to the same period in 2016 and reached 5 million 260.3 thousand tons. As well as, the volume of transit transportation increased by 33.9% (Сараблинска, 2017).

A relevant law on the establishment of the Alat Free Economic Zone based on the base of Alat Port was signed by the President of the Republic of Azerbaijan on May 18, 2018. It states that once the Alat International Sea Port starts operating at full capacity, the zone will also make a significant contribution to the economy of Azerbaijan. The Alat Economic Zone is expected to serve a market of 130 million individuals, including the South Caucasus, Central Asia, Russia and a part of Turkey (President.az, n.d.).

The Alat Free Economic Zone will have special rules based on the laws of Azerbaijan (Nahmadova, 2022, p.4).

**North-South Corridor.** This corridor was founded under the relevant intergovernmental agreement signed between Russia, India and Iran on September 12, 2000. It aims to reduce the time of transportation of Indian products to Russia, as well as to the countries of Western and Northern Europe. Currently, this period is 6 weeks, and the realization of the North-South project will allow reducing it to 3 weeks. It should be also noted that Azerbaijan is the only country that has a land border with Iran and Russia, and this is a decisive factor in the cooperation between the three countries. Upon the completion of infrastructure projects on the corridor, it will be possible to organize direct railway transportation of goods from Baku to Nakhchivan Autonomous Republic via Iran. According to the Decree of the President of the Republic of Azerbaijan on Acceleration of Works on the section of the North-South International Transport Corridor running through the territory of the Republic of Azerbaijan dated December 7, 2015, the following works have been carried out on this project (Ministry of Economy of Azerbaijan, n.d.):

- A new 8.3-kilometer-long railway line was built between Astara of Iran and Astara of Azerbaijan to the bridge over the Astarachay River.

- A railway bridge over the Astarachay River was built.

- A 1.4-kilometer-long road was built from the railway bridge over the Astarachay River to the cargo terminal built in Iran.

- The Azerbaijani side continues construction of a railway station and cargo terminals on an area of 35 hectares in Astara, Iran.

- As part of the corridor, an official opening ceremony of the Qazvin-Resht section (175 km) was held on March 6, 2019 to connect Azerbaijani railways with the Iranian railway network.

- On March 28, 2018, an agreement between two countries on financing the construction of the Astara-Resht railway section in Iran was signed within the Iranian President's visit to Azerbaijan.

The total length of the corridor is 7,200 kilometers. It connects India, the Gulf countries and Europe via the Indian Ocean and the Suez Canal. It is expected that, cargo traffic along the North-South corridor will almost double from 17 million to 32 million tons per year by 2030. Three routes on the corridor are being considered (Silk Road Briefing, 2023):

- Central Asia - Persian Gulf (Eastern Route) provides railway transportation via Kazakhstan and Turkmenistan.
- The Caucasus-Persian Gulf (Western Route) carries out transportation from Iran on motorroad via Azerbaijan and through the Resht checkpoint.
- Caspian Sea - Islamic Republic of Iran - Persian Gulf (Central Route) is a direct sea transport route from Russia to Iran via the Caspian Sea.

The final destination in Iran is Bandar Abbas port, from where goods can be transported to India by sea.

Azerbaijan joined the mentioned project in 2005. According to the Deputy Minister of Digital Development and Transport of Azerbaijan, 5 million tons of cargo are planned to be transported through this corridor annually, and this figure is expected to increase to 20 million tons in the future. Although its implementation was postponed for a long time due to delays on the part of partners, a new breath of life was given to this project upon the Baku Declaration being signed by the officials of Azerbaijan, Russia and Iran on September 9, 2022 as a result of Azerbaijan's growing influence in the region and the world due to the implementation of transport infrastructure projects in the country over the years and it was announced at this meeting that the transportation along the corridor covering the three countries will reach 30 million tons by 2030 (AzerNews, 2023).

The railway on the Resht-Astara section (164 km) in Iran has not yet been built (Ministry of Economy of Azerbaijan, n.d.). However, the Western Route of 1,450 kilometers is considered to be the most popular and well-developed. Interest in this route has increased even more after the sanctions imposed on Russia due to the Russian-Ukrainian conflict. For example, in the first quarter of 2023, the volume of transit cargo traffic on this route amounted to 2.15 million tons, which is 84.4% more than the figure for the same period in 2022 (1.16 million tons). Although an agreement on the construction of this line was not signed between Iran and Russia in 2023 and the plans to commission the 164-kilometer section of the Resht-Astara route by mid-2024 were not realized, this gives hope that the Western Route of the North-South Corridor may operate at full capacity (Silk Road Briefing, 2023).

According to the strategic roadmaps, Azerbaijan is expected to receive the following shares from the increase in transit trade (President.az, n.d.):

- on the China-Europe route - 3%;
- on the Central Asia-Europe route - 25%;
- on the Russia-Iran route - 40%;
- on the Iran-Black Sea route - 25%;
- on the Central Asia-Black Sea route - 40%.

Eurasian Development Bank reported in the late 2022 that it has identified more than 100 investment projects along the North-South corridor totaling more than US\$38.2 billion to be implemented by 2030, of which US\$10.7 billion will be in the form of Category 1 projects (three categories in total). 20 projects are related to railways and 59 ones to highways. They

cost US\$ 11.6 billion and US\$21.6 billion respectively. It is planned to implement 8 projects on the development of seaports, 4 on shipbuilding, 4 on the development of inland waterways and 7 on the development of state border checkpoints and related infrastructure. State budgets are the main sources in financing the North-South corridor: the state share in Azerbaijan and Kazakhstan reaches 80%, and in Russia - 76% (Eurasian Development Bank, n.d.).

69% of funds should be allocated for the development of the Western route, 19.2% for the Trans-Caspian route and 11.1% for the Eastern route respectively. The cost of projects by country is as follows (Винокуров, Ахунбаев, Забоев & Усманов, 2022, p. 5):

- Azerbaijan – US\$2.79 billion (mostly category 1).
- Armenia – US\$1.85 billion (mostly category 1).
- Georgia – US\$0.56 billion (category 1 only).
- Iran – US\$12.87 billion (mostly category 2).
- Kazakhstan – US\$6.32 billion (mostly category 3).
- Russia – US\$13.21 billion (mostly category 2).
- Turkmenistan – US\$0.63 billion (mostly category 1).

In order to modernize the railway transport in Azerbaijan, 3,100 freight cars, including 600 oil tank cars, 400 boxcars, 1,000 semi-trailers, 400 fitting platforms, 300 grain carriers, 200 fitting platforms for large-tonnage containers, 100 cement carriers and received 100 Hoppers were purchased from “Uralvagonzavod” Russian factory in 2015. In addition, Azerbaijan Railways holds an option for 14,000 freight cars of this factory (Караваев & Тишехьяр, 2019).

According to experts, the main advantage of the North-South corridor is the reduction of cargo delivery time. For example, transportation expert Mazinashvili writes that **“while it takes more than a month to deliver cargo from St. Petersburg via the Suez Canal to the Indian port of Mumbai via the southern sea route, it takes ten days via Azerbaijan through the Caspian region.”** Pointing to the North-South corridor leading to the Suez Canal, he adds that **“it will be impossible to replace the Suez Canal without the Azerbaijan and Zangazur corridor”** (Мазниашвили, n.d.)!

Azerbaijan is implementing the following projects to improve the capacity and security of the North-South corridor (Винокуров, Ахунбаев, Забоев & Усманов, 2022, p. 53-54):

1. Modernization of the Astara-Alat railway section: construction of an additional main track and electrification of the entire section. Cost: 1 billion US\$190 million . Implementation period: 2019-2027.

2. Modernization of Sumgait-Yalama railway section: reconstruction of 166.5 km section, bridges and aqueducts, repair of crosswalks. Cost: US\$200 million. Implementation period: 2019-2023.

3. Construction of Horadiz-Agband Railway: Construction of a 110 km double-track railway in Nakhchivan Autonomous Republic (50% of the road is ready by 2022). Cost: US\$400 million. Completion date: 2023. This project is essentially the restoration of railway communication between Azerbaijan and Iran through the Julfa checkpoint.

4. Modernization of the Astara railway crossing in Azerbaijan: increase in the number of receiving and dispatching points, expansion of freight loading areas and temporary storage warehouses, and installation of additional loading equipment. Cost: US\$60 million.

Implementation period: 2025-2030. The realization of this project will significantly reduce the time of cargo loading at the border of Azerbaijan and Iran upon the commissioning of the Resht-Astara section.

5. Modernization of the Samur border crossing: increasing capacity and reducing crossing time through synchronization with the Derbent border railway crossing in Dagestan. Cost: US\$75 million. Implementation period: 2025-2030.

6. Construction of a bulk cargo terminal at the new seaport of Alat in Baku: ensuring loading capacity of 2,5-3 million tons of bulk cargo and fertilizers per year. Cost: US\$5 million. Implementation period: 2023.

7. Completion of the 3<sup>rd</sup> stage of the construction of the New Alat Sea Port: expansion of container terminals, construction of new berths and bringing the port's cargo turnover to 21-25 million tons (1 million 20-ton containers). Cost: US\$150 million. Implementation period: 2025. Implementation of the last two projects will increase the volume of multimodal transportation by sea along the North-South corridor.

8. Construction of Baku-Russian border expressway: Construction of a new expressway of 150 km in phases consisting of 5 stages. Cost: US\$706 million. Implementation period: 2023. Implementation of this project will significantly reduce the time of delivery of cargo and passengers from Baku to the border with Russia and back, both due to high speed and by reducing the distance by 16 km.

It is also planned to integrate the North-South corridor into the Baku-Tbilisi-Kars railway.

**TANAP project and the Southern Gas Corridor.** The agreement on the construction of the 1,850 kilometer Trans-Anatolian Natural Gas Pipeline (TANAP) was signed by Turkish President R.T.Erdogan and the Azerbaijani President I.Aliyev in June 2012. This US\$ 7 billion project was the first partnership between Azerbaijan and Turkey in the field of energy transit. In the first period, TANAP is planned to transport 16 billion cubic meters of gas per year from Azerbaijan's "Shah Deniz II" field (of which 6 billion will be delivered to Turkey, starting in 2018, and the rest to Europe via the 870 km Trans Adriatic Pipeline (TAP) starting in 2019 (Çelikpala & Veliyev, 2015, p. 129), then 23 billion cubic meters of gas for 2023, in 31 billion cubic meters of gas per year from 2026 (Weitz, 2015, p. 12-13).

The connection of TANAP and TAP is called a "golden seam" in scientific literature. 58% of the TANAP project is held by SOCAR and 30% by the Turkish Oil Company Botas. The total length of SCPX, TANAP and TAP pipelines is about 3,206 kilometers. Thus, the pipeline called the Southern Gas Corridor, which is an alternative energy source for Europe by supplying gas resources from the Caspian Sea basin to European markets, consists of four projects with an investment cost of about US\$40 billion (Stoica, 2019):

- Exploitation of the Shah Deniz gas condensate field (SD1) and its operation at full capacity (SD2);
- Construction of the Trans-Anatolian Natural Gas Pipeline (TANAP);
- Construction of the Trans Adriatic Pipeline (TAP);
- Operation of the South Caucasus Pipeline (SCP) and its expansion (SCPX).

**Zangazur Corridor.** Despite the fact that one of the branches of the middle corridor is a very short (44 kilometers) road, there are certain reasons for the political games around this corridor. For Azerbaijan it is first of all a natural and shortest route to Nakhchivan, passing through the historical territories of Azerbaijan.

It is a fact that this corridor, which is now on the Republic of Armenia, which was historically always the territory of Azerbaijan until the 1920s. Even when Azerbaijan was part of the Iranian Empire, and of the Russian Empire at the beginning of the XIX century, this territory was part of the Karabakh Khanate, and Azerbaijanis dominated here in every sense. In 1918, when independent national states were established in the three countries of the South Caucasus, including the first Armenian state of the Hai people in the history on the lands of Azerbaijan, the Zangazur corridor naturally became an integral part of the Republic of Azerbaijan. It was only after Bolshevik Russia invaded the South Caucasus in 1920 that these lands were torn away from Azerbaijan and given to the Armenian SSR, which was due to the coincidence of interests of Armenians and the USSR leadership. Armenians, realizing the plans of the so-called Great Armenia, expanded their territory once again at the expense of Azerbaijan, while the USSR leadership blocked the transport communication between Turkey, its traditional rival in the region, and other Turkic states. Thus, the Zangazur corridor, which connects Nakhichevan with the rest of Azerbaijan by the shortest route, is now considered to be the territory of Armenia, and this state, going against its interests, has created obstacles to the opening of this corridor. According to experts' studies, Armenia's economic benefits from the launch of the corridor are higher than Azerbaijan's (Gawliczek & Iskandarov, 2023, p. 40):

- Both countries will benefit “significantly” (+++) in terms of fiscal revenues;
- Armenia's benefit from trade in goods is “medium” (++) and Azerbaijan's benefit “insignificant” (+);
- Trade in services: Armenia “low” (+), Azerbaijan “very low” (0);
- Electricity supply: Armenia “high” (+++), Azerbaijan “medium” (++);
- Gas supply: Armenia “medium” (++) , Azerbaijan “little” (+);
- Water supply: Armenia “very low” (0), Azerbaijan “high” (+++);
- Financial markets and investments in both countries are at a “high” level (+++).

Iran has also encouraged Armenia not to open the Zangazur corridor trying to cover it with political motives, calling one of them “the realization of the Turan project, which poses a threat to Armenia”. In fact, behind this intention are primarily economic factors (Gawliczek & Iskandarov, 2023, p. 41):

- Currently, Nakhchivan's gas demand of 350 million cubic meters is met by Iran, 15 percent of which is paid by Azerbaijan to Iran as a transit fee. The opening of the new corridor means that Iran will lose this benefit.
- According to the agreement made in 1996, Turkey has been buying gas from Iran for 27 years and currently pays Iran US\$490 per thousand cubic meters, whereas if the Zangazur corridor pipeline is built, Turkey could buy the same volume from Azerbaijan for US\$ 335, which would be a huge loss for Iran.
- A planned gas pipeline project from Turkmenistan to Europe via Iran and Turkey was frozen in 2017 due to disagreements over funding. By connecting this pipeline lying from Turkmenbashi to Azerbaijan to the Baku-Tbilisi-Erzurum pipeline, the possibility of supplying Turkmen gas to Europe via Azerbaijan will become a reality.
- The normalization of Azerbaijani-Armenian relations reduces the importance of the Iran-Armenia pipeline.
- In addition, since the trade route from Turkey to the Central Asian region passes through Iran, this route will also lose its importance with the opening of the new corridor.

Azerbaijan Railways CJSC announced that along the corridor, 9 railway stations, 3 tunnels and dozens of bridges, including a 418-meter railway bridge over the Hakari River will be built.

**Igdir-Nakhchivan gas pipeline.** On September 23, 2024, during the visit of Turkish President Recep Tayyip Erdogan to Nakhchivan, an agreement was reached between the presidents of the two countries on the construction of this pipeline (Turan.az, 2023).

**Kars-Nakhchivan railway.** A protocol of intent for the construction of this road was signed between the presidents of the two countries during Recep Tayyip Erdoğan's visit to Nakhchivan (Report.az, 2023).

Information about the projects implemented by Azerbaijan in the transport and energy sectors is provided in detail in (OECD, n.d.).

Thus, as seen, Azerbaijan occupies a key position in the process of realization of the One Belt, One Road project. The infrastructure projects implemented, both within the North-South and Central corridors, have further expanded the opportunities for international transportation, creating incomparable conditions for cheap, fast and comfortable transportation of cargo and passengers. This is an undeniable fact, which is also noted by international experts (Silk Road Briefing, 2023).

### **3. Transportations on the Azerbaijan section of BRI Middle Corridor**

The BRI Middle Corridor is designated in the official statistics of Azerbaijan as the Europe-Caucasus-Asia transport corridor. Statistics of recent years show that transportation along this corridor accounts for about a quarter of the total transportation volume of Azerbaijan's transport system. It is also worth noting that this share increased to 30% by 2022. Another trend is the rapid growth of transit cargo: while the volume of non-transit cargo decreased by 2.5% compared to 2019, the volume of transit cargo increased by 68.8%. While transit transportation accounted for 13.3% of total transportation via the ESA Corridor in 2019, this increased to 20% in 2022 (Table 1).

Finally, despite the decline in the share of road freight transport along this corridor, this remains the main mode of transport: its share of total freight transport along the ESA Corridor each year in the period 2019-2022 was 56.9%, 44.1%, 44.6% and 43.0% respectively. There has been a steady increase of special weight in railway transport: 28.1%, 36.2%, 37.2%, and 37.4%, respectively, in the same period. Although there are fluctuations in maritime transportation, the general trend is an increasing share: 15.0%, 19.8%, 18.2% and 19.6% respectively, in recent years.

**Table 1: Cargo transportations on the Azerbaijan section of the Europe-Caucasus-Asia Transport Corridor**

|                                                                                                                | 2019    | 2020    | 2021    | 2022    | 2022:<br>2019, % | 2022:<br>2021,<br>% |
|----------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|------------------|---------------------|
| Total transported cargo by Azerbaijani transport, thousand tons                                                | 235,288 | 188,629 | 193,903 | 218,716 | -7.0             | 12.8                |
| Cargo transported in the Azerbaijan section of the ESA corridor, thousand tons                                 | 60,839  | 46,873  | 48,453  | 65,056  | 6.9              | 34.3                |
| Share of the total cargo transported in the Azerbaijan section of the ESA corridor by Azerbaijani transport, % | 25,9    | 24,8    | 25,0    | 29,7    |                  |                     |
| Cargo transported, thousand tons                                                                               | 52,762  | 38,491  | 39,627  | 51,421  | -2.5             | 29.8                |
| Railway                                                                                                        | 13,327  | 12,820  | 13,463  | 16,841  | 26.4             | 25.1                |
| including by Baku-Tbilisi-Kars Railway                                                                         | 112     | 224     | 477     | 413     | 270              | -13.6               |
| Sea                                                                                                            | 4,824   | 5,015   | 4,558   | 6,613   | 37.1             | 45.1                |
| Highway                                                                                                        | 34,611  | 20,656  | 21,606  | 27,967  | -19.2            | 29.4                |
| Transit cargo transported, thousand tons                                                                       | 8,077   | 8,382   | 8,826   | 13,635  | 68.8             | 54.5                |
| Railway                                                                                                        | 3,796   | 4,132   | 4,585   | 7,478   | 97               | 63.1                |
| including by Baku-Tbilisi-Kars Railway                                                                         | 100     | 217     | 429     | 341     | 24.,4            | -20.5               |
| Sea                                                                                                            | 4,281   | 4,250   | 4,241   | 6,157   | 43.8             | 45.2                |
| Highway                                                                                                        | ...     | ...     | ...     | ...     | -                | -                   |

*Calculated and compiled by the author based on data from [www.stat.gov.az](http://www.stat.gov.az)*

The decrease in passenger transportation in 2022 compared to 2019 (Table 2) is explained by restrictions on intercity passenger transportation by land transport. Accordingly, the share of passenger transportation along the ESA Corridor in the total number of passengers carried by Azerbaijani transport also decreased significantly (from 19.8% to 7.9%).

Despite a 54.2% increase in revenues from total transportation by Azerbaijan transport in 2019, the revenues from cargo and passenger transportation in the Azerbaijan section of the ESA Corridor decreased by 2.9%. Most of the transportation revenues in the Azerbaijani section of the ESA Corridor are from cargo transportation: 80.5% in 2019, 88.6% in 2020, 94.1% in 2021, and 94.4% in 2022. In this issue, there are significant transformations observed in the contribution of transport modes: while road transport dominated in 2019 accounting for 45.5% of freight transport along the ESA Corridor (34% railway, 20.5% maritime transport), in the following years, the share of railway transport increased, rose to the first place with 45.5% in 2022, while the share of road transport dropped to 31.9%. Maritime transport has always ranked third on this route with a share of 20-25% (Table 2).

**Table 2: Passenger transportation on the Azerbaijan section of the Europe-Caucasus-Asia transport corridor and revenues generated**

|                                                                                                                                                                        | 2019      | 2020      | 2021      | 2022       | 2022:2019,<br>% |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|------------|-----------------|
| Total number of passengers transported by Azerbaijani transport, thousand people                                                                                       | 1,819,834 | 1,102,923 | 1,123,921 | 1,412,433  | -22.4           |
| Passengers transported in the Azerbaijani section of the ESA Corridor, thousand people                                                                                 | 360,612   | 158,411   | 75,798    | 111,836    | -69.0           |
| Share of the number of passengers transported in the Azerbaijani section of the ESA Corridor in the total number of passengers transported by Azerbaijani transport, % | 19.8      | 14.4      | 6.7       | 7.9        |                 |
| Railway                                                                                                                                                                | 3,589     | 1,047     | ...       | ...        | -               |
| Sea                                                                                                                                                                    | 22        | 20        | 18        | 22         | 0.0             |
| Highway                                                                                                                                                                | 357,001   | 157,344   | 75,780    | 111,814    | -68.7           |
| Revenue from total transportation by Azerbaijani transport, thousand manats                                                                                            | 7,012,824 | 6,984,744 | 8,662,828 | 10,812,380 | 54.2            |
| Revenue from cargo and passenger transportation in the Azerbaijani section of the ESA Corridor, thousand manats                                                        | 836,471   | 578,882   | 573,797   | 778,349    | -6.9            |
| Share of revenue from transportation in the Azerbaijani section of the ESA Corridor in total revenue from transportation by Azerbaijani transport, %                   | 11.9      | 8.3       | 6.6       | 7.2        |                 |
| Revenue from cargo transportation in the Azerbaijani section of the ESA Corridor, thousand manats                                                                      | 673,207   | 513,141   | 539,843   | 734,913    | 9.2             |
| Railway                                                                                                                                                                | 228,960   | 211,299   | 230,991   | 334,430    | 46.1            |
| including Baku-Tbilisi-Kars railway                                                                                                                                    | 2,272     | 3,549.9   | 5,828.3   | 4,201      | 84.9            |
| Sea                                                                                                                                                                    | 138,116   | 130,913   | 122,369   | 165,885    | 20.1            |
| Higway                                                                                                                                                                 | 306,131   | 170,929   | 186,483   | 234,598    | -23.4           |
| Revenue from passenger transportation in the Azerbaijani section of the ESA Corridor, thousand manats                                                                  | 163,264   | 65,741    | 33,954    | 43,436     | -73.4           |
| Railway                                                                                                                                                                | 4,567     | 951       | ...       | ...        |                 |
| Sea                                                                                                                                                                    | 2,284     | 1,128     | 2,996     | 6,179      | 170.5           |
| Highway                                                                                                                                                                | 156,413   | 63,662    | 30,958    | 37,257     | -76.2           |

*Calculated and compiled by the author based on data from [www.stat.gov.az](http://www.stat.gov.az)*

#### **4. Advantages and Limitations of the Middle Corridor and the North-South Corridor**

In this section we study the North-South Corridor, along with the BRI, as an important component of Azerbaijan's integration into the international transportation system. On one hand, Azerbaijan and Armenia have agreed to exclude the issue of opening communications from the peace treaty, and on the other hand, negotiations to accelerate the construction of the unfinished Iranian section of the Resht-Astara section of the North-South Corridor have intensified. In addition to economic benefits, the study of this corridor is conditioned by a number of political issues.

The North-South Corridor is an important transportation component of the Eurasian continent, connecting to many important corridors existing in China, Central Asia, the South Caucasus and Europe.

Despite the restrictions on the North-South Corridor due to sanctions against Russia and Iran, it has other users besides Russia and Iran, such as China and India.

Finally, the geopolitical situation, which has changed dramatically since February 2022, has also increased interest in this corridor. Until that date, exports to Europe from China and many Asian countries were carried out mainly through Russia. Currently, this direction is closed due to sanctions.

On the Trans-Caspian Corridor. The main purpose of the BRI offered by China is to supply Chinese goods to the Middle East and Europe. Azerbaijan's main benefit here is the revenues it will receive as a transit country. However, numerous additional advantages are also manifested here. The role and advantages of Azerbaijan in the implementation of the BRI are characterized in detail in the article "The BRI and Azerbaijan: Expert Opinion" by Dr. Mehmood Ul Hasan Khan, Professor at the University of Punjab, Expert on Integrated Eurasian Policy, South and Central Asia and the South Caucasus, published in December 2022: "Location of the Baku-Tbilisi-Kars and Black Sea Transmission Line Planning Project (BSTP) on the Central Corridor makes Azerbaijan a key country in terms of realizing the BRI potential. It takes 36 days to deliver goods from China to Europe by sea and 20 days via the Trans-Siberian route. However, delivery via the Central Corridor, in which Azerbaijan plays an important role, takes 12 days. This strengthens Azerbaijan's position as a regional transit hub. Azerbaijan's decisive role in the North-South corridor as well as in the East-West corridor further strengthens its strategic role not only for China, but also for Europe and regional countries. The increased capacity of the BTK further strengthens Azerbaijan's strategic importance within the BRI" (Khan, 2022).

##### **Advantages.**

The Trans-Caspian and North-South corridors have obvious advantages from passing through Azerbaijan:

1. *Advantageous position of Azerbaijan as the main link of the Trans-Caspian Corridor.* The EU report notes that Azerbaijan plays a leading role in trade along the TRACECA corridor (European Union, Egis International, & Dornier Consulting, 2014, p. 4).

2. *Strong public administration system that ensures security.* One of the important cares of transnational companies is the safe delivery of their products to customers. Nowadays, this problem has become more pronounced and most countries are unable to ensure the safety of transit cargo passing through their territory. Despite wars, coups and other upheavals in its immediate vicinity, as well as long-standing separatism and the 44-day Patriotic War on its

territory, Azerbaijan has established itself as the most stable and secure country in the region. As a result, major companies trust the guarantees of the Azerbaijani government in this regard (AzerNews, 2023).

3. *Superiority over other routes in terms of delivery time.* For this reason, according to some authors, the Middle Corridor is the safest, fastest, and cheapest transportation route along the BRI.

4. *Policy of improving customs procedures.* The EU report states that Azerbaijan is striving to use the best global practices in customs policy - the “single window” principle is already applied at some customs terminals, and border crossing times are reduced several times (European Union, Egis International, & Dornier Consulting, 2014, p. 33).

5. *Reliable partner image of Azerbaijan.* The complete consistency of statements and actions of the Azerbaijani leadership in recent years, as well as its commitment to agreements further reinforce this image.

6. *High quality of physical transportation infrastructure.* This is one of the important factors that attracts logistics companies to Azerbaijan. The largest merchant fleet in the Caspian Sea and the modern shipyard, the modernized Baku Commercial Sea Port, the Baku- Tbilisi-Kars railway, and the highways passing through the country meet high international standards.

7. *High quality and gradually upgrading transport infrastructure of Azerbaijan.* This is confirmed by the studies we conducted above.

8. *Modernization of highways.* The asphaltting of dirt roads inherited from Soviet times is almost complete. More than 3,000 km of new roads have been built, now the main concern is improving the quality of roads (Data Collection Survey, 2019, p. 31).

9. *End of the Nagorno Karabakh conflict.* This have further strengthened the safety of the Middle Corridor.

10. *Commissioning of new ports.*

11. *Opening of alternative communication lines.* The complete cessation of the Nagorno Karabakh conflict created favorable conditions for the opening of new communication routes, including the Zangazur corridor.

12. *Attracting foreign investors.* This process, especially noticeable in the liberated territories, further strengthens the country’s economic image.

13. *Establishment of a logistics center.* Implementation of this project with government support at its initial periods increases its potential for success.

14. *Unique role of Azerbaijan in trade relations between China and Turkey.* Azerbaijan’s developing relations with China, Turkey and Central Asian countries further strengthen this role.

15. *Increased activity of the Central Asian countries.* The restoration of Azerbaijan’s territorial integrity and further strengthening of its political subjectivity also contribute significantly to weakening the dependence of the Central Asian countries on Russia and in the end, to opening of the Middle Corridor.

**Limitations and obstacles.** The EU report on the transport sector of Azerbaijan, along with the advantages of Azerbaijan, notes a number of shortcomings (European Union, Egis International, & Dornier Consulting, 2014, p. 32-34):

1. *Lack of trade facilitation strategy.*

2. *Lack of clear and consistently applied uniform border crossing rules.*

3. *Long border crossing times by railway.* The EU report notes that the average delay time for trains at the border is 8 hours.

4. *Problems with border crossing by trucks.* Bilateral quotas, complicated visa procedures for drivers, and unofficial payments further deepen these problems.

5. *Multimodality.* The need to use ferries and ships is a disadvantage of the Trans-Caspian Corridor compared to the Northern and Southern Corridors. In these cases, as a rule, transport on the routes connecting the Eastern Caspian and Western Black Sea countries has to cross at least 5 border crossings. Border crossing procedures (including at seaports) are regulated by the legislation of origin and destination countries, and experience shows that resolving these difficulties is essential for the success of the corridor. There are more such formalities at seaports than on land. In this case, there are indirect losses in addition to direct financial and time losses. Also experience shows that there are also unofficial costs in addition to official costs on the Trans-Caspian route.

6. *Numerous regulations and controls required by various authorities.*

Other shortcomings are noted in the final report of the study conducted by the Nomura Research Institute of the Japan International Cooperation Agency in Azerbaijan (Japan International Cooperation Agency & Nomura Research Institute, 2014, p. 32, 44):

7. *Problem of railway electrification.* The length of railways in use has decreased to 2,100 km since 2000. The main reason of this case is that some lines are not in use and others are under repair. 1,200 km of these roads, i.e. less than 60%, have been electrified and this process is progressing very slowly. Azerbaijan Railways (ADY) currently owns 204 electric locomotives, of which only 96 are actively used. 46 of them are new models with a service life of less than 15 years. The rest have been in operation for 35 years and are often out of service. At the same time, ADY uses 3 kV direct current, while in Europe it is 25 kV, and the introduction of this technology is costly. 20% of passenger cars are 11-15 years old, 65% are 15-20 years old, and 15% are more than 25 years old. Out of 729 railcars, 490 cars are in operation, the rest have either reached the end of their service life or require repair.

8. *Lack of railcar repair facilities in Azerbaijan.* ADY railcars are repaired abroad, and considering that 40% of passenger cars are used in international transportation and require repair, this is a serious deficit.

9. *Financial constraints.* For example, in order to implement plans for establishment of an airport free trade zone, the airport area needs to be expanded and warehouses need to be built. However, neither the Ministry of Transport nor the Civil Aviation Agency has the financial resources to do this, and these investments are entrusted directly to the operators.

The dependence of the Azerbaijan economy on oil and depletion of its production further exacerbate financial constraints. In such cases, it is possible to attract free capital available in the world. The development of Dubai and Singapore was made possible precisely thanks to foreign capital. At the same time, free finance was available even in the late 20<sup>th</sup> century and early 2000s when these investments were made, however the modern period, that Azerbaijan is in need, coincides with the global financial crisis of 2007-2010 and the global economic crisis caused by the 2020 COVID-19 pandemic, which further aggravates deepens the problem (Valiyev & Bilalova, 2020, p. 13).

10. *Unsatisfactory condition of railroads.* One of the main reasons for this is that Azerbaijan still applies the backward safety and technology standards of the Russian Ministry of Transport, which impose weak requirements on roads and railcars. As a result, the number of dangerous situations on railroads has increased over the last 30 years, and the speed limit on some road sections has been reduced to 20 km/h. Another negative effect of this is that the peak freight traffic, which reached 30 million tons in 2006, halved in 2016 to 15 million tons. Passenger volume peaked at 6.6 million in 2007 and fell to 2 million passengers in 2016.

Although freight transportation increased to 18.7 million tons and passenger traffic to 5.1 million people in 2022, these figures are still well below maximum levels.

11. *Lack of professional staff.* This case is observed in many areas. For example, the government of Azerbaijan is implementing a major project to introduce advanced logistics technologies to increase transit cargo transportation. With almost none of the staff familiar with the basics of trade and supply chain management, the process takes its own path.

In addition to the comments of these two agencies:

12. *No access to the ocean.* At present time, a significant obstacle for Azerbaijan's foreign economic relations, especially export-import operations, is the lack of direct access to the ocean. Since such countries are referred to as "land locked development countries (LLDC)" in the English-language scientific literature. In contrast, ocean-going countries are referred to as "coastal transit countries" (CTCs). The sharp difference between the import-export performance of these two types of countries is shown by the World Bank as follows: the average annual export per capita in the LLDC countries is US\$2,930, while it is US\$77,300 in CTC countries, the export period is 42 and 22 days respectively, the export value per container is US\$3,203 and US\$1,287 US Dollars respectively, the import period is 47 and 27 days respectively, the export value per container is US\$3,884 and US\$1,602 respectively (Garibov, 2017, p. 9).

Six countries located in the Caspian region are landlocked. Azerbaijan, Kazakhstan and Turkmenistan are located on the coast of the Caspian Sea, while the Trans-Caspian Corridor is the shortest corridor for Uzbekistan, Tajikistan and Kyrgyzstan for access to the sea. The distances from the nearest seaports of these countries are among the largest in the world: Azerbaijan - 870 km, Turkmenistan - 1,700 km, Uzbekistan - 2,950 km, Kazakhstan and Tajikistan - 3,100 km, Kyrgyzstan - 3,600 km, Kazakhstan - 3,750 km. Uzbekistan's access to the sea passes through two countries. In addition to the problem of remoteness of ports for landlocked countries, the problem of dependence on transit countries can also be important. There are four types of such dependence (Garibov, 2017, p. 14-15):

- Dependence on transit infrastructure. This is why Azerbaijan has invested US\$775 million in the Georgian section of the Baku-Tbilisi-Kars railway and is offering Iran a loan of US\$500 million for the Resht-Astara project.

- Political relations with the neighboring country. Armenia's aggressive policy towards Azerbaijan led to Azerbaijan's decision to transport its hydrocarbon resources to the Middle East and Europe through Georgia rather than through Armenia, which is more economically advantageous, by building the Baku-Tbilisi-Kars pipeline.

- Level of peace and stability in transit countries. As known, the relevance of the Trans-Caspian and the North-South corridors has further increased after the Russian-Ukrainian war, and East and Central Asian countries have also become more interested in these corridors (Dairabayeva, 2015). Transportation of Chinese goods through the Northern Corridor has been reduced by 40% in 2022 (Newsilkroadiscovery.com, n.d.). Administrative procedures in crossing.

Being a LLDC country is an individual problem for Azerbaijan. At the same time, this fact negatively affects Azerbaijan's value as a transit country. The most obvious manifestation of this is Azerbaijan's dependence on Georgia and Turkey, which have access to the ocean, as transit countries of the Trans-Pacific Partnership, as well as on Russia and Iran, which have access to the ocean, along the North-South corridor. It is true that this dependence is mutual, but the availability of alternative routes for these countries is Azerbaijan's competitive disadvantage.

A study of 92 landlocked, low- and middle-income countries based on 1960-1992 indicators found that the economic growth rate of such countries is 1.5% lower than that of coastal countries. **The authors advise such countries to focus not on trade policies, but on alternative transportation routes and regional trade agreements.** According to the results of other authors who conducted similar studies using the gravity model, only 30% of trade of an average coastal country is accounted for by landlocked countries (Raballand, 2003, p. 523).

13. *Azerbaijan is not a member of the WTO.* Chinese companies have shown great interest in participating in the privatization of Azerbaijan's public sector. Azerbaijan's public sector has great investment potential. However, due to delays in concluding bilateral agreements and Azerbaijan's decision not to join the World Trade Organization, many Chinese investments have not been made in the public sector of Azerbaijan (Azizov, Karimli & Babayev, 2021, p. 133-134).

14. *Weak Chinese activity in the Caucasus region.* China's focus on the Middle Corridor is weak compared to other BRI corridors, especially neighboring countries, which can be explained by the low capacity of the corridor in the current situation – 3-5% of Chinese merchandise exports was carried out through the Middle Corridor in 2022 (Newsilkroaddiscovery.com, n.d.).

15. *Poor legal framework.* This prevents Azerbaijan from attracting foreign direct investment, with the exception of some countries.

16. *Restrictions on large tonnage vessels.* The only waterway connecting the Caspian Sea to the Black Sea is the Volga-Don Canal, through which large vessels and tankers cannot pass. The largest vessel that can pass through this canal can only carry 450 20-foot containers. In order to increase the cargo capacity it is necessary to build ships of certain sizes (width of at least 30-35 meters, draft of 8 meters), as well as build a deep-water backwater and the necessary infrastructure in the port to berth such ships. To this end, it is necessary to deepen the seaport by at least 6 meters annually, which will require additional 5-10 million manats. Another problem is related to the 25-30-year cycle of the Caspian Sea, during which the sea either recedes or returns to its original state. We are currently witnessing its receding by 200 meters, and this trend will continue in the coming decades. Thus, what is being built now is doomed to be on land soon (Сараблинска, 2017).

17. *Lack of public opinion formation.* Information coverage of both the BRI project and the North-South corridor in Azerbaijani society is weak, and this topic is discussed only among specialists within narrow limits.

18. *Failure to determine the status of the Caspian Sea.* Unresolved disputes over the boundaries of the Caspian Sea and the rights to use its resources remain a serious problem hindering cooperation between the Caspian states. Many geographers do not accept the term "sea" for the Caspian Sea, considering it the largest lake in the world. This is a very important distinction, as international law approaches the resolution of territorial claims related to seas and lakes differently. While the 1982 UN Convention on the Law of the Sea applies to the delimitation of seas between countries, the division of lakes into sectors is left to coastal states. Because of the relatively small amount of oil and gas in the Iranian sector of the Caspian Sea, Tehran prefers the approach of sea, not lake and insists that the Soviet-era agreements signed in 1921 and 1940 that describe the Caspian as a "common sea" of two countries (USSR and Iran) and transfer the control of the sea to Moscow and Tehran remain in force. Another unresolved issue concerns pipelines crossing the Caspian Sea. Iran and Russia, citing environmental motives, insist that such pipelines be approved by all Caspian littoral states, regardless of the territory through which they pass. Obviously, this approach is aimed at establishing the veto power of Russia and Iran over the Trans-Caspian pipeline, which is still

on the agenda and convenient for transportation of hydrocarbon resources of Azerbaijan, Kazakhstan and Turkmenistan to Europe. The Caspian Sea Summits held in Ashgabat in 2002, in Tehran in 2007, in Baku in 2010, and in Astrakhan in 2014 failed to resolve these disputes; environmental cooperation agreements have been signed, and in other cases two or more coastal countries may apply to security initiatives without consideration of other countries. For example, in May 2003, Kazakhstan, Azerbaijan and Russia agreed to share 64% of the northern part of the Caspian Sea, with Kazakhstan receiving the largest share, but Turkmenistan and Iran refusing to ratify this trilateral agreement (Weitz, 2015, p. 24-26).

19. *Competitive relations in the BRI countries.* China views Turkey, which is rapidly developing and has strong ties with Azerbaijan, as a competitor in the Central Corridor. This is not the only example.

20. *Competition of the Corridors.* As we mentioned above, there is serious activity around both the Central Corridor of the BRI and alternative corridors to the North-South corridor.

21. *Crossing of the Middle Corridor through many countries.* For example, when delivering Chinese and Indian products to Europe via Russia, the number of border crossings is significantly lower than along the Middle Corridor, which saves time and shortens delivery times.

22. *Limited alternative routes.* After gaining independence, Russia exerted pressure on the post-Soviet countries in making political and economic decisions. The dependence of the Central Asian countries on Russian markets and Russian transit routes has long had a negative impact on the flexibility of foreign trade of these countries (Idan & Shaffer, 2011, p. 249).

## **5. Measures to be implemented**

**Improvement of soft infrastructure.** Some of these measures are recommended in the above-mentioned EU report (European Union, Egis International, & Dornier Consulting, 2014, p. 35):

1. Application of barcoding of trucks. This will reduce the time for vehicles to cross the border from 108 minutes to 15-20 minutes.

2. Determining a minimum time limit for customs clearance.

3. Coordination of tariff policy. This involves the adoption of a new customs code harmonized with the EU norms, as well as the conclusion of agreements with key partner countries simplifying customs procedures.

4. Centralized border crossing procedures - transfer to the Customs Committee the responsibility for the timely implementation of phytosanitary, veterinary, environmental and other controls under the jurisdiction of various institutions (European Union, Egis International, & Dornier Consulting, 2014, p. 35).

In addition:

5. Digital control of vehicles and cargo, digitalization of documentation. According to expert estimates, the application of digital technologies in these issues is comparable in its impact to the construction of additional control stripes and checkpoints at crossings (Винокуров, Ахунбаев, Забоев & Усманов, 2022, p. 8).

6. Establishment of vehicle maintenance centers.

7. Improving payment mechanisms.

8. Marketing policy to attract new cargo flows.

9. The vast majority of cargoes transported from Azerbaijan are bulk cargoes (crude oil, coal, agricultural products, etc.) that require a small number of containers. These conditions require modernization of soft infrastructure. To this end, the Logistics and Trade Sector Strategic Roadmap envisages the formation of a Regional Logistics Center by 2025 and the introduction of advanced digital management systems, as well as investments to further strengthen the logistics functions of Baku International Airport and Baku International Sea Port. According to the study by the Japan International Cooperation Agency, an investment of AZN 3.1 billion is needed to achieve these goals. Entrusting such investments, especially the construction of logistics centers in border regions, to private companies would give effective results (Japan International Cooperation Agency & Nomura Research Institute, 2019, p. 29-30).

10. Interstate coordination in the corridor management.

11. Another direction of the required measures is to ensure a new high level of public-private partnership in the transportation sector. This includes customs duty and tax exemptions, as well as other support measures for companies investing in the transportation and logistics sector. In particular, support for the construction and operation of warehouses, processing, packaging and related industries will yield high economic and social results.

12. Mass application of the “single window” principle.

### **Physical Infrastructure Improvements.**

1. Application of modern technologies, including integrated and automated management and control systems to improve the quality and speed of railcar maintenance. This will allow to promptly manage and optimize the activities of railcar depots and stations on the line.

2. Construction of a railway line (or subway) connecting the airport with the center of Baku.

3. Creation of a transport hub to connect different modes of transportation, taking into account the multimodal nature of the Trans-Caspian Corridor.

4. Improving tourism infrastructure, especially near border areas.

5. Development of railway infrastructure along with already improved roads in the Azerbaijan section of the North-South Corridor.

6. Improvement of street lighting.

Other similar measures are proposed as a result of research conducted in Azerbaijan by the Japanese Research Institute Nomura (Japan International Cooperation Agency & Nomura Research Institute, 2019, p. 32-60).

7. As mentioned above, the 3 kW direct current used at ADY is incompatible with the 25 kW direct current used in Europe. To address this situation, ADY intends to switch to diesel locomotives instead of electrification.

8. Electrification of railroads and introduction of signaling systems under a 10-billion-Yen project implemented by Japanese companies.

9. Construction of a Japanese garden on the site of former oil wells.

10. The availability of free-flow volumes in the BTC pipeline requires additional oil transportation to fill the pipeline. Kazakh oil is the most suitable candidate for this. A certain

volume of Kazakh oil is delivered through this pipeline, but the vast majority of this oil passing through Azerbaijan is exported by railway. In the future, if the railway is filled with other products, the pipeline may become in demand for Kazakh oil as well.

11. It is planned to create free economic zones at the Baku International Sea Trade Port and the Heydar Aliyev Airport, as well as to build transit cargo processing enterprises on this basis with the involvement of private companies.

12. Studies continue on the implementation of “Digital Platform” for almost complete automation of seaport management. In addition, a center is being established for training the port operations. At the same time, the introduction of intermodal containers is planned.

13. Toward the development of renewable energy systems:

- Construction of Azguntex factory for production of equipment equipped with LED street lamps and converting solar energy into electrical energy;
- Construction of the Lokbatan Wind Power Plant;
- Construction of a facility producing granules of oil gas.

## **Conclusion**

According to the Davos Economic Forum 2022, Azerbaijan ranks 24<sup>th</sup> among the world countries in terms of road quality, 11<sup>th</sup> in terms of railway efficiency and 12<sup>th</sup> in terms of air transport efficiency. Heydar Aliyev International Airport ranks first among CIS countries according to the air transport assessment. Azerbaijan’s successes in improving transport infrastructure were described in detail by the President Mr. Ilham Aliyev in his speech at the summit of the Shanghai Cooperation Organization member states (Əliyeva, 2022):

- Over the last 20 years, 19,000 kilometers of roads and 1,400 kilometers of railway have been built or overhauled in Azerbaijan. After the victory in the Second Karabakh War, thousands of kilometers of roads and hundreds of kilometers of railways are being built in the liberated territories.

- Fizuli International Airport was commissioned in 2021 and Zangilan Airport in the following year. The third airport in the liberated territories is being built in Lachin region. Thus, by the end of 2024, 9 international airports will be operating in our country. Azerbaijan has one of the largest private air cargo fleets in the region with 18 airplanes.

- As for maritime transport, the capacity of the Baku International Sea Trade Port will be increased from 15 million tons to 25 million tons per year. In addition, he stated that the volume of transit through Azerbaijan increased by 50 percent in the first 7 months of 2022.

- Azerbaijan has the largest private cargo fleet on the Caspian Sea with 52 vessels. The Baku Shipyard is capable of producing all types of vessels.

- Opening of the Zangazur corridor will make a significant contribution to the realization of the huge transport potential of the countries in the region.

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