

SOCIAL SCIENCES

CONCEPTUAL APPROACHES TO REGIONAL TRANSPORTATION PLANNING IN OCCUPIED TERRITORIES

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Abstract

After the glorious victory of the Azerbaijani Army and the end of the 30-year occupation, organizational planning of regional transport infrastructure in the liberated territories is very crucial, which will provide comprehensive development of the territories, revive the territories completely plundered by Armenia and restore decent accommodation.

In this regard, in addition to the restoration of large and strategically important cities and settlements, in accordance with the "Strategic Action Plan to address socio-economic, humanitarian, solving organizational and other urgent issues in the liberated territories of the Republic of Azerbaijan", reconstruction of the general transport infrastructure of the liberated territories have also begun.

Considering the need for a comprehensive and systematic approach to the restoration of transport infrastructure and organization of services in the liberated territories, the article prepares proposals for the organization of regional transport infrastructure in the liberated territories of Azerbaijan Republic and conceptual approaches to regional transport planning in Karabakh.

The article identifies key issues in the process of building regional transport infrastructure and organization of services in Karabakh, as well as requirements and approaches, and reflects the measures of goal-oriented planning of available resources.

Keywords: liberated territories, Zangazur corridor, development vectors, cluster, regional development alternatives, transport infrastructure, logistics centers, regional transport planning.

1. Available information - by region.

During the preparation phase, topographic map data of the project area at a scale of 1: 25000 (for 2015-2020) was obtained and data catalogs were created in the geographic information system (GIS).

1.1. Economic and administrative regions - by region.

The total area of the project area is about 1.36 million hectares, which covers 15.7% of the country's territory. According to the Classification of Administrative Territorial Distribution (AZS 882: 2020), which is officially published by the State Statistics Committee and is the State Standard of the Azerbaijan Republic, 1041 Territorial Units for 400 Administrative Territorial Districts are covered in the liberated territories. Considering the Administrative Territorial Districts, 13 of them are urban, 38 are settlements, and 339 are rural

Administrative Territorial Districts. On the other hand, as the Territorial Units, 14 of them are urban, 47 are settlements, and 980 are rural Territorial Units. The number of administrative territorial districts covered by the Karabakh economic region is 210, and the number of territorial units is 491. 8 of the Administrative Territorial Districts are urban, 35 are settlements, and 167 are rural Administrative Territorial Districts. Moreover, 9 of the territorial units are urban, 36 are settlements and 446 are rural. 550 Territorial Units of 180 Administrative Territorial Districts of East Zangazur economic region are covered. From the Administrative Territorial Districts, 5 of them are urban, 3 are settlements, and 172 are rural Administrative Territorial Districts. 5 of the territorial units are urban, 11 are settlements and 534 are rural.

Table 1.

Administrative division of the project area, (unit)

| District | | İÖD | | | | İÖV | | | | Area (hectar) |
|--------------------|--------------------------|-----------|-----------|------------|------------|-----------|-----------|------------|-------------|------------------|
| Economic districts | Administrative districts | City | Town | Village | Total | City | Town | Village | Total | |
| Karabakh | Aghdam | 1 | 13 | 34 | 48 | 1 | 14 | 123 | 138 | 115812.4 |
| | Fuzuli | 2 | 16 | 27 | 45 | 2 | 16 | 82 | 100 | 138926.3 |
| | Shusha | 1 | 1 | 12 | 74 | 1 | 1 | 37 | 39 | 30896.9 |
| | Tartar | 2 | 1 | 39 | 42 | 2 | 1 | 74 | 77 | 126966.9 |
| | Khojaly | 1 | 1 | 17 | 19 | 1 | 1 | 50 | 52 | 91615.6 |
| | Khojavend | 1 | 2 | 38 | 41 | 1 | 2 | 80 | 83 | 149800.3 |
| | Khankendi | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 1490.9 |
| | Total | 8 | 35 | 167 | 210 | 9 | 36 | 446 | 491 | 655509.3 |
| East Zangazur | Jabrayil | 1 | 0 | 22 | 23 | 1 | 4 | 92 | 97 | 102360.3 |
| | Kalbajar | 1 | 1 | 53 | 55 | 1 | 1 | 145 | 147 | 269380.5 |
| | Lachin | 1 | 1 | 47 | 49 | 1 | 1 | 125 | 127 | 183176.0 |
| | Gubadli | 1 | 0 | 30 | 31 | 1 | 0 | 93 | 94 | 79515.6 |
| | Zangilan | 1 | 1 | 20 | 22 | 1 | 5 | 79 | 85 | 70035.7 |
| | Total | 5 | 3 | 172 | 180 | 5 | 11 | 534 | 550 | 704468.1 |
| Grand Total | | 13 | 38 | 339 | 390 | 14 | 47 | 980 | 1041 | 1359977.4 |



Figure 1. Project area

1.2.Population - By region

The current population of cities and villages in the liberated territories was obtained from the updated report on 01.12.2020. Despite to the official report of the State Statistics Committee stating that the total population of the project area is 952.3 thousand by the end of 2020, according to the investigation of interdisciplinary

governmental organizations family,the registered population and family counts were stated as 880194 and 230 thousand which covers 8.7% country population. In more detail, 563.9 thousand people or 64% fall to the Karabakh economic region, 316.3 thousand people or 36% to the East Zangazur economic region. The population of the project area as of 01.12.2020 date is shown in the table below.

Table 2.

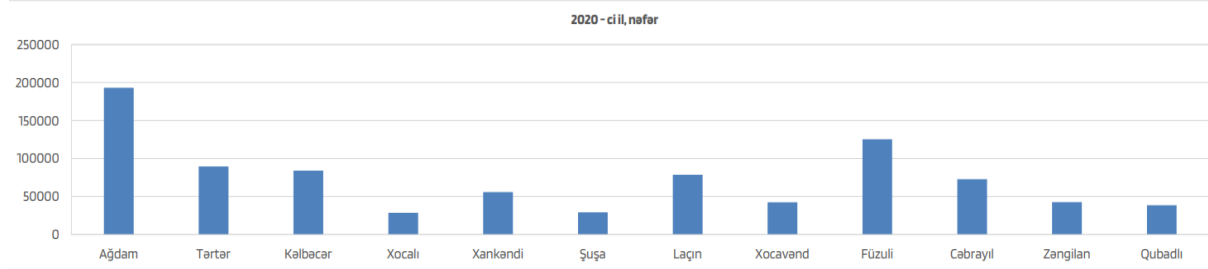
Population of the project area

| Economic districts | Administrative districts | 2020 year |
|--------------------|--------------------------|---------------|
| East Zangazur | Aghdam | 193116 |
| | Fuzuli | 125256 |
| | Shusha | 29144 |
| | Tartar | 89524 |
| | Khojaly | 28644 |
| | Khojavend | 42312 |
| | Khankendi | 55900 |
| | Total | 563896 |
| Karabakh | Jabrayil | 72668 |
| | Kalbajar | 83994 |
| | Lachin | 78535 |
| | Gubadli | 38572 |
| | Zangilan | 42529 |
| | Total | 316298 |
| Grand Total | | 880194 |

Approximately, 81.2% of the estimated population or 714,456 people for the project area are the population of the liberated regions and settlements. The remaining 165,738 people live in the unoccupied territories of Aghdam, Fizuli and Tartar regions. 29.5% or 259,243 people registered in the project area are urban

population, 70.5% or 620,951 people are of rural population. 49.7% of the population or about 438,000 people are men, and 50.3% or 442,000 people are women.

Aghdam region is the most populated region in the project area and its share in the total population is about 22%. Next ones in the line are Fizuli (14%), Tartar (10%) and Kalbajar (9.5%).



(*) Qeyd: Qarabağ iqtisadi rayonunun işğaldan azad edilmiş rayonları üzrə

Figure 2. Populations of administrative districts included in the project area

(*) Note: according to the liberated regions of the Karabakh economic region.

In 2020, the birth rate of the population in the project area was 13.4 on average in the Karabakh economic region and 13.8 in the Eastern Zangazur economic region. During the same period, the death rate was 7.4 for the Karabakh economic region and 7.6 for the East Zangazur economic region, averaging 7.5, and the natural population growth rate was 6.2, averaging 6.1 and 6.3, respectively. Between 2000 and 2020, the population of the project area increased by about 20%, indicating that the average annual population growth rate was about 1%.

The prospective population of urban and rural settlements to be built in the considered areas should be forecasted for a period of 20 years, considering the

above-mentioned demographic processes in the country and measures should be taken for the development of the territories. According to the estimates, in 2040 the population of the project area is expected to increase by about 29.1% to 1,136,740 people. When forecasting the perspective population of settlements (towns), only natural increase in rural areas and both natural and mechanical growth in cities was considered. The largest population growth is expected in the Aghdam region, where the city of Aghdam, which will play the role of regional center, is located. The population of the region is expected to increase by about 38.5% from 193,000 to 267,500 by 2040.

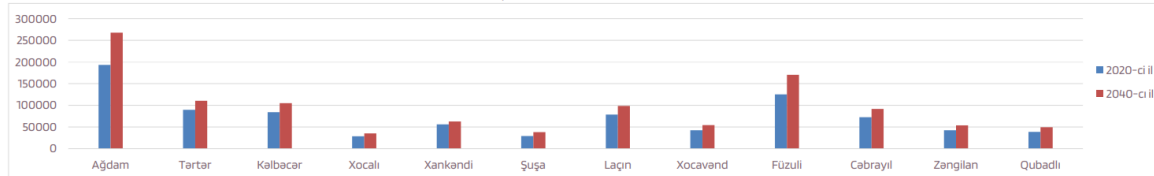


Figure 3. Population growth bar chart - 2020-2040

The next big increase is expected in Fizuli. The population of the region is expected to increase by 35% as a result of development measures carried out. In more detail it is expected to increase from 125,000 to

170,000 by 2040. Shusha region ranks third in terms of expected population growth. The population is expected to increase by 30.4% from 29,000 in 2020 to 38,000 by 2040.

Table 3

Population growth for 2020-2040.

| Districts | 2020 | 2040 | Population growth between 2020-2040, count | Population growth between 2020-2040, % |
|------------------------------------|----------------|------------------|--|--|
| Aghdam | 193,116 | 267,540 | 74,424 | 38.5 |
| Fuzuli | 125,256 | 170,240 | 44,984 | 35.9 |
| Shusha | 29,144 | 38,000 | 8,856 | 30.4 |
| Tartar | 89,524 | 110,510 | 20,986 | 23.4 |
| Khojaly | 28,644 | 35,060 | 6,416 | 22.4 |
| Khojavend | 42,312 | 54,410 | 12,098 | 28.6 |
| Khankendi | 55,900 | 62,680 | 6,780 | 12.1 |
| Jabrayil | 72,668 | 91,490 | 18,822 | 25.9 |
| Kalbajar | 83,994 | 104,930 | 20,936 | 24.9 |
| Lachin | 78,535 | 98,680 | 20,145 | 25.7 |
| Gubadli | 38,572 | 49,500 | 10,928 | 28.3 |
| Zangilan | 42,529 | 53,700 | 11,171 | 26.3 |
| Grand total of project area | 880,194 | 1,136,740 | 256,546 | 29.1 |

The design also envisages the inclusion of villages that are virtually adjacent to the city as part of a separate neighborhood (including the construction of individual houses with backyards). For this reason, in accordance with the adopted approach of territorial settlement groups, the population of adjacent villages was taken into account in forecasting the prospective population of cities. Considering the population of the villages envisaged for joint development, the urban population is expected to increase by 58.7% by 2040, from 259,000 in 2020 to 412,000 in 2040, and to 36.2% of the total project area. The development of villages is also planned within the territorial settlement groups. In general, the rural population is expected to increase by 16.8% from 621,000 to 725,000 by 2040 and will account for 63.8% of the total project area.

1.3. Digital elevation model (DEM) - by region

The relief of the Karabakh economic region is mainly mountainous. The northern part of the economic region is the north-eastern foothills of the Karabakh Range and the southern slopes of the Murovdagh Range (the highest peak of the Lesser Caucasus is Camish Mountain at 3724 m), the central, western and southern parts are the eastern slopes of the Karabakh Range (Gizgala Mountain - 2843 m, Kirghiz Mountain - 2827 m, Great Kirs Mountain - 2725 m), the north-eastern and eastern parts are occupied by the western edges of the Karabakh and Mil plains. It is bordered by the Islamic Republic of Iran to the south and southeast. The Murovdagh and Karabakh ranges are divided into several side branches descending towards the Karabakh and Mil plains. As a result of the division of the range and their side branches by rivers, deep and steep slopes were formed. In the middle mountains, there are upland depressions in the areas where river valleys expand.

- Aghdam region is located in the north-eastern foothills of the Karabakh range, in the western part of the Kur-Araz lowland. The relief of the region is mainly plain and partly mountainous. The Karabakh and Mil plains, which cover a large area, are gradually descending from southwest to northeast. The maximum elevation in the eastern branch of the Karabakh Range in the south-west of the region is 1365 m.

- Tartar region is in the western part of the Kur-Araz lowland, the surface is flat and sloping from west to east. The surface is mainly mountainous, and the plain in the east (Karabakh plain). The Murovdag range stretches to the west.

- The surface of the Fizuli region is mostly a sloping plain descending to the Araz River, and a lower mountainous in the west (south-eastern foothills of the Karabakh Range).

- The surface of Shusha region is mountainous (Karabakh range). The eastern part of the region is bordered by Kecheldag pass.

- The surface of Khojaly region is mainly mountainous. The Karabakh Range stretches along the western border of the area. The eastern slopes of the range descending to the Karabakh and Mil plains are divided by deep river valleys and erosive mountain branches are formed.

- The surface of Khojavend region is low mountainous in the west (south-eastern branches of the

Karabakh range) and plain in the east (foothills of the Mil plain).

- The city of Khankendi is located orographically in a mountainous and intersecting terrain.

- The relief of the East Zangazur economic region is mainly mountainous. Its territory is surrounded by East Goycha in the north-west, Murovdagh in the north and Karabakh in the east. The western part of the region is occupied by the Karabakh plateau. In the central part, the Mykhtoken range stretches, and in the south-eastern part, it descends to the valley of the Araz River and passes into the sloping plains. The highest peaks are: Buffalo (3724 m), Dalidagh (3616 m), Gizilbogaz (3562 m), Boyuk Ishigli (3552 m).

- The surface of the Jabrayil region is mainly a sloping plain (Incechol, Gayan steppe), low mountains in the north.

- The surface of Kalbajar region is mountainous (Murovdagh, Shahdag, East Goycha, Vardenis, Mikhtoken and part of Karabakh plateau). The highest peaks are Mount Camish (3724 m) and Dalidag (3616 m). There are about 80 peaks in the area with a height of more than 2000 m.

- The surface of Lachin region is mainly mountainous. The southeastern slopes of the Karabakh Range are located in the east of the region, and the Mykhtoken Range in the north. The Karabakh plateau is located in the south-western part of the territory. The highest point of the region is Gizilbogaz mountain (3594 m).

- The surface of Gubadli region is mainly mountainous. Its territory belongs to the south-western part of the Karabakh Range (Topagaj Mountain, 2010 m, Pirdagh, 1316 m), the eastern part of the Bargushad Range (Gartiz Mountain, 1277 m) and the south-eastern part of the Karabakh Plateau (Gurbantepe Mountain, 1976 m). The Yazı plain, which ends at the south-east of the Karabakh plateau, descends to 450 m in the area and passes into the inclined and wavy Inja plain.

- The territory of Zangilan region has a complex and fragmented surface and is located in the middle and low mountainous areas. In the north-western part of the region there is Bargushad range (Susandag, 1304 m). The area from this range to the Bazarchay-Oxchuchay area (Agoyug plain) is a sloping plain with a height of 400-600 m. The north-eastern part of the region (slopes between the Hakari and Araz rivers of the Karabakh range) forms the hilly Gayan plain. The western part of the region is the eastern end of the Mehri-South Range.

1.4. Slopes/Gradient - By Region

The slope characteristics are distributed in the region as follows: 610,522 hectares of land have less than 15%, 323,018 hectares have between 15-30%, and 426,438 hectares have more than 30% of slope. On the territories included in the Karabakh economic region, the slopes less than 15% are 390,721 ha, slopes that are between 15-30% are 125,216 ha, and the slopes over 30% cover 139,572 ha area.

- 100,914 ha area in Aghdam region has slope less than 15%, 9,694 ha area has 15-30%, and 5,204 ha area has more than 30% slope.

- In Fizuli region, the area with a slope of up to 15% is 129,053 ha, the area with 15-30% is 8,530 ha, and the area with more than 30% is 1,344 ha.

- In the area of 2,652 ha of Shusha region, the slope is up to 15%, in the area of 8,172 ha is between 15-30%, and in the area of 20,074 ha is more than 30%.

- The area with a slope of up to 15% in the territory of Tartar region is 79,631 ha, areas with a slope of 15-30% are 19,762 ha, and areas with a slope of more than 30% are 27,574 ha.

- The slope of 785 ha area in Khankendi is less than 15%, the slope of 591 ha is 15-30%, and the slope of 115 ha is more than 30%.

- Areas with slope of less than 15% of Khojaly region are 23,567 ha, slopes with 15-30% are 30,868 ha, and slopes of more than 30% are in 37,181 ha.

- In Khojavend region, 54,120 hectares have a slope of less than 15%, 47,600 hectares have a slope of 15-30%, and 48,080 hectares have a slope more than 30%.

- In the East Zangazur economic region, the slopes less than 15% are 219,800 ha, the slopes between 15-30% are in 197,802 ha, and the slopes above 30% are in 286,866 ha.

- In Jabrayil district, 77,228 hectares have less than 15%, 17,200 hectares have 15-30%, and 7,932 hectares have more than 30% of slopes.

- In the Kalbajar region, areas with a slope of up to 15% are 38,413 ha, areas with a slope of 15-30% are 69,803 ha, and areas with a slope of more than 30% are 161,165 ha.

- In the area of 42,006 ha of Lachin region the slope is up to 15%, in the area of 59,181 ha it is 15-30%, and in the area of 81,990 ha it is more than 30%.

- The area of slopes with a slope of up to 15% in the territory of Gubadli region is 31,861 ha, areas with a slope of 15-30% are 29,887 ha, and areas with a slope of more than 30% are 17,767 ha.

- The slope of 30,292 ha in Zangilan is less than 15%, the slope of 21,732 ha is 15-30%, and the slope of 18,012 ha is more than 30%.

2. General strategies

2.1. Regional development alternatives - Integrated East Zangazur and Karabakh economic regions

- Consideration of the existing administrative structure of the territories as the main driving force.

- Development of the Aghdam-Khankendi-Shusha corridor as the central axis of the Karabakh region.

- Integration of Lachin into the Aghdam-Khankendi-Shusha corridor and development of the

territories along the axis extending in an east-west direction, passing through the geographical center of the liberated territories.

- Development of the city of Jabrayil as an important center, along with the proposed settlements along the axis (considering the potential for development as a logistics center between Nakhchivan, Turkey and Iran).

- Population density, especially in the areas along the Aghdam-Khankendi-Shusha-Lachin axis.

- Strengthening integration with the cities of Ganja in the north and Nakhchivan in the south-west and taking advantage of the opportunities of international importance (airports, highways, railways, trade, etc.) of the liberated cities.

- Considering the specifics of the city of Shusha, special planning of the city before inclusion in the hierarchy of proposed centers.

Functional-spatial clusters integrated with development vectors:

- Development of Aghdam as a regional center, considering its significant potential.

- Development of vectors branching from Aghdam in the North, Central and South directions, which will have strong transport and economic ties.

- Development of the northern development vector in the tourism, agriculture and industrial sectors.

- Development of the central development vector in the fields of culture, tourism and education.

- Development of the Southern Development Vector in the industrial, logistics and agricultural sectors.

- Organization of 5 functional clusters that interact with these development vectors and have specific economic and spatial characteristics - North, Central-East, Central, Central-West and South.

- Development of Aghdam, Fizuli, Khankendi, Lachin and Kalbajar cities as centers of the proposed functional clusters.

- Planning each of the functional clusters as areas with self-sufficiency.

- Integration of clusters and settlements in order to build strong space and socio-economic structures.

- Taking into account that Shusha is the cultural capital of the country, special planning without including the city in the hierarchy of proposed centers.

- Linking the region with neighboring districts (Nakhchivan, Ganja, Yevlakh, Agjabadi, Beylagan, etc.).

2.2. Assessment of development alternatives

Table 4.

Evaluation matrix

| Criterion | Spatial-functional clusters | Development vectors | Economic districts |
|--|------------------------------|------------------------------|------------------------------|
| Clarity of purpose | High degree priority | High degree priority | High degree priority |
| Balanced distribution of the population by area | High degree priority | Intermediate degree priority | Intermediate degree priority |
| Ease of implementation of the plan | Intermediate degree priority | High degree priority | High degree priority |
| Opportunity for sectoral specialization and high productivity | High degree priority | High degree priority | Lower degree priority |
| Environmentally sensitive situations | High degree priority | High degree priority | Intermediate degree priority |
| Service availability | High degree priority | Intermediate degree priority | Lower degree priority |
| Circumstances facilitating the repatriation of IDPs | Intermediate degree priority | High degree priority | Lower degree priority |
| Opportunities for integration into regional and national development | High degree priority | High degree priority | Intermediate degree priority |

■ High degree priority
■ Intermediate degree priority
■ Lower degree priority

According to the results of the assessment matrix, the combination of Alternative 1. (Spatial-functional clusters) and Alternative 2 (Development vectors) seems to be the most suitable alternatives in terms of successful regional development of the liberated territories.

2.3. Regional development strategy.

1. Horizontal Spatial Union: Karabakh's regional transport planning promotes a hierarchy of settlements: 3 development corridors and 5 functional spatial clusters. None of them are isolated from each other, on the contrary, they are integrated parts of the whole regional system: development corridors; functional spatial clusters; definition of hierarchy.

2. Vertical integration of events: Karabakh's regional transport planning provides spatial proposals with both social and economic dimensions. The distribution of functions in this way is based on an approach that supports spatial distributions targeting self-sustaining planning units (region, subregion, cluster, settlement, etc.) for all dimensions.

3. Comprehensive Development:

3a. Spatial development: Regional transport planning in Karabakh considers the structure of clusters and determines spatial expansion by assessing population, transport infrastructure, surface features, water bodies, forests, cemeteries and nearby settlements.

3b. Social development: Regional transport planning in Karabakh offers several social facilities and several other points to ensure community development in connection with spatial and economic development.

3c. Economic development: Regional transport planning in Karabakh stimulates economic development, considering the historical, geographical, social and characteristics of each spatial unit (settlement, cluster, development corridor, region, etc.).

3d. Ecological balance: Karabakh's regional transport planning ensures the protection of environmental resources. It proposes to increase the share of

alternative energy in the area, provides protection of forest areas, consideration of agricultural lands in determining the expansion of settlements, optimization of water use and, finally, the proposed Strategic Environmental Assessment.

4. Balance between social desirability and economic viability: Karabakh's regional transport planning aims to strike a balance between functionality and rationality, integrating spatial and socio-economic arguments.

3. Conceptual approaches.

3.1. Transport Exchange and Logistics Centers.

The following main conceptual approaches are proposed in the formation of the transport structure of the Karabakh region:

- Establishment of multifunctional and integrated transport system.

- Linking airports with railways to facilitate population-service-goods-cash system flow.

- Formation of transport exchange centers in Gorchu with Aghdam, Fizuli, Jabrayil, Zangilan, Shusha and Kalbajar cities.

- Ensuring interaction between the city of Aghdam and transport-logistics centers in the border settlements of Fizuli and Zangilan districts.

- Creation of wide opportunities for domestic and international products supply of the clusters located in the direction of Aghdam-Khojavend-Fuzuli-Jabrayil-Zangilan, defined as an industrial corridor.

- Establishment of transport-logistics center in Zangilan district.

3.2. Global trends, economic development models

The assessment of the transport and logistics sectors should be carried out jointly, taking into account the changes in the world economy in the trade, transport and logistics sectors, the impact of modern technologies in this area, the growing volume of trade between countries, as well as sectoral interaction. Existing

global challenges in the trade and transport sector are related to changing customer expectations, technological innovations, new players entering the industry, new forms of competition and cooperation.

The level of development of states, recent pandemics, the state of political and economic relations between countries, as well as inter-regional trade flows also have a significant impact on these sectors. In recent years, robotics, artificial intelligence, unmanned aerial vehicle services, increasing automation, increasing the importance of information and its processing, expanding e-commerce and forecasting that the global trade in goods and services will triple by 2030, as well as the share of the transport sector in 5% of global GDP determines the prospects for future development of the sector.

Taking into account the above-mentioned global trends and forecasts, the development of the transport and logistics sector in the liberated territories, the implementation of the Zangazur Transport Corridor, which will be part of the East-West Corridor connecting Asia with Europe via Azerbaijan, significantly strengthens our country's position as a Eurasian transport and logistics center.

Given the high potential of the transit-transport system in the implementation and development of international transport, ways to increase the transit capacity should be explored and existing difficulties in this area should be eliminated.

It is also necessary to increase the capacity of international transport corridors through our country and create new international transport corridors in order to increase transit traffic between countries through Azerbaijan Republic. The new Baku-Tbilisi-Kars railway between the Republic of Azerbaijan and the Republic of Turkey and the international combined cargo transportation from Central Asia (Kazakhstan, Uzbekistan, etc.), East Asia (China, Japan, Korea, etc.) to Europe passing over via the Caspian Sea are mainly transported via Baku-Tbilisi-Kars-Sivas-Ankara-Istanbul-Kapikule (Turkey / Bulgaria border). Considering the territory of the three states, the length of this route is about 2114 km. But the length of the Baku-Tbilisi-Kars route is 826 km [1-6].

3.3.Zangazur Corridor:

The Zangazur Corridor is being established as a transport corridor to connect the main area of Azerbaijan with its integral part of the Nakhchivan Autonomous Republic, along with roads and railways. The Zangazur Corridor is a project that can unite the Turkic world, Europe and Asia. Article 9 of the Nagorno-Karabakh ceasefire declaration signed as a result of the Second Karabakh War states the establishment of the corridor between the western regions of Azerbaijan and Nakhchivan. The reduction of the transportation distance along the Zangazur corridor will also give a strong momentum to the further increase of transit traffic through our countries. The Alat-Nakhchivan-Kars route along this corridor will be shortened by about 100 km compared to the Baku-Tbilisi-Kars route, which will reduce the cost of international transportation operations and make transportation more competitive [5].

The Zangazur corridor will be a bridge connecting the historical land of Azerbaijan with Zangazur and the whole Turkic world. This road will not only connect our territories, which have been separated for more than a century, but also provide a major transit line between Europe and Asia. The route of this transit line through Azerbaijan will be a very serious contribution to the geopolitical position of our country, both regionally and globally. First, the Zangazur corridor will be a transport corridor directly connecting Nakhchivan and the main part of Azerbaijan. At the same time, the opening of this corridor will directly connect Azerbaijan and brotherly Turkey by land and rail.

The Zangazur corridor could also become a major route for Russia to transport goods to the South Caucasus and neighboring countries. Russian trains can pass through the territory of Azerbaijan to the Zangazur corridor, thus directing to Armenia, Turkey, Iran and South Asian countries. This corridor can also improve and maintain the development of trade relations between Turkey and Russia.

From an economic point of view, this corridor will unite the Turkic states with a GDP of more than \$ 1.1 trillion, as well as increase the strategic importance of Azerbaijan. This will strengthen the Turkic states, revive the development of the Union of Turkic States (Turan), make the Turkish Union's participation in international and regional political processes more effective, as well as strengthen the integration process of regional countries. Rehabilitation of the Zangazur corridor will allow transportation of goods from China, India, Central Asia to Turkey and Europe by shortcut, i.e. the Silk Road will be restored again.

The Zangazur corridor increases the opportunities for diversification along the East-West route. Therefore, the countries of Southeast and Central Asia, as well as the European Union are interested in the implementation of the Zangazur corridor. At the same time, the Zangazur Corridor plays an important role in diversifying the North-South and East-West routes. The corridor is not only short, but also important in terms of saving time and resources [5-6].

The vast majority of cargo that can be transported via the Zangazur transport corridor will be the cargo originated from China, Kazakhstan, Uzbekistan and Turkmenistan. At the initial stage, favorable and simplified conditions of transportation should be agreed with the above-mentioned countries, and the smooth passage of these vehicles at the relevant ports should be ensured without unloading. In order to resolve these issues, a quadripartite agreement should be reached between Turkey, Azerbaijan, Turkmenistan and Kazakhstan on the Caspian Sea crossings.

The option of sending international combined cargo via the Black Sea ports of Poti and Batumi to Europe on the existing route once again confirms that international road transport will be more efficient, taking into account the carrying capacity of ferries, the speed of ships and the time spent loading and unloading cargo containers at ports.

At the same time, given the time spent on loading and unloading operations in international combined cargo transportation in the ports of the Caspian Sea, and

the unloading of vehicles by Ro-Ro vessels (vehicles), it is further confirmed that the international transportation on the Zangazur transport corridor will be more efficient.

New railway project Kars-Igdir-Nakhchivan:

The length of the line in the territory of Turkey (Kars-Igdir-Intermediate-Diluju) is 224 km. At present, 9 tunnels with a total length of 9631 m and 9 bridges with a total length of 4184 m have been built according to the project amount.

At the same time, a 7 km long railway line should be built on the Azerbaijani side from Sadarak station to the Turkish border. Moreover, for the effective operation of the new railway line, the following work must be done in Nakhchivan: - 62 km of Nakhchivan-Sadarak road, Nakhchivan-Validag-Sadarak area (80 km) Information Transmitters and communication facilities, the communication network and 6 substations in the Nakhchivan-Sadarak area (79 km) must be all be overhauled and renovated.

If the railway connection is going to be extended to Julfa station, the above-mentioned works should be carried out in the 46 km Julfa-Nakhchivan area and the bridge over the Nakhchivanchay in the Nakhchivan-Garabork route should be overhauled (replaced) [1-6]. However, in order to prevent additional political manipulations, we consider it expedient to carry out the processes after the implementation of the Zangazur corridor.

4. Strategies of the Regional Transport Plan – Results and Suggestions

The following main strategic approaches are proposed in the formation of the transport structure of the Karabakh region:

Target 1. Strategies to achieve goals within the framework of interregional adaptation:

- Existing infrastructure plans should be implemented considering the initial results of the intermodal transport model.
- Infrastructure projects should be given priority to support interregional travel.
- Priority should be given to infrastructure projects aimed at connecting populated and industrially advanced regions.
- Potential of building programs in the logistics sector should be established for the development of customer-oriented transport services.

Target 2. Strategies to achieve the goals of becoming a regional center in the field of transport and logistics:

- Invest in infrastructure, customs services, transport and logistics training, which are the three main components of the Logistics Performance Index.
- Azerbaijan should be effectively promoted as an effective transport and logistics center.

- East-West railway corridors should be developed to facilitate exchanges and reduce traffic congestion in the Baku-Nakhchivan direction.

- Azerbaijan's competitiveness in transport and logistics should be monitored and regular performance appraisals should be provided.

Target 3. Strategies to achieve security goals:

- Investments on the projects of safe roads and roads with multiple lanes should be made / maintained
- Safe driving skills must be developed.
- Road safety training and awareness should be increased.
- The efficiency of vehicle inspections should be increased.
- The transition to safe vehicles must be supported.
- The transition to safer establishments should be encouraged.

Target 4. Strategies to achieve national security goals:

- Corridors / routes used by security units to meet protection needs against natural disasters and potential risks should be identified.
- Alternative routes to the existing road network should be constructed along designated corridors and routes to access and provide connectivity to settlements.

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