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**REPORTS OF THE NATIONAL ACADEMY OF SCIENCES  
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**A.B. Kaliyeva-Khassenova**<sup>1</sup>Kazakh national university named after Al-Farabi, Almaty, Kazakhstan<sup>2</sup>Institute of economics CS MES RK[kaliyevaaltynay@mail.ru](mailto:kaliyevaaltynay@mail.ru)**THE DEVELOPMENT OF TRANSCONTINENTAL INFRASTRUCTURE  
OF THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** This article is devoted to the development of transcontinental infrastructure of the Republic of Kazakhstan. Being between two continents –Europe and Asia-, Kazakhstan is the most probable transcontinental transport bridge of the region. Development of transport infrastructure is one of the priority directions of Kazakhstan's economic policy from the moment it became an independent republic. The international transport corridors passing through the territory of the country diversely promote effective realization of transit potential of the Republic of Kazakhstan in the international transport system. Important advantage of transit through the Kazakhstan territory is the stable political situation and favorable investment climate.

**Key words:** Transit potential, transcontinental transport bridge, transport corridors, infrastructure development, transit hub, maritime routes.

Kazakhstan plays an important role as a bridge between Europe and Asia, being an alternative transcontinental transport bridge, replacing heavily loaded maritime transport routes.

Kazakhstan has a favorable geographical location at the crossroads of two continents - Europe and Asia –, which is a valuable strategic resource that can enable the country to fully realize its transit potential, ensure an effective integration into the world economic system, and thereby to raise the country's economy on a new level. Infrastructure development is therefore one of Kazakhstan's top national priorities.

Over the past ten years, Kazakhstan has invested \$3 billion into its infrastructure. It has built 4,000 kilometers of new roads and upgraded more than 13,000 kilometers of motorways. Kazakhstan's government plans to invest a further \$30 billion into infrastructure by 2015 with the aim of building 1,600 kilometers of railroad and 50,000 new motorways. The objective is to transform Kazakhstan into a transit hub for all of Europe and Asia [1].

Kazakhstan's main priority is that forms a one-country link between China and the Caspian Sea, ensuring it will play a dominant role in any land links between Europe and China. The rapidly growing economy of China and its main trading partner, the European Union paves the way for the development of transit and export-import capabilities of Kazakhstan. In this case, Kazakhstan should use their unique geographical features: the central position in the Central Asian region and proximity to China. In general, transit flows in the direction of South-East and East Asia - Europe are estimated at about 330 - 400 billion US dollars, where 20% of these flows can pass through the territory of Kazakhstan. For example the transportation through Kazakhstan makes the distance of transportation two times shorter than the recent transport distance between Europe and China, which goes through Russia.

Kazakhstan's transport system comprises about 88,400 kilometers (km) of roadways; 14,205 km of railways; 3,900 km of waterways; and up to 61,000 km of air routes. Its road and rail systems carry nearly 90% of its total cargo load. The rail system has 5,192 locomotives and 59,954 rail wagons. It also has container block trains.

Significant measures to implement the transit potential of Kazakhstan are undertaken in the rail industry of the country, there are two international railway transport corridors: "Khorgos/ Altynkol - Zhetygen station" and "Uzen - Bereket - Gorgan", which have already been completed and put into operation.

In railway sector there is also high growth rates, for example plant on production of locomotives in Astana, where 258 of locomotives totally were released from 2013-2015 years. There is also plant on production of electric locomotives in Astana, which totally released 136 units in 3 years from 2012-2015 years. A great example of developing transport system of Kazakhstan is a new plant on production of freight cars in Petropavlovsk, which released 1401 units from 2009 until 2015 years. Plant on assembly of Talgo passenger cars in Astana, where 222 units were released.

If we consider maritime routes, seaport Aktau today is the only seaport in Kazakhstan. There was brought one of the world's largest port operator DP World (Dubai Port World) for the management of FEZ "Khorgos" and its integration with the seaport of Aktau, aimed at improving the competitiveness of the RoK as a transit country on the transport market.

Kazakhstan's roads are mainly Class III. Freight volume transported through these roads is 6.4 times more than that by rail, and has increased by an average of 8.3% annually. Significant for road transport in Kazakhstan is the planned Western Europe–Western Asia project measuring 2,624 km that starts from Orenburg (Russian Federation) and ends at Korgas (the PRC), passing through five Kazakh regions. This T920-million project will be implemented from 2009 to 2016.

Kazakhstan's aviation industry is considered one of the best, if not the best, in Central Asia. It has relatively well-established air hubs at Astana, Almaty, and Atyrau, which together with four other domestic airports now meet the requirements of the International Civil Aviation Organization [2].

The most promising areas for the realization of the transit potential of Kazakhstan are:

- Through Russia to the EU;
- China, Japan, South-East Asia;
- Through the countries of Central Asia and the Caucasus to Iran and Turkey.

For each of these areas there are already well-established transport corridors, both on land and on the waterways. In addition, large-scale projects are being developed to create new transport routes.

Transit through Kazakhstan has a number of advantages:

- Reduce the time and distance from the producer to the consumer from Asia to Europe. In contrast to the sea route in this direction, where the cargo is on the way for 35-40 days, the land delivery time is reduced by 2-3 times.

- A stable political situation and a favorable investment climate in the country.

- Formation of the Customs Union and later - the EEU, which allowed to create a single customs border between China and the EU. This fact greatly facilitates the procedures of customs clearance.

The construction and launch of promising infrastructure projects should make a significant increase of transit through Kazakhstan

At the moment, 6 existing international transport corridors lay through Kazakhstan:

1. Northern Corridor of Trans-Asian Railway (TAR): Western Europe - China, Korean Peninsula and Japan through Russia and Kazakhstan (section Dostyk - Aktogay - Sayak - Mointy - Astana - Petropavlovsk (Presnogorkovskaya));

2. Southern Corridor TARM: South-Eastern Europe - China and South-East Asia through Turkey, Iran, Central Asia and Kazakhstan ((section Dostyk - Aktogay - Almaty - Shu - Arys - Saryagash);

3. TRACECA: Eastern Europe - Central Asia via the Black Sea, the Caucasus and the Caspian Sea (section Dostyk - Almaty - Aktau);

5. North-South: Northern Europe - Gulf States via Russia and Iran with the participation of Kazakhstan in the sections: seaport Aktau - Ural regions of Russia and Aktau - Atyrau.

6. Central Corridor TAR in the direction of Saryagash - Arys - Kandagach - Ozinki that is most in demand in the regional transit.

Land transport corridors allow reducing the time of delivery by reducing distances in East-West route [3].

One of the largest projects in the Eurasian region deserves special attention – the road corridor "Western Europe - Western China", which shows Kazakhstan's cooperation with Europe, China, Russia. Implementation of this project in the country began in 2009, and its completion is planned for 2015-2016. This transcontinental road corridor will provide the shortest route for Chinese goods to the countries of Western Europe, and in the opposite direction the supply of process and vehicle machinery to the PRC. It will allow reducing the delivery time of goods between Western Europe and China, about 3.5 times

The transit possibilities of Kazakhstan could be used in all areas of transit corridors. The transport complex of the country is represented by all modes of transport: rail, road, pipeline and water and air. The main mode of transport in Kazakhstan is the railway transport, which accounts for 44% of total turnover.

In general, over the last decade, huge investment was directed to the development of transport in Kazakhstan, even during the global financial crisis in 2009 it managed to send \$4.2 bln. to the transport sector through loans. In 2010, the share of investment in transport was 15.8% from the total investment in fixed assets, and in 2012 there was an increase in investment to 19%. This was mainly due to the implementation of major infrastructure projects. In the Republic of Kazakhstan, it is planned to upgrade and increase all kinds of vehicles and facilities of transport infrastructure. Solving these problems will significantly change the transport system of the country, in line with international standards of quality and safety.

Kazakhstan's main trading partner and the largest consumer of goods and services in the world is the European Union. In the EU countries through the Customs Union (and now EEU) trade flows from China and other Asian countries by land. In 2014, 28 million 668 thousand tons of cargo by all modes of transport there were sent to the Customs Union of the European Union, which is 11.8% less compared with 2013 year. The decrease was due to the low import of goods to the Russian Federation [4].

With effective implementation of Kazakhstan's transit potential the issue of competitiveness of land transport corridors passing through the territory of the country, against the sea routes remains up-to-date. The advantage of land transport route is the speed of delivery by rail or road, which is 2-2.5 times lower than when sending goods by seagoing vessels. In assessing the competitiveness of a route it is required to rely on well-known in transit "commercial triangle" - "time - service - tariff" [5].

The deterioration of relations between Russia and the West, because of the sanction policy of the last-mentioned has led to a reorientation of the Russian Federation to the east direction of trade (Russia-China, Russia-Iran) and a greater focus on strengthening the Eurasian integration project. In view of these circumstances, the transit through Kazakhstan will be in great demand. It is important for Kazakhstan to actively develop trade with Iran, with the help of the rail route "Uzen - Gorgan" set in 2014 and to become a mediator in the Russian-Iranian trade, that it was not only with the European part of Russia, but also with Siberia.

Expansion of cooperation between Russia and China is gaining momentum and the two countries planned grandiose projects, for example, "Gazprom" plans to supply gas to China via two routes: the east (by the gas pipeline "Power of Siberia") and west (the gas pipeline "Altai").

Relations between Kazakhstan and Belarus in the sphere of transit transportation noticeably improved with the creation of the Customs Union and the EEU. Parliament of the Republic of Kazakhstan in December 2014 decided to establish free passage of vehicles to carry goods between Kazakhstan and Belarus, as well as transit through their territories. This will allow Kazakh carriers unhindered transportation of goods through the territory of Belarus to the EU.

Thus, the development of relations of Kazakhstan with all countries in the framework of the EEU and its major trading partners - China and the European Union allow the country to implement and use its transit potential. One of the main transport corridors for Kazakhstan and the entire EEU remains northern corridor (China - Kazakhstan - Russian Federation) Trans-Asian Railway, which goes to the Trans-Siberian and BAM. And also new highway "Western Europe - Western China" is considered in the context of the northern route of the Silk Road Economic Zone (SREZ).

Transit corridors from China to Europe in the framework of SREZ can be divided into three groups: the Northern Way (land "economic zone"), the Sea route ("Marine Silk Road") and the Southern way.

The Northern Way includes routes that pass through the territory of China, Kazakhstan and Russia. As noted above, one of them is the road corridor "Western Europe - Western China", where China has already paved its part. Another route goes in the direction of Urumqi -Dostyk - Omsk - Moscow - EU countries.

The Sea route of SREZ includes routes through Kazakhstan with access to the Caspian and Black Seas. The third Way, the Southern includes the following routes: the first one from Urumqi via the port of Aktau and further to the EU, while using Georgian ports; the second one from Urumqi through Kazakhstan and Central Asia to Iran and Turkey.

The transit possibilities of Kazakhstan could be used in all areas of transit corridors. The transport complex of the country is represented by all modes of transport: rail, road, pipeline and water and air. The main mode of transport in Kazakhstan is the railway transport, which accounts for 44% of total turnover.

Thus, Kazakhstan should use their unique geographical features: the central position in the Eurasian region and proximity to China. The formation of the republic as a transit hub must be accompanied by the development of a wide network of transport and logistics centers (TLC) with strategic allocation in each region of the country (in the west - the sea port of Aktau, in the south - Almaty, in the north - Astana, in the east FEZ "Khorgos").

The presence of an extensive system of TLC in Kazakhstan increases the efficiency of using rolling stock; improves the quality of transport; reduces transport and logistics costs.

The transit potential of Kazakhstan in the provision of alternative land routes from Asia to Europe and back. The advantages of these overland routes through the territory of the Republic of Kazakhstan are as follows: variation in transit traffic routes to the EU - through Russia, through the countries of the Caucasus and Central Asian countries and Iran; speed of delivery and reducing the length of the distance compared to the sea route; one customs border between China and the EU as a result of the formation of the EEU; the functioning of the existing international transport corridors passing through the territory of the Republic of Kazakhstan.

Today Kazakhstan's transport infrastructure is lagging behind in implementing modern transport technologies, and the technical and economic characteristics of most operated vehicles are low. There is a high percentage of wear of transport infrastructure and the vehicle fleet, which varies from 40 to 100%.

The transport system of the Republic of Kazakhstan requires technological modernization. For this, in 2013 there was established the State Program of development and integration of the infrastructure of the transport system of the Republic of Kazakhstan until 2020. Construction and modernization of infrastructure as per this program is mainly focused on the increase of transit from China and fits well into a project of the Economic Zone of the Silk Road.

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#### ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ ТРАНСҚҰРЛЫҚТЫҚ ИНФРАҚҰРЫЛЫМЫН ДАМУ

**Аннотация.** Аталған мақала Қазақстанның транзиттік әлеуетін талдауға арналған. Автор елдің транзиттік әлеуетін пайдалану мүмкіндіктерін, мәселелері мен ұтымдарын зерделей отырып, оны тиімді жүзеге асыру қажеттілігін көрсетеді. Негізгі әлемдік нарықтардан алыс, теңізге тікелей жолы жоқ, сауатты көлік-логистикалық саясатсыз елдер тұралап қалуға икемді. Әлемдік экономиканың жаһандануы жағдайында транзит елдің халықаралық саудаға белсенді қатысуының маңызды шарты, көлік саласын дамыудың факторы мен мемлекеттік бюджетті толтырудың қайнар көзі болып табылады. Транзиттік

әлеуетті жүзеге асыру тәуелсіздік алған күннен бастап Қазақстанның экономикалық саясатының басым бағыттарының бірі болып табылады. Халықаралық көлік жүйесінде ҚР-ның транзиттік әлеуетін тиімді жүзеге асыруға әр түрлі бағыттарға ел аумағы арқылы өтетін көлік дәліздері мүмкіндік береді. ҚР аумағы арқылы транзиттің маңызды артықшылығы тұрақты саяси жағдай мен қолайлы инвестициялық климат болып табылады. Қазіргі уақытта Қазақстанның транзиттік әлеуеті толық көлемде іске қосылмаған. Еуразиялық экономикалық интеграция Қытай мен ЕО елдерін бір ғана кедендік шекара бөлетін жағдай жасады, бұл Қазақстанның транзиттік әлеуетін айтарлықтай арттырады.

**Түйін сөздер:** транзиттік әлеует, көлік дәліздері, транзиттік потенциал, трансконтиненталды көпір, логистика.  
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### **РАЗВИТИЕ ТРАНСКОНТИНЕНТАЛЬНОЙ ИНФРАСТРУКТУРЫ РЕСПУБЛИКИ КАЗАХСТАН**

**Аннотация.** В данной статье рассмотрены новые возможности развития трансконтинентальной инфраструктуры Республики Казахстан. Географическое расположение нашей страны дает превосходную возможность выступать в качестве трансконтинентального моста, способствуя стабильному экономическому развитию страны. Учитывая глобализацию мировой экономики, Казахстану необходимо поднять на новый уровень транзитный потенциал. Географическое положение позволяет нам создавать транспортные, логистические маршруты не только регионального, но и глобального значения. Развивая транзитную и транспортную системы, Казахстан послужит не только трансконтинентальным мостом между Европой и Азией, но и поднимет экономику страны на новый уровень.

**Ключевые слова:** транзитный потенциал, трансконтинентальный транспортный мост, транспортные коридоры, развитие инфраструктуры, морские пути.

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