

**Russian-Mongolian transportation projects in the context of modern
international initiatives**

Russian-Mongolian interaction in the field of establishment of transportation communications has a long-run history.¹ Enough to note that with technical assistance from USSR in 1939² the first line with wide track to Choibalsan was constructed, the first Mongolian transit railroad which connected Trans-Siberian Railway and Central China region in 1955. This line has provided the possibility to develop natural resources. In 1977 the branch to the largest in Eurasia copper molybdenum mine Erdenet was imposed³, as well as to other equally important for the country industrial facilities: Baga-Nuur, Bor-Under and others. Joint Russian-Mongolian management of railway network⁴ provides 63% of the domestic turnover and more than half of the export-import operations.^{5 6}

Currently there is a reconstruction of Ulaanbaatar railway.^{7 8} The total volume of freight traffic on JSC “Ulaanbaatar Railway” infrastructure by the end of 2015 is estimated at 34,1 million tons, on the 2020 respective – 45.1 million tons.⁹ It is expected that that the transit transportation capacity for containers through Mongolia will be close to 9700 TEUs.¹⁰

¹ The brief chronology of Mongolian railway network and JSC “Ulaanbaatar Railway” development.

² Country listing. Figure 12. Transportation, 1989 <http://www.country-data.com/cgi-bin/query/r-8980.html>.

³ Werner Elstner: Mongolei, p. 146, Berlin 1993.

⁴ Russian Federation Governmental Regulation № 397 30th of July 2004.

⁵ Mongolia Encyclopedia. Mongolian Railways. URL: http://mongol.su/wiki/index.php?title=Улан-Баторская_железная_дорога.

⁶ Russian Mongolian collaboration is multidimensional and has never limited to intercountry scale. With technical assistance from Russia in 1987 the trolley line was opened in Ulaanbaatar and passenger transportation in Ulaanbaatar metropolitan area was organized jointly by JSC “RZD” and JSC “Ulaanbaatar Railways” in 2014 and other projects.

⁷ Development strategy of Russian Railways. URL:

http://doc.rzd.ru/doc/public/ru?STRUCTURE_ID=704&layer_id=5104&id=3997.

⁸ Secretariat of Business Council of Shanghai Cooperation Organization. URL: <http://www.bc-sco.org/?level=10&id=961&lng=ru>.

⁹ JSC “RZD”. URL: http://inter.rzd.ru/news/public/ru?STRUCTURE_ID=854&layer_id=3328&id=84142.

¹⁰ Morozov V.V. “Евро-Азийн тээвэр: бҮсийн оролцоо”. Олон улсын бага хуралдээр “Оросын төмөр замууд” НХН. URL: <http://www.ubtz.mn/page?id=24>.

Through the railway with the “Russian” track of 1520 mm two largest Russian-Mongolian enterprises will be serviced: Erdenet and Mongolrostsvetmet. Erdenet ore concentrates carried by above mentioned line have provided around 20% of all incomes in Mongolian budget.

Russian-Mongolian cooperation has spread not only to freight transportation, but also to passenger segment of transportation system. So, in 1987 with technical assistance from Russia the trolley routes were opened in Ulaanbaatar, in 2014 – the suburban railway transportation in Ulaanbaatar metropolitan area was organized. However, it can be stated that the freight segment of railway transportation plays (and will play in foreseeable future) the leading role in the field of Russian-Mongolian cooperation in transport. This conclusion is determined by a number of objective factors.

Mongolian and Russian transportation systems, in general, are not ranked high enough in the Global Competitiveness Report (table 1, figure 1).

Table 1. Global Competitiveness Index of Russian and Mongolian transportation systems.

Countries	Rankings of “Global Competitiveness Report” 2014-2015. ¹¹		
	Quality of overall infrastructure	Quality of railroad infrastructure	Quality of roads
Russia	74	26	124
Mongolia	119	69	139

¹¹ World Economic Forum. The Global Competitiveness Report 2014–2015.

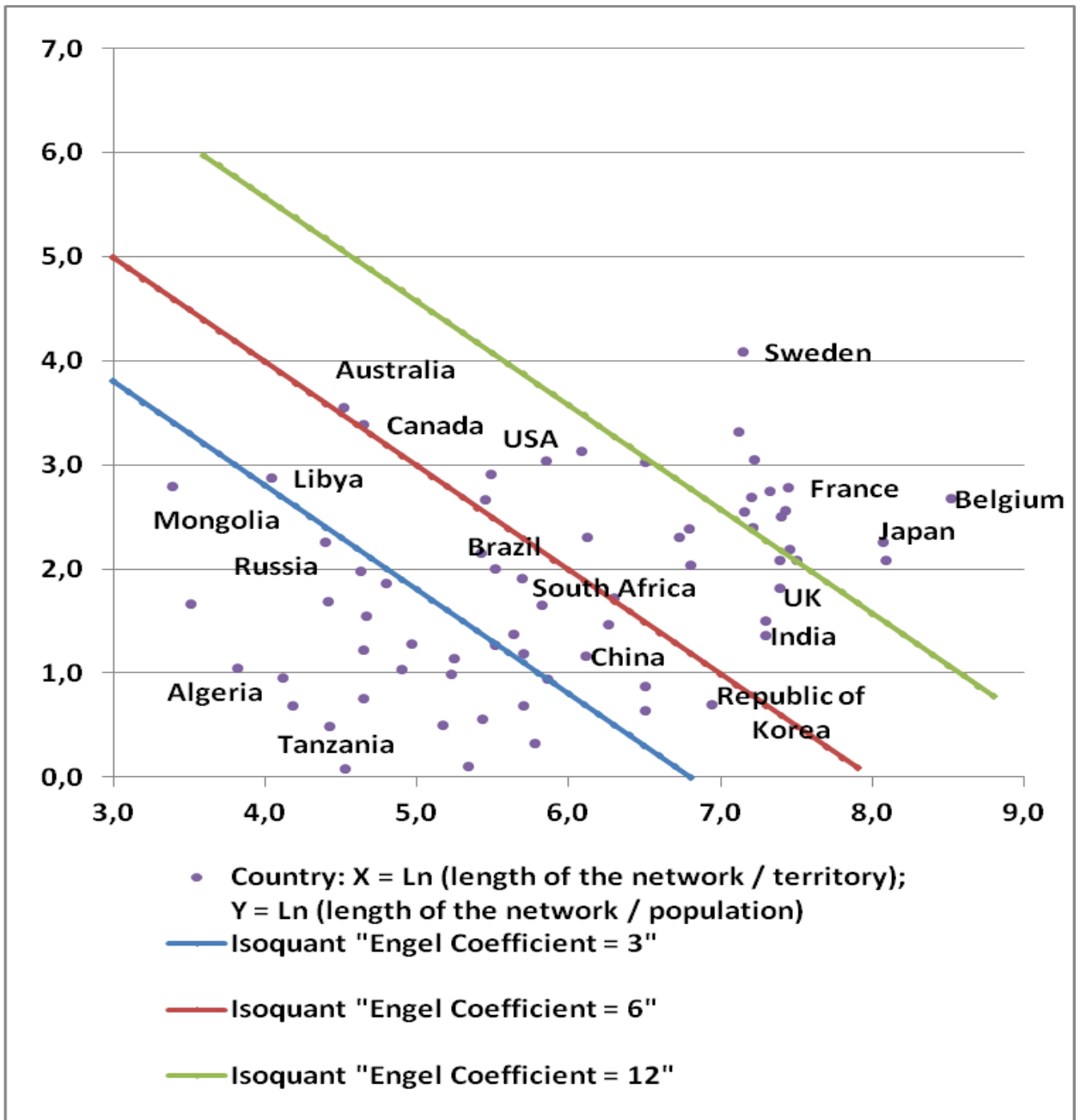


Figure 1. Density of the road network: international comparisons.

It should be noticed that in “Global Competitiveness Index” automobile road network development of both countries is rated extremely low. Considering objective measurements, based on the density of road network including area of the territory and population both countries are located in the lower (worst) cluster (figure 1). For example, Russia’s only highway to Pacific coast (M-58 Chita – Khabarovsk, “Amur”) construction was started before the World War I and completed only in 2010.

Low level of road network development (among the other circumstances specific to the post socialist era) define a very modest “humanitarian rates”¹² of transportation system, that can be observed in Russia and Mongolia, where they do not exceed 20-30%^{13 14}, while, in developed countries these rates are characterized by values from 50% (USA) to 75% and more (Western Europe).

Low “humanitarian rates” is an indirect confirmation of the fact that Russia and Mongolia (regardless of the political declarations) are oriented to the same economic models, built on the export of energy resources and raw mineral resources. The only difference is that Russia has a more diversified transport complex, which includes developed pipeline and large sea ports oriented on export, but Mongolia doesn't.

Within the framework of such model the potential of further Mongolia economics development is in direct interconnection with the accessibility of new export channels of raw resources. Already, on the territory of country the vast amount of resources have been surveyed and allocated (especially ore and coal).¹⁵ Some of the minefields are located too far from the existing transport communications: for example, coal (Ovoot – 330,7 million tons) (figure 2), silver (Asgat – 7,4 thousand tons)¹⁶ and others. All of them are located in the western parts of the country and are not involved in economic turnover due to lack of transport accessibility and other factors.

¹² “The indicator of “Humanitarianism of the transportation system” is equal the share of passenger traffic in adjusted tonne-kilometres. The indicator of adjusted tonne-kilometres is the sum of freight and passenger traffic converted into freight traffic using an adjustment coefficient. Here we use Rostat’s adjustment coefficient of 1 (1 passenger-km = 1 tonne-km)

¹³ ҮНДЭСНИЙ СТАТИСТИКИЙН ХОРОО. URL: http://www.1212.mn/contents/stats/contents_stat_fld_tree_html.jsp.

¹⁴ О. Evseev, А. Misharin Actualization of transport strategy of Russian Federation in the period to 2030.

¹⁵ Voice of Mongolia. URL: <http://ru.vom.mn/i/7208>.

¹⁶ Mongolian - Russian Joint Venture Mongolrostsvetmet LLC. URL:

http://www.mongolros.mn/index.php?option=com_content&view=article&id=80%3Aasgat-silver-a-copper-deposit-&catid=42%3Aprojects&Itemid=89&lang=en.

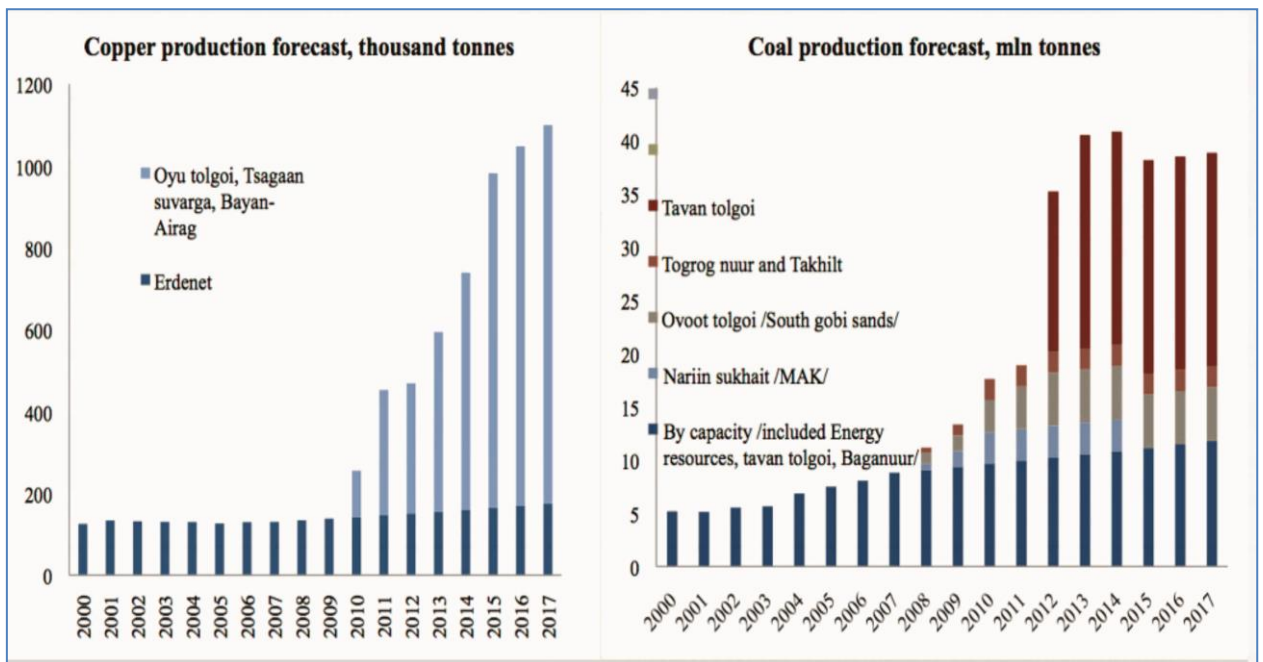


Figure 2. Estimated capacity of copper and ore production (split by minefields).¹⁷

For similar reasons the development of minefields in Russia in the regions close to Mongolia border – eastern Siberia and Republic of Tyva is hindered. First we are mentioning Elegend coking coal minefield with the reserves of 776 million tons, which is a part of large Ulugh-Khem coal basin. Only the reserves of coking coal here are 14,5 billion tons, while the estimated overall reserves of coal here are 20 billion tons. Planned extraction capacity at Elegend minefield after construction of the railway will be close to 18 million tons of coal per year (15 million tons of coal concentrate). For this minefield development the project of railway line Kuragino – Kyzyl¹⁸ has been developed, approved and being realized. Institute of Transport Economics and Transport Policy Studies of NRU HSE has also been involved in this project (figure 3). Russian authorities have proposed to extend this line to the territory of Western Mongolia to Arts Suuri. This will provide the possibility to interconnect in Arts Suuri Russian project and project of railway Arts

¹⁷ V. Grayvoronskiy. Mongolia: bright perspectives of progressive development. URL: http://russiancouncil.ru/inner/?id_4=3009#top-content

¹⁸ “About the Project of transport corridor creation Western China – Kyzyl – Kuragino – Yamal – Europe” №04-03/2833 27.05.2015.

Suuri – Altai – Hami, which is planned to realization and approved by the State Great Hural in late 2014.¹⁹



Figure 3. Kuragino – Kyzyl Railway project.

In this case a transport corridor and the second meridional railroad Kuragino – Kyzyl – Altai – Hami (Xinjiang) appears, the additional access to China rail network provided between Jiayuguan – Tulufan (on the approach to Urumqi) (figure 4). This section on the territory of Xinjiang is considered as a major one within China political framework of “Formation of Economic belt of New Silk Road”. Here begins the formation of all land freight flows²⁰ to Central Asia and Europe.²¹ The total volume of China import only from neighboring countries of Central Asia on this direction has grown 1,7 times and in 2013 has reached 50 billion dollars.²²

¹⁹ Great Governmental Khural Regulation №32 24.06.2010.

²⁰ Among developing provinces of this region its worth to mention Internal Mongolia and Xinjiang Uyghur Autonomous Region (Xinjiang), Jinin, и Heilongjiang.

²¹ Concept and activity plan of joint promotion to create “Economic belt of Silk Road” and “Sea Silk Way of 21st century”, translation from Chenesse language, March 2015

²² Some experts evaluate these volumes about 37 billion dollars. A. Bezborodov. Infranews.

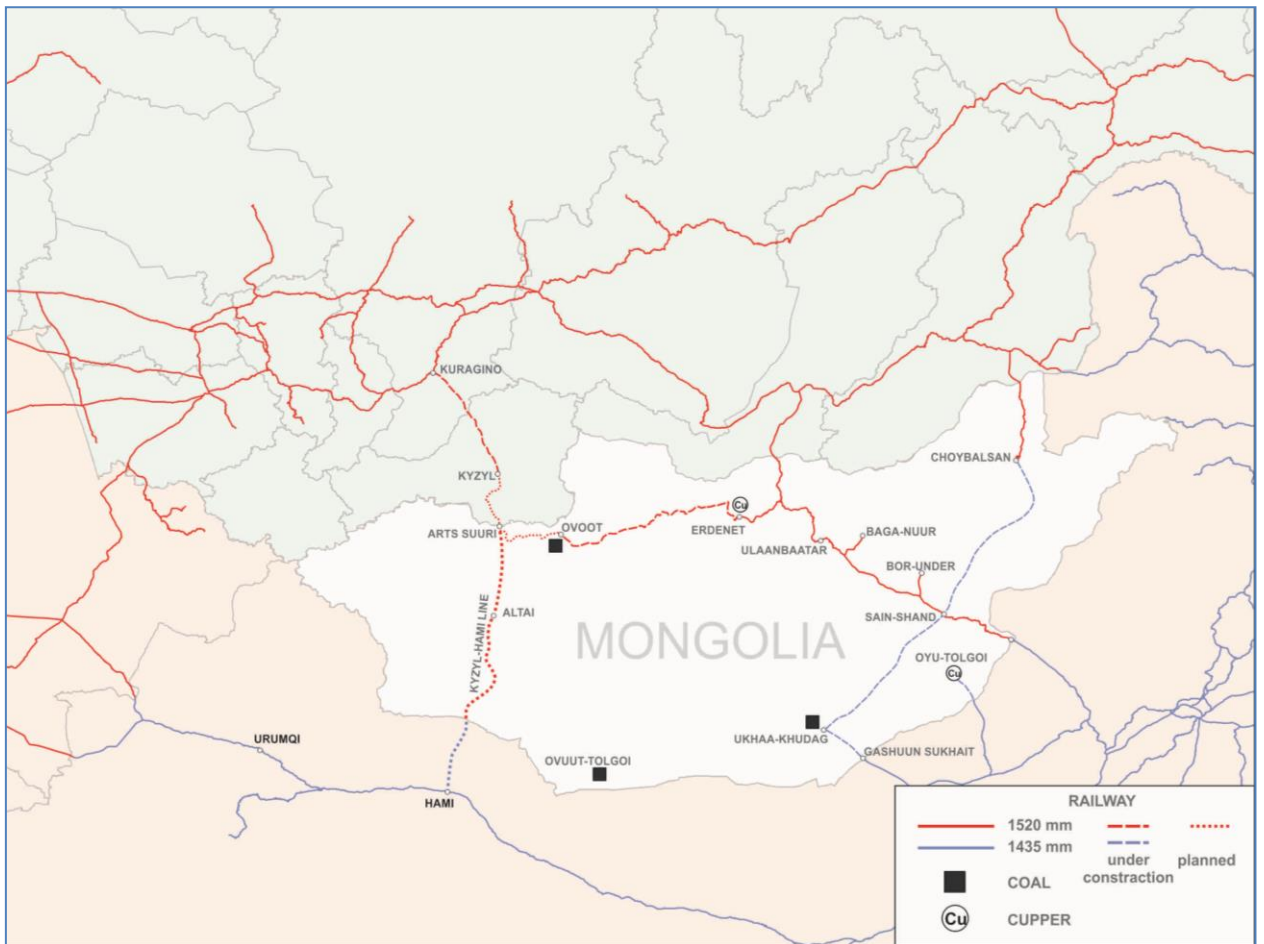


Figure 4. Some railway development projects on the territory of Mongolia.

In case of creation of transit corridor through Western Mongolia the direct access to Central Siberian railway nearby Barnaul is provided (figure 5), it can be in demand in the most loaded direction of freight transportation and realize the transit potential of western aimags, Western China and Tuva in Russia.²³

²³ Ministry of Economic Development of Russian Federation. The Memorandum of Understanding between Russian Federation , People’s Republic of China and Mongolia about program development to create economic corridor Russia – China - Mongolia. URL: <http://economy.gov.ru/minec/press/news/2015090706>.

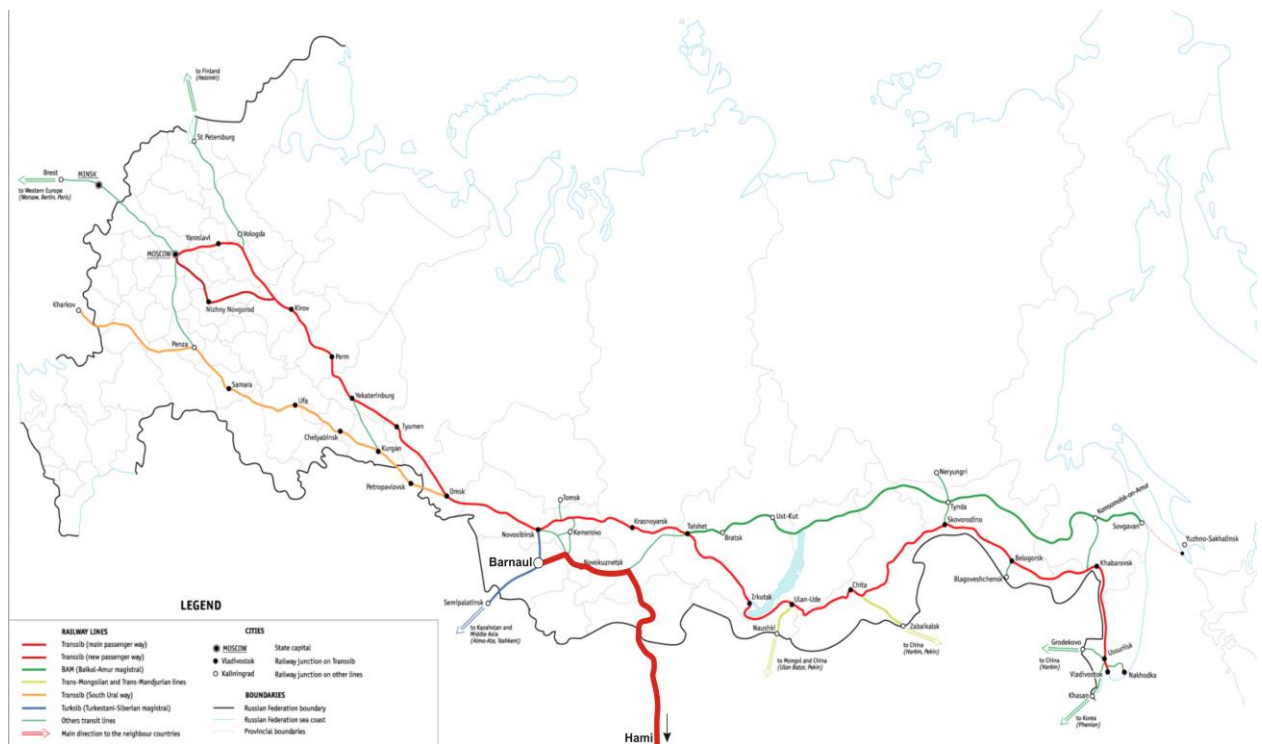


Figure 5. Trans-Siberian Railway.

On the Chinese side such corridors are considered as an important “window” of openness to the West to strengthen the position of China in high priority countries of Central Asia^{24 25}, including Mongolia, which fully corresponds to the interests of all countries in the region.

Also as of 2015 the plans were announced to lay a latitudinal railway line with a track of 1520 mm between old and new road: from Erdenet to Ovuuta²⁶ and further to Arts Suuri (figure 4).²⁷ This line joins to the corridor Hami – Kyzyl – Kuragino in the western part of Mongolia and enhances the connectivity of the entire transport frame of Mongolia²⁸ with an additional route from the central part of the country to Russia and China. Such a possibility, in perspective allows to redistribute the freight flows from Central China in the zone from Wuhan and and

²⁴ Under Central Asia the countries of former USSR are determined according to the decisions of work meetings to explore the region boundaries in UNESCO from 1978 to 1979 URL: http://www.unesco.org/culture/asia/html_eng/projet.htm. В современной научной литературе также встречается несколько синонимичное понятие «Inner Asia» (Soucek S.A. A History of Inner Asia. Cambridge, 2000).

²⁵ The History of Central Asia: The Age of the Steppe Warriors. UNESCO, 2010.

²⁶ URL: Railway-technology.com <http://www.railway-technology.com/news/newsnorthern-railways-gets-30-year-concession-for-erdenet-ovoot-project-in-mongolia-4647110>.

²⁷ Aspire Mining Limited URL: http://www.aspiremininglimited.com/userfiles/file/481_1377535.pdf.

²⁸ The decision to adopt the “Russian track” of 1520 mm as the main for Mongolia has been repeatedly voiced, but came into the conflict with the developed 1435 mm line in the south to the minefields of Oyu-Tolgoi, Ovuut-Tolgoi, Ukhua-Khudag. With such approach, in addition to the need to overload the transit and export freight flows, Mongolia will have to overload its own flows inside country.

Chongqing directly to Abakan and Achinsk. Thus, the deep bypass of non-alternative RZD network sections “Ulan-Ude” – Tayshet and Tayshet hub itself is created, that provides the possibility to cut the route of transportation from Central China (Xi’an) to Siberia (Novosibirsk) by approximately 600 kilometers.

Similarly, there is a parallel direction in China railway network appears. The alternative to Lanzhou – Hami section (figure 6) is being created. In this case the carriage through the corridor “Xinjiang – Mongolia – Kyzyl – Kuragino” ensures the route diversification for goods from Western and Central China to Siberia and Ural.



Figure 6. Forming transport corridors of Economic belt of Silk Road in Eurasia. View from Russia.

Currently, export of goods from Xinjiang exceeds 15 billion dollars a year, but it is carried out mainly through the eastern ports of China, operating in a chronic overload. At the same time, the turnover of goods through the western border of China is insignificant (about 1,5 billion dollars). Due to limitations of transportation routes, only 73 of 699 million tons of cargo are transported in this

region by the railway. Because of the lack of direct channels for export, manufacturers located in Xinjiang lose up to 500 million dollars per year. Absence of direct access to the sea for Mongolia and peripheral provinces of China makes the potential of above mentioned corridors even more significant.

Certainly, in the short term, the main export route from China will remain marine transport corridor which provides the throughput of 13 million TEUs.²⁹ This is facilitated by several factors: the introduction of the second line of Suez Canal has lowered the average waiting time for vessels to passage from 10-12 hours to 3 hours. Due to this fact the maximum throughput has increased from 49 to 97 vessels a day. Appearance of the high volume vessels of Triple E and Post-Triple E types with capacity from 18 thousand to 21 thousand TEUs creates a tough competition for land modes of transport. In addition, the freight by sea is characterized by low transportation costs of around 350-500 dollars per 1 TEU.

However, the need to establish alternative infrastructure for goods exporting through the Russia and Mongolia is determined by the geo-strategic factors, which, in turn, are very important for China. Its export-oriented economy is heavily dependent on maritime industry market condition and the capacity of certain waterway bottlenecks (in particular, the Suez Canal and the Singapore Strait). Another dependancy factor is the South China Sea route operational reliability, where the dispute on some islands territorial allegiance still remains unsolved³⁰.

On the other hand, overland transportation routes are already functioning³¹ and several corridors are developing simultaneously. These include, for example, TRACEKA and Trans-Mongolian Railway³². According to our estimates, in close perspective Russian transportation system carrying capacity will allow to handle 1.5 million TEU at prime cost no more than 1,400 USD per container. Potentially, this route has certain economic advantages if compared with other competing

²⁹ S. Vakulenko, P. Kurenkov, Y. Nikonov. Logistics of transit container flows attraction in Russian Federation transportation system.

³⁰ D. Mosyakov. Play on the edge: Chinese politics in South China Sea. URL:

<http://www.perspektivy.info/print.php?ID=256623>; Primarily it concerns Paracel and Spratly Islands

³¹ Container trains are operated on following routes: Zhengzhou - Hamburg (4 trains per month), Chongqing - Duisburg (since 2011, 18 trains per month) and the Chengdu-Lodz (3 trains per month).

³² Eurasian development Bank. EurAsEC International Transport Corridors: faster, cheaper, more. 2009. URL:<http://transtec.transtec-neva.ru/files/File/eurozec.pdf>.

routes - namely east rail outputs to the Pacific ports of China. Freight and logistics capabilities within the Chinese railway system are mostly exhausted.³³ A typical example is a Sino-Mongolian project at the Port of Tianjin — its developmental perspectives are limited to rail infrastructure freight capacity; and the deficit persists despite the active construction activities.³⁴

We can observe the same situation on the approaches to the Pacific ports of Russia. 15 years ago, government implemented partial solution and adapted Trans-Siberian Railway to the use of electric power. It made possible the permanent circulation introduction for freight trains with the weight of 6000-6300 tons with a capacity of 129 trains per day and speed increase up to 120 km / h.

Further measures included Kuznetsovsky tunnel (Baikal-Amur Mainline, BAM) reconstruction.³⁵ The capacity of the BAM on the approaches to the Vanino port cluster has increased to 35.5 million tons of cargo. In consequence of these changes, the use of Russian ports has increased too. Nevertheless, by 2015 freight capacity deficit on the approaches to the ports of the Far East, estimated at 40 million tons, emerged again. According to the adopted program of Russian Railways development, Eastern Railways carrying capacity as a whole will increase to 66 million tons per year by 2018 (figure 7).

³³ L. Blancas, G. Ollivier, R. Bullock. Customer-driven Rail Intermodal Logistics Unlocking a New Source of Value for China. *China Transport Topics* # 12, 2015

³⁴ J. Wu, C. Nash., D. Wang. Is high speed rail an appropriate solution to China's rail capacity problems? *Journal of Transport Geography*. vol.40, p.100-111. 2014

³⁵ Federal Rail Transport Agency. Reconstruction of Oune-Vysokogornaya route and Kuznetsov tunnel construction. URL: http://www.roszeldor.ru/invest_project/in_pr_vysokogorn

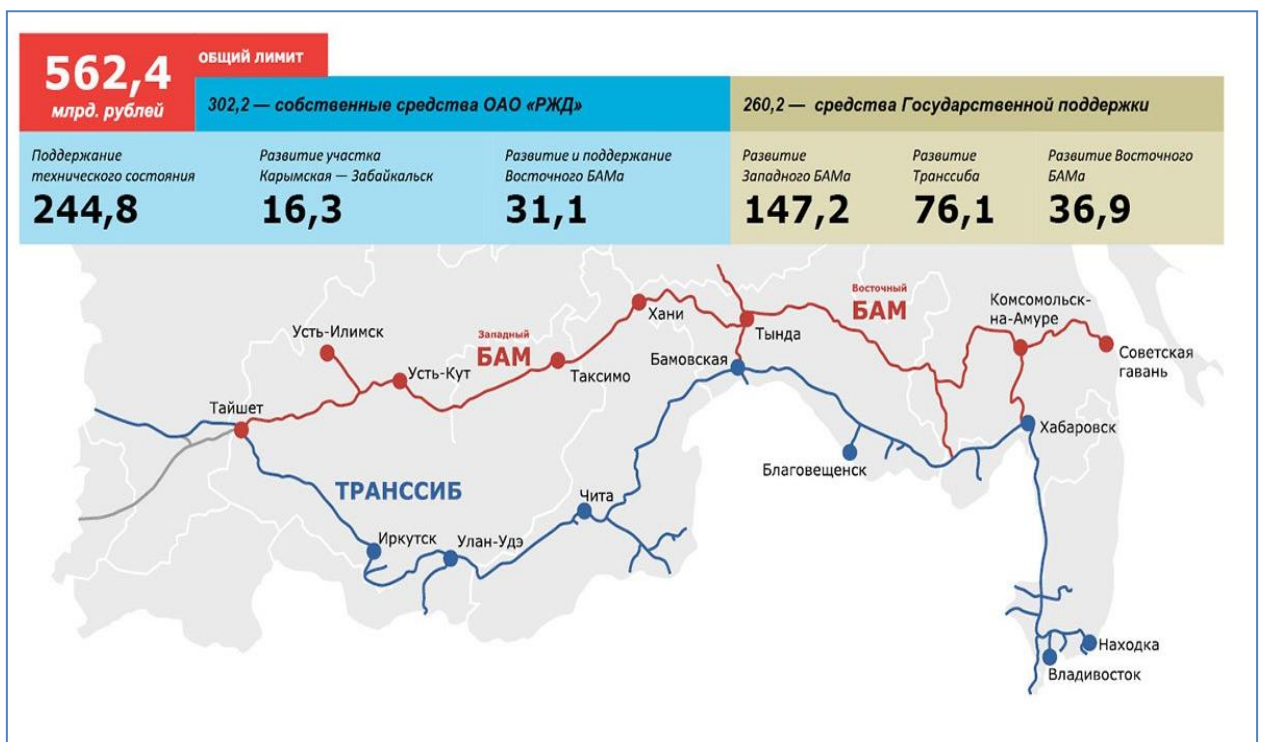


Figure 7. Eastern landfill railway infrastructure development project 2014-2017.

Integration of the other countries into New Silk Road economic belt will also provide the cargo base increase for transit traffic through Western Mongolia. In particular, rail corridor between China and India on Lhasa-Katmandu-Gorakhpur route (with transit through Nepal) has been announced, but its prospects are unclear. Heavy passes on the Sino-Indian frontier; different gauges, requiring repeated wheel handling at splicing stations in Mongolia and India³⁶; Indian rail infrastructure congestion.³⁷ Nevertheless, we cannot ignore its positive sides³⁸ — the project will be of high demand among shippers requiring special conditions that excludes sea routes or among those, who are not sensible to higher transportation cost. But the most significant argument for this project is shorter route from Mongolia to India by about 4,500 km.

³⁶ In India 1676 mm common track gauge has been introduced after the reform under state programme.

³⁷ Report of the Committee for Mobilization of Resources for Major Railway Projects and Restructuring of Railway Ministry and Railway Board. 2015 [Электронный источник]. URL: http://www.indianrailways.gov.in/railwayboard/uploads/directorate/HLSRC/FINAL_FILE_Final.pdf

³⁸ X. Yang et al. Analysis of intermodal freight from China to Indian Ocean: A goal programming approach/ Journal of Transport Geography 19 (2011) 515–527

Indian initiatives to build “North-South” corridor (INSTC)³⁹ fully fit the mentioned transportation development framework and will decrease the load on Bandar Abbas and Caspian ports. In 2006 Qinghai-Tibet Railway has been opened and extended in 2014, linking the city of Xining to Lhasa and Samzhubzê (Tibet Autonomous Region (TAR)).⁴⁰ The issue of further railway extension to Nepal has been raised in December 2014⁴¹, during the visit of Minister of Foreign Affairs Wang Yi Wang Yi in Kathmandu.

The examined corridor at the territory of China has no alternative route until Golmud and is potentially linkable with Altai-Hami-Kyzyl corridor in Xinjiang Uygur Autonomous Region if extended to the Sino-Mongolian border⁴² (figure 6). This idea does not look fantastic Chinese government — according to the XIII five-year plan (2016-2020) 23 thousand kilometers of new railway lines are scheduled to be built.⁴³

Conclusions

Joint railway projects under Steppe road, Silk road and International North South Transport Corridor initiatives, such as Kuragino-Kyzyl-Altai-Hami, Arts Suuri-Erdenet and Samzhubzê-Kathmandu-Gorakhpur lines has the potential to connect in the Western Mongolia and Western China. Being at the crossroads of transport and communications, the region takes central position and can benefit from its transport and geographic location. The development of overland routes here, in terms of both transit and development of the resource potential requires considerable effort. Russia is ready for cooperation and development of the transport communications in this fastest growing region. One of the key pillars is investment in such projects, aimed at infrastructure bottlenecks removal or introduction of a unified loading sheet for CIM / SMGS carried goods.

³⁹ International North South Transport Corridor. URL:<http://www.insteindia.in/>

⁴⁰ 青藏铁路. URL: <http://www.qingzang-railway.com/qzgs/>; 拉薩日喀則鐵路通車 耗資巨大車程減半. URL: http://www.bbc.com/zhongwen/trad/china/2014/08/140815_tibet_shigatse_rail

⁴¹ L. Zhao. Rail line aims for Nepal and beyond. URL: http://www.chinadaily.com.cn/world/2015-04/09/content_20406196.htm

⁴² The 387 km missing section Yinma – Dunhuang, located in Gansu province is under construction

⁴³ China will invest 438 billion USD in railways in 2016-2020. URL:<http://infranews.ru/logistika/zheleznaya-doroga/43503-kitaj-investiruet-438-mlrd-v-zheleznye-dorogi-v-2016-2020-gg/>