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## **Peculiarities of development and perspectives of cooperation in the field of logistics of the Republic of Belarus**

### **Uwarunkowania rozwoju i perspektywy współpracy w dziedzinie logistyki w Białorusi**

**Abstract.** The research is devoted to the study of features of development and perspectives of cooperation in the field of logistics of the Republic of Belarus, the effectiveness of its functioning at the present stage, identifying the weakest areas and determining the priority directions of the development of industry. The paper gives the main characteristics of the sphere of transport services for certain modes of transport, indicating the advantages of using of transit through the territory of the country; analyzes the current state of the logistic infrastructure in the course of which the weakest areas are identified in accordance with the methodology for calculating of Logistic Performance Index; outlines the prospects for the development of logistics in the country, taking into account the current program for the development of industry for 2016–2020 and the country’s participation in the construction of the “Silk Road”.

**Key words:** logistics, transport services, logistic infrastructure, Logistic Performance Index

**Synopsis.** Badanie poświęcono poznaniu uwarunkowań cech rozwoju branży logistycznej w Białorusi, efektywności jej funkcjonowania na współczesnym etapie, identyfikacji najbardziej słabych miejsc i określenia priorytetowych kierunków rozwoju branży. W pracy przedstawiono główne cechy sfery usług transportowych dla poszczególnych rodzajów transportu, z podaniem zalet korzystania z tranzytu przez terytorium kraju; analiza obecnego stanu infrastruktury logistycznej, w ramach którego zidentyfikowane najsłabsze miejsca zgodnie z metodyką obliczania Logistic Performance Index; określono perspektywy rozwoju logistyki w kraju z uwzględnieniem realizowanego programu rozwoju branży w latach 2016–2020 i uczestnictwa kraju w budowaniu „Jedwabnego szlaku”.

**Słowa kluczowe:** logistyka, usługi transportowe, logistyka infrastruktury, indeksu efektywności logistyki

## **Introduction**

The Republic of Belarus is a country located in the Central Europe with the territory of 207, 6 thousand square km and population of about 9.5 mln people. Belarus borders on five countries: Russia, the Ukraine, Poland, Lithuania, and Latvia.

During the last decade, Belarus had trade relations with 196 states across the globe. The European Union is the second largest trade partner of the Republic of Belarus after Russia. Its share accounts for about 30% of exports and a fifth part of imports. In 2015 Belarus trade turnover with EU countries amounted to 14.3 bn USD [Kulakou 2017].

Poland is one of the 10 largest trade partners of the Republic of Belarus, ranking the sixth place in terms of trade turnover<sup>1</sup>.

The Republic of Belarus is a member and one of the founders of the Eurasian Economic Union. The single market of the Eurasian Economic Union is at its early stage. But according to the signed agreements and to the planned roadmap during the adaptation period of ten years, the country should reach the fully-functioning single market. The current stage in the development of economy, characterized by the growth of business activity in different spheres of foreign economic activity, determines the increase in the state's transit attractiveness.

The favorable economic, geographical and geopolitical position of the Republic of Belarus on the way between the dynamically developing world business centers such as the European Union, the Russian Federation and the countries of the Asia-Pacific region – predetermines its role as a key element in creation of a new system of transport links on the Eurasian continent, oriented on mutually beneficial cooperation.

## **Purpose and research methodology**

Objectives of the research are to study the existing and potential opportunities of the Republic of Belarus in the sphere of logistical services rendering, taking into account available infrastructure, its strengths and weaknesses; identify the narrowest areas requiring urgent development.

The methodology of the study is based on the dialectical approach to the phenomena studied. Applying the system analysis method allowed to comprehensively study the current state of the transport system and the logistics infrastructure of the Republic of Belarus, to identify the advantages and disadvantages that the country has on the logistics services market. The method of comparative analysis made it possible to identify the main trends in the development of the transport services market, determine the place of the country in the world list by The Logistic Performance Index. Monographic method made it possible to study the experience of implementation the program of development of the logistics system of the Republic of Belarus for the period until 2015.

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<sup>1</sup> International trade center Trade statistics for international business development, [electronic resource] [http://www.trademap.org/tradestat/Product\\_SelCountry\\_TS.aspx?nvpm=1|112|||TO-TAL||2|1|1|2|1|1|1|](http://www.trademap.org/tradestat/Product_SelCountry_TS.aspx?nvpm=1|112|||TO-TAL||2|1|1|2|1|1|1|) [accessed: 12.01.2017].

## Results of the research

Logistic activity covers all branches of economy and has a significant influence on improvement of its efficiency. The need for the logistic system development of the Republic of Belarus is determined by the country's integration into global commodity flows.

Geographically, historically and culturally Belarus is an integral part of Europe, situated at the crossroads of major transportation and trade routes that link various regions of the European continent.

### Transport

The transport system of the country is represented by railway, road, water, river, air and trunk (pipeline) transport. The automobile and railway network of roads is developed in Belarus.

Automobile transport. The coverage level of high-quality roads is 86%. The road network is represented by all types of roads, including modern highways that are the part of the pan-European transport corridors. The 2nd and 9th international transport corridors pass through the territory of the Republic of Belarus [Figure 1].

M1/E30 highway: Brest – Minsk – Russian border is the part of a trans-European transport corridor II Berlin – Warsaw – Minsk – Moscow – Nizhny Novgorod connecting Germany, Poland, Belarus and Russia. The length through the territory of the republic is 606 km.

M8/E95 highway: Russian border – Vitebsk – Gomel – Ukrainian border crosses the territory of the country from north to south, it is the part of the Trans-European Transport Corridor IX, which joins Finland, Lithuania, Russia, Belarus, the Ukraine, Moldova, Romania, Bulgaria and Greece. The length through the territory of the republic is 456 km [International cargo..., 2016].

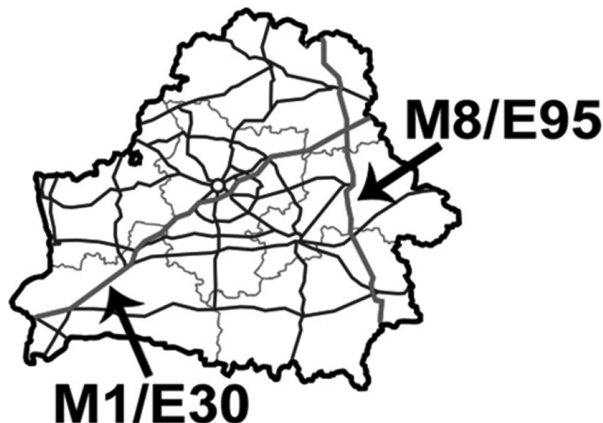


Figure. 1. Location map of the main international transport corridors in the territory of the Republic of Belarus

Rysunek 1. Mapa lokalizacji głównych międzynarodowych korytarzy transportowych na terenie Białorusi

Source: own elaboration based on [Transport..., 2015].

The advantage of use of the Belarusian section of the transport corridor No 2 is a significant reduction in the distance (30–35%) of transportation compared to the variant of the bypass through the Baltic countries or the Ukraine.

Another important component of the country's transport system is the section of the Cretan Corridor No 9 and No 9B which joins Finland, Lithuania, Russia, Belarus, Ukraine, Moldova, Romania, Bulgaria and Greece. Thanks to the availability of this corridor, a stable transport link has been established between the northern and the southern seas of the European continent.

The Republic of Belarus is carrying out purposeful work on the development of Trans-European transport corridors that pass through its territory. At the beginning of 2015 there were about 4 500 organizations providing transportation services in Belarus. The industry is represented both by national and foreign (basically, by Russian) international road hauliers, as well as by numerous private and public organizations that provide services for the transport of goods and passengers within the country [Logistics services...].

Railway transport. The railways of Belarus use the gauge of 1520 mm and 1524 mm, the operational length of the tracks is 5490 km, the total length of the electrified lines of which is 1013 km (18% of the total length of the road).

The leader of the railway transportation is the GA "The Belarusian Railway", which is directly subordinated to the Ministry of Transport and Communications. In addition to this, the Belarusian Railway is the only operator of transportation of this type of transport in Belarus. "The Belarusian Railways" carries out about 75% of all cargo operations in the country and more than 50% of passengers' traffic [Transport..., 2015].

The directions of transportation of transit cargo by railway have formed on the territory of the republic. At the same time, about 92% of them are export or import cargo of the Russian Federation and the Republic of Kazakhstan.

Pipeline transport. The most important pipelines pass through the territory of Belarus, through which transit (export and import) of Russia's energy resources to the EU countries is carried out. The total length of the pipelines is about 11 000 km (about 2/3 of them are the gas pipelines).

1. The transit pipeline "Druzhba", the trunk gas pipeline "Yamal-Europe" pass through the territory of Belarus.
2. The JSC "Beltransgaz" (OAO Gazprom) operates the Belarusian part of the Yamal-Europe main gas pipeline, which is 575 km long with the linear part and 5 compressor stations.
3. The JSC "Beltransgaz" operates the Belarusian section of the "Yamal-Europe" gas pipeline with a length of 575 km of the linear part and 5 compressor stations.
4. The oil pipeline "Druzhba" is operated by the JSC "Gomeltransneft Druzhba" and the JSC "Polotsktransneft Druzhba", which are the part of the Belarusian concern of oil and chemistry.

Also, a network of oil products' pipelines is established on the territory of the republic. It is connected with the Russian products' pipelines and has an access to the Western Ukraine and to the port of Ventspils.

Air transport. The air transport of Belarus is represented by the organizations that carry passengers and cargo by air both on the territory of the republic and abroad. All of

them are state institutions and are included in the Department of Aviation of the Ministry of Transport and Communications of the Republic of Belarus.

The RUE “National Airport Minsk” is the main air port of the Republic of Belarus. The RUE “National airlines Belavia” and the JSC “Airlines Transaviaexport” are the largest carriers on the market [Transport..., 2015].

Inland water transport. In the system of water transport, there are 10 river ports of various levels, as well as transport and forwarding companies engaged in transportation in the fields of domestic and maritime traffic [Review of the...].

The Republic has around 1600 km of waterways, with transport along such rivers as the Dniapro, Pryppiać, Biarezina, Zachodniaja Dzvina, Sož, Nioman, and the Dniaproŭska-Buŭski kanal. The river fleet employs 2000 people, largely transporting mineral and construction cargoes, as well as passengers. Oil products, as well as overweight and oversize cargoes, are also carried by water transport. The river fleet annually transports around 4 mln t of cargo.

## Cargo Transit

Transit and search for new promising markets for transport services are important for the Republic of Belarus, as it is an intercontinental state that does not have an access to the seas, and also does not possess a significant source of raw materials.

At present, the transit of cargoes by road through the territory of the republic is carried out by the companies from more than 40 countries. The largest volumes fall on transportation carried out with Russia, Turkey, Hungary, Germany, Lithuania and Poland. Volumes of cargo transportation in the Republic of Belarus are presented in the Table 1.

Table 1. Dynamics of Cargo Transportation in the Republic of Belarus by mode of transport [mln tons]

Tabela 1. Dynamika przewozów ładunków w Białorusi według rodzajów transportu [mln ton]

Type of transport	2011	2012	2013	2014	2015	2015 to 2011 [%]
Cargo transportation by all means of transport	493.3	484.4	471.2	467.5	447.4	90.7
Including:						
Pipeline	142.8	137.4	134.2	130.6	132.5	92.8
Railway	152.8	153.7	140	141.4	131.4	86.0
Automobile	191	189.3	192.5	191.7	180.4	94.5
Other Modes Of Transport	6.7	4	4.5	3.8	3	44.8

Source: [International cargo...].

Based on the available statistical data, we can conclude that there is a tendency to reduce the volume of cargo transportation through the territory of the Republic of Belarus. The current situation is largely due to the complication of political and economic relations between the Russian Federation and the countries of Western Europe, which led to a reduction in transit freight flows.

In the structure of volume of transit traffic carried through the territory of Belarus, railway and road transports have the largest share. Over the past 5 years, they accounted for an average of about 70% of the total volume of freight [Figure 2].

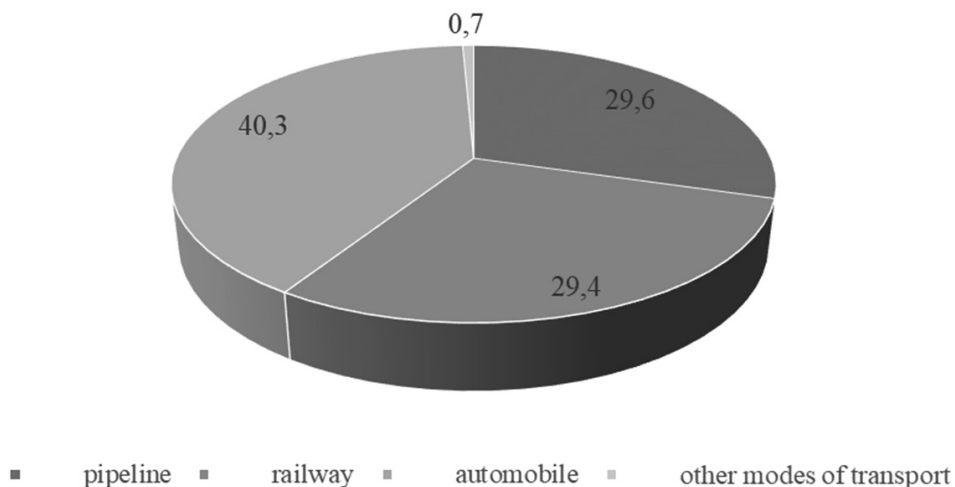


Figure 2. Structure of freight turnover of the Republic of Belarus by modes of transport in 2015 [%]  
Rysunek 2. Struktura przepływu ładunków w Białorusi według rodzajów transportu w 2015 roku [%]  
Source: [International cargo...].

Revenues from transit freight shipments in 2015 amounted to about 378,3 mln USD. The basis commodity flows that pass through the territory of the Republic of Belarus, constitute the foreign trade cargo of the countries of the Asia-Pacific region and the European Union. In connection with the changes in export directions of the Russian Federation and the Republic of Kazakhstan from the EU market to the market of the countries of the Asia-Pacific region, the volume of goods' transit across the territory of the Republic of Belarus is expected to decrease.

### Logistics Infrastructure

The logistics system of Belarus is built on the effective use of geographical location. However, in spite of this, the potential of the republic has not been fully used up to now.

Logistics business in Belarus began to develop in the last decade. Despite such a short period, the program of development of the logistics system of the Republic of Belarus for the period until 2015 has already been completed.

Within the framework 20 transport and logistics centers were built, and another 18 were put into operation outside the Program. The most attractive regions for construction are Minsk and Brest regions. In Minsk region 28 of 38 logistics centers were built, in Brest region – 6 ones. The total storage area is 640 000 m<sup>2</sup>.

According to the experts, in order to carry out effective activities, this quantity is sufficient, but it is important to provide an expanded list of services.

The volume of logistics services rendered in the Republic of Belarus for the year 2015 amounted to about 749 mln USD, including 490 mln USD rendered by transport and logistics centers, 58 mln USD by wholesale-logistics and trade-logistics centers. The revenues from logistics services for the processing of transit cargo on the territory of the Republic of Belarus amounted to about 231 mln USD.

The largest operators of logistics real estate at the Belarusian market are: the RUE “Beltamozhservis” (it is the largest operator); the LLC “Twenty-four”; the CJSC “Alsan”, the JSC “Belmagistralavtotrans” [Tsimayeu and Goncharova 2015].

Annually new projects of logistics and modern warehouse complexes are announced, and some of them are created as objects for own needs (especially for large network retailers).

Experience shows that freight carriers choose those routes where the work of all structures is clearly established: customs clearance procedure, transport and road infrastructure, etc. Therefore, it is especially important for Belarus to learn how to combine its transit and logistics functions.

It is important that logistic centers cover the main transport hubs; therefore, a dry port in Kolyadichi was opened in the republic. The port cooperates with the Baltic Sea and the Black Sea.

At present, in Belarus, a lot of large logistics facilities remain unloaded by 100%. Recession in the real estate’s segment of warehouses was outlined last year, causing a loss of investors’ interest to the logistics industry. Mainly, this happens because the supply significantly exceeded over the demand.

The reason for the lack of demand for goods storage points is also the fact that customers have already developed their own logistics systems. These circumstances led to a decrease in prices in this segment of the market, which opens up additional opportunities for foreign partners.

The development of internal logistics is constrained by the insufficient development of road infrastructure, which is exacerbated by the introduction of seasonal and temperature restrictions for the movement of heavy vehicles during the year.

There is also an imbalance in the distribution of population across the country and the concentration of production facilities. One-fifth of the population lives in Minsk and its surroundings, where also production facilities are concentrated.

The offer of quality warehouse property in neighboring countries is much higher than the similar offer in Belarus. This is explained by the difference in the period of development of the logistics industry in the countries.

The World Bank publishes an annual ranking of countries on the quality and accessibility of logistics services. The logistics performance index (LPI) is the weighted average of the country scores on the six key dimensions:

- 1) Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs;
- 2) Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology);
- 3) Ease of arranging competitively priced shipments;
- 4) Competence and quality of logistics services (e.g., transport operators, customs brokers);

- 5) Ability to track and trace consignments;
- 6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time.

According to the World Bank, Germany is the country with the most efficient logistics in the world. Belarus is inferior to neighboring countries, practically in all key indicators, accounted by the International Monetary Fund in calculating the Logistic Performance Index [Figure 3].

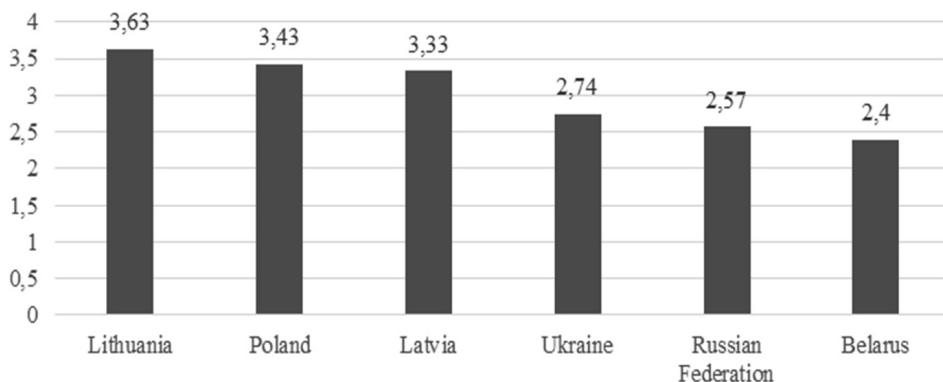


Figure 3. Logistic Performance Index Score by countries in 2016

Rysunek 3. Wskaźnik efektywności działalności logistycznej w państwach w 2016 roku

Source: own elaboration based on [International Scorecard].

Among the countries bordering with Belarus leaders in LPI are Lithuania and Poland which occupy 29th and 33rd places in the world rating.

By the results of 2016, the Republic of Belarus ranked 120 among 160 countries, with the LPI equal to 2.4. For the period from 2012 to 2016, the value of LPI decreased by 0.24, which led to a deterioration in the position of the country in the world rating from 91 to 120 [Table 2].

Table 2. Dynamics LPI Score and LPI Rank of the Republic of Belarus

Tabela 2. Dynamika wskaźnika efektywności logistyki i rating LPI Białorusi

Indicators	2012	2014	2016	Change in indicators
LPI Score	2.61	2.64	2.4	-0.24
LPI Rank	91	99	120	21

Source: own elaboration based on [International Scorecard].

It is obvious that the republican program for the development of the logistics industry, realized before 2015, hasn't given the desired results. At present time, all components necessary for high-quality logistics services in the country are in need of improvement and development. The most problematic are customs – 2.06 (place 136) infrastructure – 2.1 (place 135), tracking and tracing – 2.16 (place 134) [Economy Official... 2017].



### **Future of logistic development**

In order to solve the existing problems, on July 18, 2016, the Republican Program on the Development of the Logistics System and Transit Potential for 2016–2020 was approved.

The objectives of the Republican Program are to improve the conditions of logistics activities, to increase the efficiency of using of the infrastructure necessary to provide logistics services, and the transit potential of the Republic of Belarus.

The main tasks in the implementation of the program are:

- improvement of quality and comprehensiveness of logistics services;
- development of logistics infrastructure, increasing its efficient use;
- improvement of legal and economic conditions for an effective use of transit potential;
- increase of a multiple of 1.5 in logistics services (to 113 mln USD);
- increase in the total warehouse area of logistic centers by 1.64 times [Republican Program...].

Specific investment projects include plans to upgrade the Belarusian stretch of the Moscow-Paris railway network and the motorway from Warsaw to Moscow, as well as a lot of regional roads and by-passes.

The effective functioning of the logistics system is largely determined by legal regulation. Analysis of legislation in the field of logistics shows that it regulates only certain areas of transport and logistics activities. Therefore, it is important to develop the legal framework for its implementation.

The perspective is participation of Belarus in the development of “Silk Road”, as overland freight from China transports three times faster than by sea. To ensure a direct presence in the Chinese transport and logistics market, a representative office of the LLC “Belintertrans-Germany” was opened in Beijing. For now, there is a number of achievements in this direction. So, in 2015 the volume of container traffic between China and the Western Europe through Belarus has increased by 2 times and reached 45 thous. containers.

In January 2012, Belarus and China ratified the intergovernmental agreement on a joint project on construction of an industrial park “Great Stone”. The Great Stone park is designed as a genuine eco-friendly city for innovative enterprises with a high export potential, with a special legal status and optimal conditions for doing business. The park will welcome high-tech companies from all over the world. The Great Stone park is being built 25 km away from the Belarusian capital, close to the international airport Minsk, railroads, and the transnational motorway “Berlin-Moscow”.

The industrial park “Great Stone” gives the following advantages to its resident companies:

- prospects of the duty-free access to the market of the Single Economic Space, close vicinity to the European Union market;
- the system of tax and customs preferences (a 10 + 10 formula for the resident companies of the park: they will be exempt from corporate taxes for ten years and enjoy a 50% tax reduction in the following ten years);
- comprehensive “one-stop shop” service for the resident companies of the park.

## **Conclusions**

At the present stage, the integration of the Republic of Belarus into global commodity flows is impossible without having an effective logistics system. The study of existing and potential opportunities of the Republic of Belarus in the sphere of logistical services made it possible to identify the most problematic moments and the most needy areas for the logistic development.

The most problematic areas are: insufficient development of road infrastructure, lack of complex logistics services, loss of investors' interest to the logistics industry, irrational placement of some logistics centers. And as a result reduction of the volume of cargo transportation through the territory of the Republic of Belarus and incomplete loading of logistics facilities.

The research shows that the republic is inferior to the absolute majority of countries, including all neighboring countries, by the main indicator determining the quality of provided logistical services, ranking 120 place in the list of countries on the Logistic Performance Index published by the World Bank.

According to our research to achieve effective functioning, the further development of the logistics system should be directed to: development of road infrastructure in the direction of revision the seasonal and temperature restrictions; provision of the fullest possible range of competence logistics services; organization of integrated logistics services on the basis of a single contract for the provision of services; creation the conditions for attracting investors to this sector of the economy.

Despite the existing problems, the country has reserves for the development of the logistics system and transit potential, which are related to the convenient geographical location and the availability of international transport corridors (M1/E30 and M8/E95 highway); the common customs border with the countries of the Eurasian Economic Union; participation in the development of "Silk Road", as overland freight from China; construction of an industrial park "Great Stone"; the implementation of the Republican Program on the Development of the Logistics System and Transit Potential for 2016–2020. The fact that a lot of attention is paid to solving the problems of this business area from the state side, allows to make optimistic forecasts about its development.

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