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Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:

Gumenyuk, I. S., & Orlov, S. (2014). The Kaliningrad region as a potential coastal transport cluster. *Baltic Region*, 3, 121-131. <https://doi.org/10.5922/2079-8555-2014-3-9>

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THE KALININGRAD
REGION
AS A POTENTIAL
COASTAL TRANSPORT
CLUSTER

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The coastal regions of Russia, which ensure the country's major export/import transactions, have potential for developing special forms of spatial organisation of regional transport system — transport clusters. This form of spatial organisation is better adapted (in comparison to a transport complex) to the ever-changing conditions of a competitive market. It suggests that all business entities of the territory interact thus increasing the competitiveness of transport cluster as a whole. The Kaliningrad region is one of the territories where the formation of an efficient international transport cluster is possible. This article offers a definition of a transport cluster and describes its internal organisation as well as the features of formation thereof in the Kaliningrad region. The practical significance of the article lies in justifying the production of practical recommendations for developing the region's transport potential based on the cluster theory. One of the major results of the study that is presented in this article is the justification of the need for modernising the information and organisational elements of the regional transport complex alongside modernising the transport system infrastructure.

Key words: transport system, transport cluster, Kaliningrad region, coastal region

Transportation as an economic sector is one of the strategic priorities for Russia as a whole and its individual regions. The ongoing transformation of the country's economic management model and the strive for integration into the global world market put forward a powerful macroeconomic demand for a high-quality transport sector capable of increasing freight and passenger traffic regionally, nationally and internationally.

The experience of developed countries [1—4] shows that one of the most effective mechanisms to enhance regional competitiveness is clusterization of the socio-economic space of regions [5]. For

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Submitted on April 17, 2014.

doi: 10.5922/2079-8555-2014-3-9

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Russia, which has an untapped potential in terms of transportation services, the establishment of regional transport clusters poses a great challenge. They can play a key role in ensuring competitiveness of the economy, creating a favorable business environment, and optimizing transport services in some regions of the country [6].

The concept of a 'transport cluster' originated in the context of the cluster theory initiated in the works of A. Marshall [7; 8] but the real founder of the theory is considered to be M. Porter [9; 10]. Transport cluster is an association of businesses of the transport industry characterized by territorial proximity and common strategic priorities, complementary to each other and reinforcing competitive advantages of individual companies, the cluster and the region as a whole [11]. The transport cluster as well as the transport industry is a form of spatial organization of the transport system in a local area (region). In contrast to the transport industry, the transport cluster is a qualitative form adapted to a constantly changing competitive market that is in regular search of new ideas (innovations) that can maximize profits, the form in which all the businesses of an area interact with each other thus increasing competitiveness of the transport cluster in general.

An effectively operating transport cluster structurally should consist of several components (cluster subjects), each of which performs a specific function within the cluster [12].

1. *Production*. The central element of the cluster represented by carriers engaged in passenger and freight transportation as well as operating special vehicles.

2. *Logistics*. A group of resource suppliers (raw materials and components). It includes suppliers of vehicles, fuel, spare parts and accessories etc. as well as passengers and cargoes, customers for work and services performed by special vehicles.

3. *Support*. A group of companies and organizations, which serve the main and additional processes carried out with resource providers. Providers of customer services. The group includes organizations, maintaining vehicles, developing software, navigation and monitoring systems, as well as companies doing marketing research, advertising campaigns etc.

4. *Consumers*. A group of product consumers. Consumers include individuals and legal entities, government agencies, federal and regional authorities.

5. *Research*. A group of research institutions for the development of innovations for the cluster enterprises. These include research organizations, design bureaus, departments of universities. All these institutions carry out R&D activities for transport operators and representatives of other groups of the cluster.

6. *Training*. A group of educational institutions. Institutions of secondary and higher education that train specialists in areas popular among transport cluster actors.

7. *Export*. A group of dedicated institutions engaged in the promotion of basic and additional products (services) of the cluster outside the region and country.

The latter three components of the transport cluster are typical of strong clusters operating for a long time. At the initial stage of the establishment and operation of a cluster, the system can function without these components unlike the first four, the presence of which is an indispensable condition for the creation and development of a transport cluster. The internal structure of a transport cluster is schematically displayed in the form of a model (Fig.).

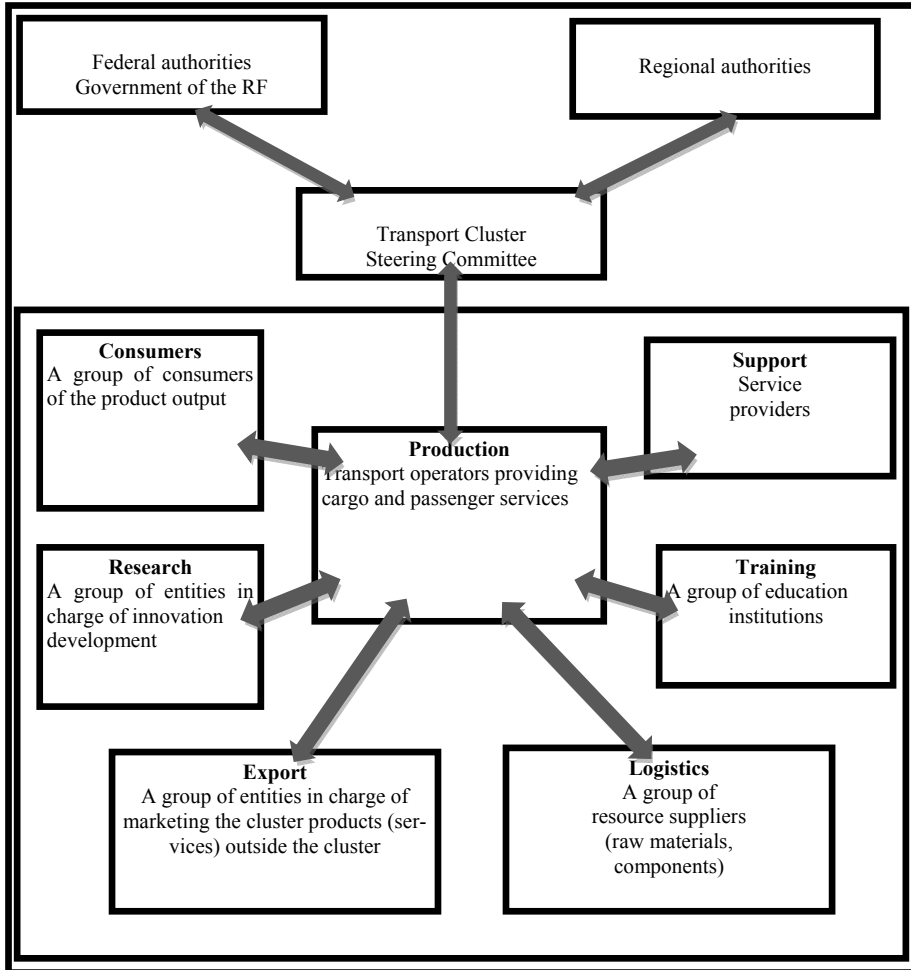


Fig. Transport cluster model

Source: compiled by a group of authors.

Transport cluster has an integrated impact on the region's social and economic development at the macro level as well as on individual actors of the transport cluster in determining the use of the transport infrastructure. Transport as one of the leading elements of the production infrastructure. On the one hand, it ensures the mobility of goods and resources. On the other hand, it facilitates access to the areas thus providing the possibility of free

movement of goods, resources and people [13]. In turn, the regional socio-economic development is the key driver behind the development of demand for passenger and cargo transportation services. Changes in the structure of production, the growing internationalization of business have an impact on the use of transport infrastructure and the formation of the transport cluster as a whole.

Transportation clusters are being successfully developed in regions with a significant transit potential. Coastal regions hold a special place among all the regions of the Russian Federation to create transport clusters. Due to the geographical position, coastal regions of various hierarchical ranks draw on maximizing beneficial use of their coastal position thereby forming the so-called maritime set of industries [14; 15]. Such a set is often based on the sea transport, which becomes a driver not only for internal development, but also for the development of the region's external specialization. The development of the transportation industry in some coastal areas is one of the priority tasks of the state as major export-import operations go through them. In Russia, the coastal areas are the Leningrad region along with the city of St. Petersburg are almost always considered as a single element, developed in close interaction with other regions — Kaliningrad, Krasnodar, Rostov, Murmansk, Arkhangelsk, Sakhalin and Primorsky Krai.

Against the background of the coastal regions mentioned above, the Kaliningrad region does not have such an impressive transport system; it demonstrates relatively modest figures for freight and passenger transportation. In this context, from the point of view of the implementation of the national strategic objectives, the region is among the most important ones to ensure the export of Russian goods to Western Europe. According to the typology of regions developed by J. Friedman, the Kaliningrad region is a kind of a 'development corridor' playing an essential role in the international relations between Russia and the EU [16]. The Kaliningrad region certainly has all the necessary conditions for the creation of a transport cluster. All kinds of transport are developed and there is an ice-free port. The region borders on countries with well-developed transport infrastructures [17]. All these are pre-conditions for the creation of a powerful international transport cluster.

From the point of view of its spatial organization, the transport cluster of any region can effectively operate through localized inter-modal transport and logistic centres of various functional areas (nodes) inter-connected by high-quality transport corridors (lines).

According to the European methodology [18], from the functional point of view, the transport and logistic centres (clusters) are divided into three types:

— **Port transport and logistics centres.** They are established based on seaports or more commonly on the ports of colonies. They are mainly positioned in the cargo sector with passenger ports functionally complementing the general cargo activities of the port's transport and logistics centre.

— **Border transport and logistics centres.** They are created at transport nodes at the intersection of major international transport corridors with the state borders. Usually they have a specialised cargo profile. Historically they have developed through rail transport but commercial vehicles are now becoming increasingly important.

— **Territorial (regional) transport and logistics centres.** They are established based on the transport systems of medium and large cities as well as urban agglomerations (metropolitan cities integrated with its suburbs and other closely spaced settlements). There are both passenger and cargo sectors in the regional transport and logistics centres. Two sectors partly operate on a common infrastructure. At the same time, each sector has a dedicated infrastructure.

In the Kaliningrad region there could potentially be established 10 localized transport and logistic centres of various functional areas based on the inter-modal interaction of transport modes. It is these centres, which could potentially create a spatial framework for the region's transport cluster.

1. **Baltic port transport and logistics centre** has the potential to be created on the basis of the Baltiysk and Svetly cargo areas of the Kaliningrad seaport and will specialize in cargo transportation. The key element of the centre can be the inter-modal interaction between the marine and rail modes of transport. To develop the centre, the ferry-railway terminal in Baltiysk requires further shaping as well as an increase in cargo volumes by the Svetly cargo area, the leading element of which is the *Sodruzhestvo Soya* company. A passenger ferry service could potentially become an auxiliary element of the centre in case the ferry line project between the Kaliningrad region and the Swedish province Blekenge, which has been discussed in the last few years, is implemented [19].

2. **Yantarny port transport and logistics centre** can be set up near Yantarny settlement given the ambitious project designed to build a new deep-sea port in the Kaliningrad region with a potential annual output of 35 million tons of the processed goods is implemented [20]. When the port is constructed, an intermodal centre for sea, rail and road transport will be established there. A passenger service should become an important function of the centre, and it will be possible after the construction of a passenger cruise port in the town of Pionersky (according to one of the project options), or geographically it will become a part of the deep-water port at Yantarny.

3. **Mamonovo border transport and logistics centre**, in our opinion, is the fastest one in terms of practical implementation due to the active development of road transport. Out of all modes of transport in the region, the road transport matches the cluster theory well. It was possible to enhance the development of the centre due to the opening of the new automobile border checkpoint Mamonowo II-Grzechotki (2010). The potential development of the centre is connected with the revival of rail traffic through the existing border checkpoint Mamonowo-Braniewo that will provide intermodal cooperation in the framework of the road and rail centre.

4. **Bagrationovsk border transport and logistics centre** could potentially be created in the area of the existing border crossings Bagrationovsk-Bezledy (road) and Bagrationovsk-Bartoszyce (railway). It will be a combined passenger and cargo centre and will be set up as a transport and logistics centre in addition to that in Mamonovo. It will become relevant in the event of increased freight and passenger traffic in the Russian-Polish border area (also due to the operation of a new deep-water port).

5. **Nesterov border transport and logistics centre** can be established on the basis of the Nesterov transport hub, which also includes the road crossing point Chernyshevskoye-Kybartai. Railway transport represents the leading mode of transport to provide freight and passenger services between Kaliningrad and Russia's mainland. The centre is geographically most remote from major population centres, particularly Kaliningrad; and it greatly slows down its development based on the transport cluster principle.

6. **Sovetsk border transport and logistics centre.** One of the most variable intermodal transport and logistics centres, which constitute the basis of road, rail and inland waterway transport, can be potentially created in the area of Sovetsk. The establishment of such a centre would be possible provided the appropriate infrastructure is in place (a new road and rail border crossing to bypass the centre of Sovetsk as well as river crossings, which exist only on paper now) and the Russian-Lithuanian economic relations are enhanced.

7. **Kurshskaya Kosa (Curonian spit) border transport and logistics centre.** In the area of the Curonian Spit, it is possible to create the region's unique transport and logistics centre, the main task of which is to ensure tourist passenger traffic. The centre can provide intermodal cluster interaction between road and inland waterway transport, for which the appropriate infrastructure is now being built. Last year, the river crossing Rybachy-Nida operated seasonally was added to the already existing road crossing. Further development of the centre depends on the development of the inland waterway transport in the region and launching the Kaliningrad part of the European water route E70.

8. **Chernyakhovsk territorial transport and logistics centre.** In our experts' opinion, the Chernyakhovsk transport hub starts to transform into a transport and logistics centre. Its development potential is formed by building a major railway logistics terminal that will redistribute the existing rail traffic flows by reducing the load on the Kaliningrad transport hub and will provide more efficient movement of goods through the entire region. The executives of the Kaliningrad Railways are planning to build such a terminal, and they have informed experts in the field of transport and the Baltic Transport Forum about the decision. In 2014, it is planned to hold the forum for the sixth time. The development of the centre will also depend on intensification of the railway line Zheleznodorozhny-Skandava that stopped shipping coal from Poland to Kaliningrad region at the beginning of the 1990s and is now on the verge of its official closing.

9. **Khrabrovo territorial transport and logistics centre.** The potential of this centre is entirely connected with the only civil airport in the region, Khrabrovo. Its future prospects are associated with the preparation of the region to host the 2018 FIFA World Cup for which it is planned to renovate the existing airport terminal and the runway. This will enable Khrabrovo to receive transcontinental flights. The establishment of this transport and logistics center will be possible due to the implementation of the Kaliningrad Railways project designed to create a direct high-speed rail connection

between Kaliningrad and the airport following the example of the existing rail link between the centre of Moscow and Moscow airports. The Khrabrovo centre specializes in passenger traffic; transportation of cargoes will play an important but nevertheless secondary role.

10. Kaliningrad territorial transport and logistics centre. Unlike the transportation hubs listed above, the strategic task of which is to attract new cargo and passenger flows, the goal of the Kaliningrad hub is exactly the opposite and is associated with the need to ease the load from the existing transportation hub. Today the Kaliningrad transportation hub is in fact the only transport centre in the region, through which there is a redistribution of all the freight and passenger traffic because the hub operates in stressful conditions leading to its decreased effectiveness. For the organization of an effective transport and logistic centre here, it is necessary to spatially redistribute the existing and expected freight and passenger traffic between potential centres of the region. To take the load off the Kaliningrad transport centre, it is planned to implement a number of infrastructure projects, among which the following ones can be singled out in the first place:

- creation of a new deep sea port, which will ‘transfer’ a part of the port capacities from the old centre of Kaliningrad city to new areas;
- reconstruction of the ring road to bypass Kaliningrad as well as construction of a new western bypass involving construction of a road bridge across the Pregolya.

For effective implementation and subsequent operation of a transport cluster in the region, it is critically important that all stakeholders of the potential cluster are members of the information and analytical regional association. It is crucial not only for cooperation between businesses, but also for information exchange. The key element of the cluster, administering the Kaliningrad region’s transport, should be a steering committee composed of representatives of the Kaliningrad Regional Government and the federal authorities.

The Kaliningrad region’s transport cluster should include:

- companies and organizations specializing in the transportation of goods and passengers;
- companies and organizations that supply products or provide services to companies;
- companies and organizations serving the public sector including infrastructure companies related to transport, energy, engineering, environment, information and telecommunications;
- market infrastructure stakeholders (audit, consulting, credit and financial, insurance and leasing services, logistics);
- research and education institutions;
- non-profit and non-governmental organizations, business associations, the chamber of commerce;
- innovation infrastructure organizations and organizations supporting small and medium businesses.

Implementation of cluster initiatives in the Kaliningrad region transport sector will make it possible to:

- increase the freight and passenger traffic of the transport infrastructure and enhance its competitiveness;
- improve the quality and safety of the proposed transportation services;
- enhance the availability of services of the transportation system and reduce the cost of provided services;
- unlock the transit potential of the region;
- improve the regional investment climate in the field of transport services.

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