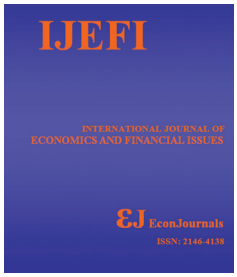

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Trans-aquatorial Clustering within the Trend of Cross-border International Economic Interactions

Alexander G. Druzhinin[1]*, Vasilisa V. Gorochnaya[2,3], Igor A. Dets[4], Stanislav S. Iatchninsky[5], Andrey S. Mikhaylov[6,7], Denis A. Volkhin[8]

[1]North Caucasus Research Institute of Economic and Social Problems, South Federal University, Rostov-on-Don, Russia, [2]North Caucasus Research Institute of Economic and Social Problems, South Federal University, Rostov-on-Don, Russia, [3]SB RAS Institute of Geography, Irkutsk, Russia, [4]SB RAS Institute of Geography, Irkutsk, Russia, [5]St. Petersburg State University, Saint-Petersburg, Russia, [6]North Caucasus Research Institute of Economic and Social Problems, South Federal University, Rostov-on-Don, Russia, [7]Department of Marketing and Communications, Immanuel Kant Baltic Federal University, Russia, [8]Department of Economic and Social Geography, Territorial Management of the Geographical Faculty, Taurida Academy, Russia. *Email: alexdru9@mail.ru

ABSTRACT

The article is devoted to the issues of cross-border clustering in coastal areas. The subject of the research is studied in the context of the modern globalization trends. The authors provide the classification of the cross-border clusters according to the vector of "coastalization" and "thalass-attractiveness" of the international economic processes. As the result, the new phenomenon of trans-aquatorial cluster, multiple types of its structure, are studied with the use of the modeling, classification, comparative and structural analysis methods. Using the means of logic and mathematical modeling the special peculiarities of cross-border and trans-aquatorial clusters are identified. The special attention is paid to the role of international ports and logistic complexes within the creation of conditions for the cross-border clustering in coastal areas. The empirical evidence of the research includes the typical cases of cross-border clustering with the features of trans-aquatorial interaction in European Union, Asia and Russia. Analyzing the development of trans-aquatorial clusters in the "growth triangles" in Asia regions, as well as in the North-West of Russia and Europe, the authors study the role of governmental initiative and international logistic port complexes in the process of regional economic development that results in the effective economic growth though the means of trans-aquatorial clustering.

Keywords: Economic Cluster, Cross-border Cluster, Trans-aquatorial Cluster, Coastal Areas
JEL Classifications: F23, F55, F63, R12

1. INTRODUCTION

Thalass-attractiveness (also named "coastalization"; Serra et al., 2014) is one of the main trends within the globalization process. The meaning of the World Ocean increases rapidly and is accompanied by retraction of economic, social, logistic, infrastructural and innovative potential into coastal zones (Notteboom and Rodrigue, 2005; Bosworth, 1996; Cartier, 1999; Verhetsel and Sel, 2009). Also the trend of thalasso-attractiveness affects settlement structure. According to the statistic data (Pak and Majd, 2011), 37% of the world population is concentrated in the 100 km coastal zone and 50% in 200 km zone. In such context coastal zone become the important issue for the interdisciplinary research including the aspects of its conceptualization, identification and delimitation.

The main reason for the coastalization is the special facilities for development of transport, economy, social sphere and settlement that in the whole lead to specific socio-economic environment for the outstripping development of the territory. Its practical implementation is connected with the process of clustering within regional economy. The clusters to develop in coastal zones are characterized by specific features and can be embodied in various forms, such as cross-border and cross-aquatorial clusters. Moreover, it is coastal zone to be the main area for

the clustering because of the increased destiny of economic subjects placed and being active at the local territory. The high concentration of economic actors and their interactions that leads to the high potential for the cluster formation is accompanied with the urbanism, metrapolization and other trends such as binary aquatorial and territorial structure, favorable positioning within the system of continental-ocean dichotomy (Bezrukov, 2008) and special economic regimes, e.g. free zones that help to attract investments.

2. METHODOLOGICAL FRAMEWORK

2.1. The Objectives of the Research

Economic clusters are traditionally viewed to be the concentrations of co-located groups of firms united by cooperation combined with market competition (Porter, 1990). Coastal areas are to become the additional resource for clusters' dynamism as they create special conditions for economic, social and demographic, institutional, ekistic and ecological conditions for cluster development. Moreover, it is the factor of coastalization to provide the shapes of forming clusters in its geographical meaning as well as in the meaning of the typological form of each specific cluster. In this connection it is obvious that the main trend of research in this sphere is presented in the countries and global regions which are maximally integrated in the economic and settlement context of maritime activity. The leading role belongs to the European Union, where the European network of maritime clusters has been developing successfully since its creation. At the present time this institution integrates 18 countries-participants[1]. The objective of this research is the process of cross-border clustering in coastal zones that leads to the appearance of the trans-aquatorial cluster as the particular phenomenon.

2.2. The Theoretical and Methodological Framework

The research proposes the classification of cross-border clusters, involves the methods of mathematical and logic modeling, cartography, empirical data analysis. The theoretical approaches used in the study are based on the theoretical works of Russian and foreign scientists in the area of regional economy and economic geography. Maritime clusters become the subject of scientific research at the theoretical level (Chun, 2007; Shearmur et al., 2007; Pinto et al., 2015) as well as at the level of its national forms and implementations in Netherlands (Langen, 2002), South-West England (Council on Foreign Relations, 2016), Canada (Doloreux, 2006; Doloreux and Melançon, 2008; Melançon and Doloreux, 2011), Norway (Asheim and Isaksen, 2002; Benito et al., 2003; Isaksen, 2009), Finland (Viitanen et al., 2003; Makkonen et al., 2013), France and Denmark (Shearmur et al., 2007), etc. In the most part of the research papers the main emphasis is placed on cluster development in the profile industries such as sea freight, shipping, shipbuilding, offshore production and other related sectors of the economy. Consequently the definition of the "maritime cluster" as the special typological unit in these works is based on the specialization (which implies the geographical position at the coast). But the seaside position itself does not always lead to the maritime productive specialization while it influences the specifics of clusters localized in coastal areas.

3. RESULTS

3.1. Cross-border and Trans-aquatorial Economic Clusters: Classification and Facilities of Development

One of the main issues connected with economic clusters in coastal areas is the problem of their identification and typology based on the main factors, which predetermine the character of interrelation and interactivity between the economic actors inside and outside the cluster localized in coastal area. Two main reasons could be highlighted for the increased possibility for integrations between enterprises. One of them is the increased destiny of the organizational space, the concentration of firms and social institutions in the territory that is caused by thalass-attractiveness and the space configuration within coastal cluster. Another one is presented by the more favorable conditions relatively to non-coastal territories.

Globalization process leads to the intensification of transnational and especially – trans-aquatorial contacts. The term "trans-aquatorial" was proposed by one of the authors of this article in 2008 (Druzhinin, 2008; 2011; 2014) and characterizes the interaction across the water area (or though the water area). In the context of trans-aquatorial interaction possibility the special typological form of trans-aquatorial cluster is to be identified within the category of cross-border cluster.

It should be highlighted that, on the one hand, not all clusters existing in coastal areas are cross-border (including trans-aquatorial) ones. The maritime character of such clusters can be connected with their specialisation (such as coast guard, coastal fisheries, coastal recreation, etc.). On the other hand, trans-aquatorial clusters localized in coastal areas are not always directly connected with the maritime industries. And there are cases when cross-border clusters located in coastal areas can be not trans-aquatorial at the same time because the cross-border interaction takes place through the land border. Also the trans-aquatorial communication, presented by short sea transportation and devoid of cross-border content can exist in coastal area. The given classification can be summarized in the scheme (Figure 1).

3.2. Model of Interaction within Trans-aquatorial Cluster

To identify the specifics of cross-border cauterization the modeling of inter-organizational interaction within cluster could be provided. The model presented is based on the model of the probability of a single interaction within a cluster, developed by one of the authors of this article (Gorochnaya, 2014). In solving this problem we will assume that the set of all organizations of any territory (in this case in coastal area as the geographical and economic space of clustering) is characterized by the total demand of interaction, equal to the sum of needs in interaction of each firm ($q_1 + q_2 + \ldots + q_n$):

$$Q = \sum_{l-n} q \,, \qquad (1)$$

1 Competitiveness Rankings. Available at: http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings.

where Q – is the total regional need for interaction, n – is the number of regional organizations.

Given this situation, a probabilistic model for a single transaction will be as follows:

$$P = \frac{M_R - 1}{M_F + M_R - 1}, \quad (2)$$

where P – is the probability of interaction with the counterparty within the cluster, M_F is the number of interracially (unclustered) firms capable of interaction along with intra-cluster firms, M_R – the number of regional firms capable of interaction (Gorochnaya, 2014).

The selection of the contractor acquires the value of a certain average stochastic value. On this basis, the number of intra-regional interactions will take the product of the probability of a single interaction with a regional partner and the total regional demand in the interactions:

$$E = \frac{M_R - 1}{M_F + M_R - 1} \bullet Q \quad (3)$$

The characteristic feature of cross-border cluster as a special typological form of economic cluster (from the point of view of the composition of its constituent economic actors) is a more complex structure, including actors being under the jurisdiction of different states and, accordingly, under unequal conditions in the economic, legal, socio-cultural space of different national socio-economic systems (Mikhailov and Mikhailova, 2012; Mikhaylov, 2013a; Zimmer, 2014). Thus, from the point of view of each national economy the intra-cluster "field of gravity" occurs with the presence of at least four groups of economic actors:

The national organizations participating in the existing or potential cluster ($M_{Cl.D.}$);
- Domestic enterprises of the territory under consideration (coastal area), not included in existing or emerging cluster ($M_{Ex.D.}$);
- Foreign companies within the cluster ($M_{Cl.F.}$);
- Foreign enterprises of the territory under consideration (or multiple territories that is more typical for cross-border interaction in coastal areas), which do not participate in cluster ($M_{Ex.F.}$).

In this case, a probabilistic model of a single interaction will look like the following:

$$P = \frac{M_{Cl.D.} + M_{Cl.F.} - 1}{M_{Cl.D.} + M_{Cl.F.} + M_{Ex.D.} + M_{Ex.F.}} \quad (4)$$

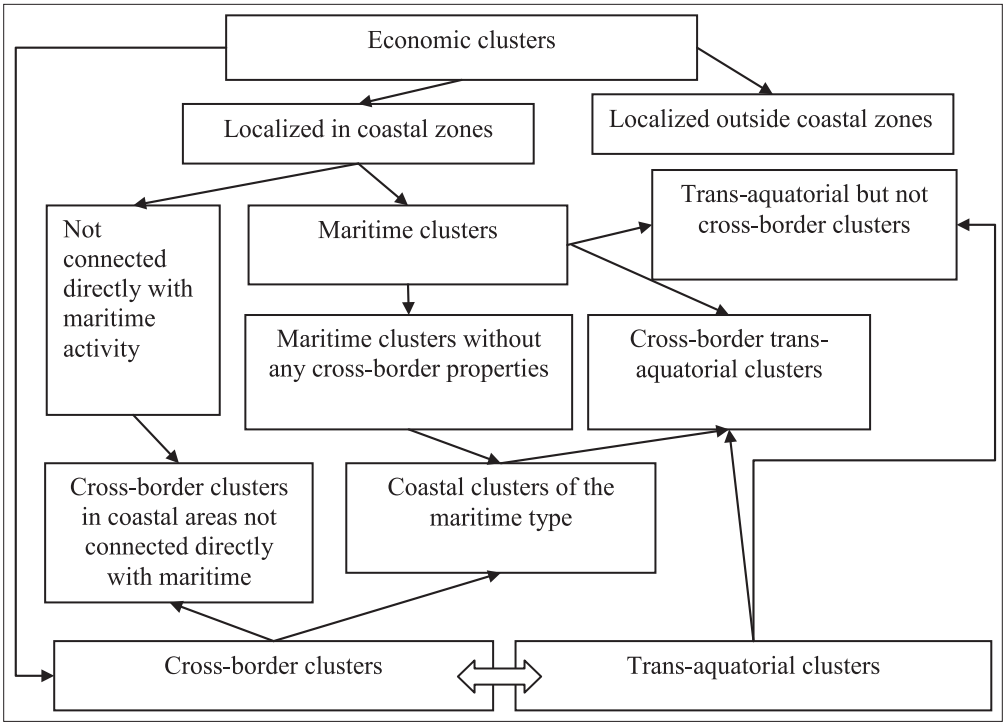
With the adjustments for the various average level of trust between business actors in a particular category, as well as various strap medium of transaction costs, the model takes the following form:

$$P = \frac{\frac{C_{Cl.D.}}{\sqrt[3]{C_{Cl.F.}C_{Ex.D}C_{Ex.F.}}} L_{Cl.D.} M_{Cl.D.} + \frac{C_{Cl.F.}}{\sqrt[3]{C_{Cl.D.}C_{Ex.D}C_{Ex.F.}}} L_{Cl.F.} M_{Cl.F.} - 1}{\frac{C_{Cl.D.}}{\sqrt[3]{C_{Cl.F.}C_{Ex.D}C_{Ex.F.}}} L_{Cl.D.} M_{Cl.D.} + \frac{C_{Cl.F.}}{\sqrt[3]{C_{Cl.D.}C_{Ex.D}C_{Ex.F.}}} L_{Cl.F.} M_{Cl.F.} + \frac{C_{Ex.D.}}{\sqrt[3]{C_{Cl.F.}C_{Cl.D}C_{Ex.F.}}} L_{Ex.D.} M_{Ex.D.} + \frac{C_{Ex.F.}}{\sqrt[3]{C_{Cl.D.}C_{Cl.F.}C_{Ex.D.}}} L_{Ex.F.} M_{Ex.F.}} \quad (5)$$

where C is the amount of transaction costs, L – the average trust level, M – organizational mass (the number of enterprises at the considering territory); specifying *Cl.D.* refers to the value of a each indicator for domestic enterprises included in current or emerging cluster; specifying *Cl.F.* refers to the value of each indicator for foreign enterprises participating in cross-border cluster, the specifying *Ex.D.* and *Ex.F.* refer to the characteristics of domestic and foreign enterprises outside the cluster, but being able to act as potential contractors.

Consequently, the increase in the intensity of intra-cluster communication is primarily determined by the ratio of the average transaction costs and the level of interorganizational trust between these four groups of subjects. The confidence level may be considered in accordance with the provisions identified by Coleman (1990), according to which the minimum threshold level of trust between economic actors is 33%. In the present model, all indicators of trust (L) take the values ≤1, in the case $L < 0.33$ value of the index equals 0. The ratio of these parameters within a cluster may be the ground for the classification. In particular, based on the theoretical work of the previous years (Broek and van den Smulders, 2013; Lundquist and Trippl, 2011; Zimmer, 2014), the following typological invariants cross-border cluster can be highlighted:
- Cross-border cluster with a strong core (predominantly monocentric), focused on the territory of a state with a relatively weak periphery beyond state borders;
- Bi - and polycentric cross-border cluster with strong cores on the territories of two or three or more neighboring states with relatively weak links between them, however, supported by active trade, human and technological exchange;
- Cross-border cluster with the distinct structure of production

Figure 1: Classification scheme of the cross-border clusters in coastal zones



chain, in which production units of added value are located in the territory of different states;

- Relatively homogeneous cross-border cluster with equable allocation of the production units on the territory, regardless of the administrative-territorial boundaries (this type is usually connected with the conditions of negligible ratio of transaction costs of interaction with foreign and domestic partners).

3.3. Market Competition and Infrastructural Conditions of Cooperation

Along with the positions specified above the classification of cross-border clusters may be based on the criterion of the nature of competition within cluster. Competition as an integral attribute of cluster formations may be presented at the international market, as well as at the level of each of the national markets (including the markets within various units of the production chain). In this regard, we should highlight the typological forms of cross-border clusters, such as:

- Cross-border cluster acting on the international market;
- Cross-border cluster with the presence of competition within the manufacturing unit, located in the territory of one of the states, also with enterprises located on the territory of another state, associated with the cluster only through industrial cooperation;
- Cross-border cluster as the system of national formed at the various links of the production chain, in particular, when the national market is supplied semi-finished products or individual parts and components, which are further included in the composition of more complex production.

It is important to note that when the cluster, being localized in one of the adjacent states, represents only a distribution system, it is impossible to identify full-fledged cross-border cluster. The exception is the sale of semi-finished products, or situation, when there is a long-term cooperation of enterprises that results in the gradual formation of additional production units and infrastructure. Otherwise, it is possible to identify the advanced distribution system in a specific national market, but not the real structure of the cluster type.

Trans-aqutorial cluster as the special form of cross-border cluster has some important peculiarities. Internal variables of the trans-aquatorial cluster can be considered by analogy with the model of cross-border cluster given above, however, with some specific features caused by coastal territorial arrangement. The presence of the sea port leads to the effect of "multiple cluster," which is a more complex and multidimensional network of potential and existing relationships between economic actors in different (in some situations - in quite remote) coastal areas. Thus, in comparison with the "continental" type of cross-border cluster, the effect of multidimensional increase of organizational mass of foreign partners takes place in trans-aquatorial cluster through the means of sea trade routes and the access to a larger number of counterparties, which to some extent correlates with continental type of transnational cluster (Mikhailov and Mikhailova, 2012; Mikhaylov, 2013b; 2015). In this context, a key role belongs to specific capabilities and production logistics in functional sea port.

The availability terminals within a certain capacity and also other specifications make sea port available for contacts with the number of potential counterparties capable to form cluster with both local and third-party (relative to potential). In addition, the port may not be the only technical prerequisite for increasing $M_{Cl.F.}$ and $M_{Ex.F.}$, but the existence of a clear strategy, advanced logistics and organizational functionality (designed to increase business contacts between local enterprises and foreign counterparties).

Also it can create the condition to reduce transaction costs and increase the level of trust towards them. Accordingly, trans-aquatorial cluster is characterized by the following features that provide additional capabilities and benefits (Table 1).

Finally, trans-aquatorial cluster is multivariant; it can be defined as a geographically localized group of economic actors, whose integrity and effective communication is ensured by the use of the resource of marine (ocean) waters potential (primarily communication). The infrastructural "core" of trans-aquatorial cluster is the integrable sea port and logistics complexes. It should, thus, be emphasized that in a real situation, coastal areas substantially correspond to the cross-border clusters which gain trans-aquatorial determinants and properties. Also it stimulates the cross-border maritime specialization, enhances the presence of clusters, which can be classified as "marine and coastal."

Intensive navigable waterways and port complexes of the offshore zones have the specific configuration of the space that results in the following typological forms:

- Cross-border trans-aquatorial cluster that functions thanks to both marine and "land" communications (the most typical example is tourist-recreational clusters at the border between Russia and Abkhazia, Poland and Kaliningrad region, fishery cluster at the border between Russia and Northern Norway, etc.);
- Trans-aquatorial cluster with compact localization and/or steady connection between its cores divided by the state (and water) border (like clusters in the Baltic sea region and in Southeast Asia);
- Trans-aquatorial cluster with dispersed localization of its components and features of the network structure: It can be a mono-, bi - and multipolar (clusters of this type are present in coastal areas almost everywhere, and, in the Russia such clusters are now at the initial stage of its development).

Along with this, transequatorial clusters differ significantly in terms of scale (global, macro-regional, regional, local), the number of jurisdictions (from two to several participating countries), the extent (stage) of formation, the dominant industry (from single industry to poly-industrial).

3.4. Empirical Evidence

The role of the "marine factor" in the development of cross-border clusters varies among the regions of the world. For Atlantic Europe the maritime sector located in coastal zones (which includes not only the port-logistics sector and the Maritime industry, but also shipbuilding industry, fishing, aquaculture, mineral extraction, coastal recreational activities, etc.) is of strategic importance. So, according to the European Commission (2009) the value of the products produced by this complex (including Norway) is estimated at 450 billion euros and the value added amounted to 187 billion euros, while it was occupied by about 4.8 million people (European Commission, 2009). Characteristically, three years later (when the economy of Europe as a whole has overcome the consequences of the global financial crisis) employment in the maritime sector already provided 5.4 million jobs and up to 500 billion euros of annual value added (Blue Growth Opportunitie., 2012).

In Asia cross-border trans-aquatorial economic cooperation seems to be implemented initially in the form of "growth triangles." The first appearance of them in the 1970s consolidated some areas in the provinces of Guangdong and Fujian in the PRC, Hong Kong (a British colony until 1997, after special administrative region of the PRC, possessing the widest possible autonomy) and Taiwan (partially recognized state since 1949, its independence is disputed by China). The first experience of creation of the free economic zone, in the mainland part of a large-scale trans-aquatorial area, led to the formation of the largest economic zones "Pearl river Delta," the successful economic development of which was based, primarily, on the potential of the Hong Kong port, contributing to the export of goods made in China to world markets. The backbone of the economy of the area originally was the formation of the textile industry in the Chinese part, which gradually evolved into the largest cross-border cluster, specializing in the production of electronics (Figure 2).

Table 1: Specifics and advantages of trans-aquatorial cluster

Indicator	In the presence of sea port	In the presence of sea port with additional functions	Final result for the cluster self-organization
$M_{Cl.F.}$	Increases compared with cross-border cluster of continental type	Increases multiply according to the peculiar technical and logistic conditions and availabilities of the port	The capacity of cluster self-organization increases due to the presence of potential cluster members abroad
$M_{Ex.F.}$	Increases compared with cross-border cluster of continental type	Increases multiply according to the peculiar technical and logistic conditions and availabilities of the port	Increases due to the presence of potential cluster members abroad
$C_{Cl.F.}$	Depend on the technical conditions of the port and infrastructure	Significantly reduced	The potential of clustering increases significantly, also the territorial structure of the cluster redistributes into equable allocated one
$C_{Ex.F.}$	Depend on the technical conditions of the port and infrastructure	Significantly reduced	Does not significantly affect the potential of clustering
$L_{Cl.F.}$	Slightly increases due to the presence of a critical mass for primary interaction	Increases significantly due to the creation of favorable conditions for economic cooperation	The potential of clustering increases significantly, also the territorial structure of the cluster redistributes into equable allocated one
$L_{Ex.D.}$	Slightly increases due to the presence of a critical mass for primary interaction	Increases significantly due to the creation of favorable conditions for economic cooperation	Does not significantly affect the potential of clustering

Similar specialization is typical for the trans-aquatorial cluster Taiwan – Suzhou Great, whose territory is sometimes referred to other regions of China: Jiangsu province and Shanghai. High-tech industries here also rely on the logistics potential of the Shanghai sea port. The first cluster that included surrounding Singapore, Malaysia and Indonesia was formed in 1989 and 1990-ies. The successful development of the area has allowed the governments of these states in 1994 to expand the area of cooperation and include the following engirdling ring (Figure 3). At the same time, in 1993 trans-aquatorial cluster of Indonesia, Malaysia and Thailand was established due to the governmental position aimed to help economic development of peripheral areas. During the following 20 years of intensive economic development, support measures of the export-oriented industrial policy of South-East Asia have been aimed to help the development of the particular sectors: The electronics sector in Indonesia and Malaysia, biomedical research sector of Singapore and the automotive sector in Thailand, as well as other successful industries.

In relation to modern Russia trans-aquatorial cluster can be viewed as a potential and emerging type of integration between economic actors. Supported by the government, trans-aquatorial cross-border links are represented in the Barents region (based on industrial fisheries), and also in the Baltic region, St. Petersburg and the Leningrad region. Particuliar, but a typical example is oil-trade complex of the Finnish company "Neste oil," which includes oil terminal in Bronka (built in 1999 and has a capacity of 40 thousand cubic meters of petroleum products), and about 70 stations in the North-West macro-region. The oil terminal in the city comes from two major sources: "LUKOIL – North-West" Ltd. which is the leader in the North-West of Russia, a subsidiary of OJSC LUKOIL and wholesale traders. Oil products are delivered from Ukhta, Volgograd, Perm and Nizhny Novgorod.

Trans-aquatorial service clusters with compact localization in the St. Petersburg region are associated with the large shopping complexes – "Prism" (Finland), "Leroy Merlin" (France), IKEA (the Netherlands), "Castorama" (France) and others. In the context of import substitution in Russia in the current conditions there is a change of supplier from the EU on Russian. This process may stretch in time, but now it creates the preconditions for the development of the intra-regional national value chains with the end consumer localized in the largest agglomerations.

The less activity and international interaction demonstrate coastal zones in the South of Russia, although its great potential is determined not only by the capabilities of the Russian-Turkish economic cooperation (Druzhinin, 2014) but also by the prospect of increasing ties with Iran. Egypt, China, and several other States, including within more clearly drawn Trans-Eurasian project "Great silk road."

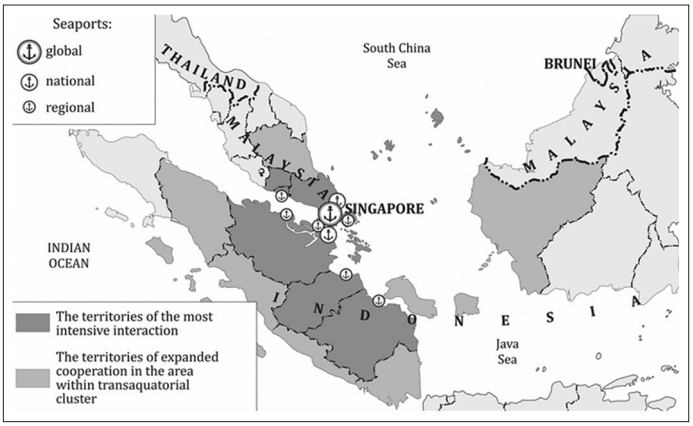
4. CONCLUSION

In spontaneously changing geopolitical and geo-economic architecture of the XXI century, in the transition to a polycentric structure against the background of deepening inter-territorial competition, the role of oceans, coasts will only increase for both Humanity as a whole, and for individual states and their associations. As for the "shift to the sea" in the regional and local scale, the term largely corresponds with the efficiency of economic clustering in coastal areas, and, primarily, with cross-border capacity and trans-aquatorial contacts.

Figure 2: The largest trans-aquatorial clusters in East and South-East Asia

(1) Singapore – Malaysia – Indonesia; (2) The Taiwan – Suzhou Large; (3) Guangdong – Fujian – Hong Kong – Taiwan; (4) Indonesia – Malaysia – Thailand; the map is created with the informational background. Source: Based on Ivanova (2013); Chuan-Kai (2009); Chun (2007) Kuroiwa and Toh (2008)

Figure 3: Trans-aquatorial cluster Singapore – Malaysia – Indonesia



The map is created with the informational background. Source: Based on Ivanova (2013); Chuan-Kai (2009); Chun (2007); Kuroiwa and Toh (2008)

Specific features of the trans-aquatorial cross-border clusters and the presence of a significant number of their varieties are predefined by the conditions of international cooperation in coastal areas, as well as logistical specifics of the port facilities as a key point for economic counterparties belonging to different jurisdictions. In this context trans-aquatorial clusters should be considered as the priority object for the spatial (offshore territorial) economic analysis. The relevance of their identification, observation and cultivation in sustainable development of coastal areas, as well as the building of the multi-vector system of foreign economic interactions is steadily increasing in the world, including EU, Asia regions and Russia.

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REFERENCES

Asheim, B., Isaksen, A. (2002), Regional innovation systems: The integration of local "sticky" and global "ubiquitous" knowledge. Journal of Technology Transfer, 27, 77-86.

Benito, G., Berger, E., de la Forest, M., Shum, J. (2003), A cluster analysis of the maritime sector in Norway. International Journal of Transport Management, 1, 203-215.

Bezrukov, L.A. (2008), Continental-Oceanic Dichotomy in the International and Regional Development. Novosibirsk: Academic Publishing House "Geo".

Blue Growth Opportunities for Marine and Maritime Sustainable Growth. (2012), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Luxembourg: Publications Office of the European Union.

Bosworth, A. (1996), The world-city system by the year 2000. Journal of Developing Societies, 12(1), 52-67.

Broek, J., van den Smulders, H. (2013), The Evolution of a Cross-Border Regional Innovation System: An Institutional Perspective. Conference Paper RSA European Conference, Tampere.

Cartier, C. (1999), Cosmopolitics and the maritime world city. The Geographical Review, 89(2), 278-289.

Chuan-Kai, L. (2009), How does a cluster relocate across the border? The case of information technology cluster in the Taiwan-Suzhou region. Technological Forecasting and Social Change, 76(3), 371-381.

Chun, Y. (2007), Divergent hybrid capitalisms in China: Hong Kong and Taiwanese electronics clusters in Dongguan. Economic Geography, 83(4), 395-420.

Coleman, J.S. (1990), Foundations of Social Theory. Cambridge, MA: Belknap Press.

Council on Foreign Relations. (2016), Global Conflict Tracker. Available from: http://www.cfr.org/global/global-conflict-tracker/p32137#!/?marker=32. [Last accessed on 2015 Jun 06].

Doloreux, D. (2006), Understanding regional innovation in the maritime industry: An empirical analysis. International Journal of Innovation and Technology Management, 3, 189-207.

Doloreux, D., Melançon, Y. (2008), On the dynamics of innovation in Quebec's coastal maritime industry. Technovation, 28, 231-243.

Druzhinin, A.G. (2008), The south of Russia: The priorities of integration in the space of a large black sea coast. Scientific Thought of Caucasus, 3, 23-30.

Druzhinin, A.G. (2011), Thalass-Attractiveness and Cross-Boundary Socio-Economic Interaction in the Context of Globalisation: The Specificity of the Wider Black Sea. Proceedings of the International Scientific Conference the Black Sea Region in XXI Century: Socio-Economic Development and Interregional Interaction in the Context of Globalization (Rostov-on-Don, 15-18 May 2011). Moscow: Publishing House "University Book". p74-82.

Druzhinin, A.G. (2014), Russian-Turkish interaction in contemporary geostrategic context of the black sea: Factors, trends, problems, prospects. South-Russian forum: Economics, Sociology, Political Science, Socio-Economic Geography, 2(9), 3-12.

European Commission. (2009), The Role of Maritime Clusters to Enhance the Strength and Development of Maritime Sectors. Available from: http://www.ec.europa.eu/maritimeaffairs/pdf/clusters.

Gorochnaya, V.V. (2014), Development of Economic Clusters as a Self-Organizing Process within Regional Economy. Rostov-on-Don: SFU.

Isaksen, A. (2009), Innovation dynamics of global competitive regional clusters: The case of the Norwegian centres of expertise. Regional Studies, 43, 1155-1166.

Ivanova, I.S. (2013), The straits of Malacca: The formation of international economic region. South-East Asia: Urgent Problems of Development, 20, 76-91.

Kuroiwa, I., Toh, M.H. (2008), Production Networks and Industrial Clusters: Integrating Economies in Southeast Asia. Singapore: Institute of Southeast Asian Studies.

Langen, P.W. (2002), Clustering and performance: The case of maritime clustering in the Netherlands. Maritime Policy Management, 29, 209-221.

Lundquist, K.J., Trippl, M. (2011), Distance, proximity and types of cross-border innovation systems: A conceptual analysis. Regional Studies, 47(3), 1-11.

Makkonen, T., Inkinen, T., Saarni, J. (2013), Innovation types in the Finnish maritime cluster. WMU Journal of Maritime Affairs, 12, 1-15.

Melançon, Y., Doloreux, D. (2011), Developing a knowledge infrastructure to foster regional innovation in the periphery: A study from Quebec's coastal region in Canada. Regional Studies, 47(9), 1555-1572.

Mikhailov, A.S., Mikhailova, A.A. (2012), Cross-country cluster interactions: The theory of the issue. Region of Cooperation, 1(56), 52-87.

Mikhaylov, A.S. (2013a), Features of the triple helix model in cross-border clusters. World Applied Science Journal, 21(12), 1734-1738.

Mikhaylov, A.S. (2013b), The collaboration system of actors in international cluster. Problems of Modern Economy, 2(46), 95-97.

Mikhaylov, A.S. (2015), Conceptualizing international cluster. Mediterranean Journal of Social Sciences, 6(3), 11-18.

Notteboom, T., Rodrigue, J.P. (2005), Port regionalization: Towards a new phase in port development. Maritime Policy and Management, 32(3), 297-313.

Pak, A., Majd, F. (2011), Integrated coastal management plan in free trade zones, a case study. Ocean and Coastal Management, 54(2), 129-136.

Pinto, H., Cruz, A.R., Combe, C. (2015), Cooperation and the emergence of maritime clusters in the Atlantic: Analysis and implications of innovation and human capital for blue growth. Marine Policy, 57, 167-177.

Porter, M. (1990), Competitive Advantage of Nations. New York: Free Press.

Serra, P., Vera, A., Tulla, A.F., Salvati, L. (2014), Beyond urban-rural dichotomy: Exploring socioeconomic and land-use processes of change in Spain (1991-2011). Applied Geography, 55, 87-95.

Shearmur, R., Chenard, P., Doloreux, D. (2007), La création et le développement de clusters maritimes au Canada et en Europe. Revue D'économie Régionale et Urbain, 3, 365-390.

Verhetsel, A., Sel, S. (2009), World maritime cities: From which cities do container shipping companies make decisions? Transport Policy, 16(5), 240-250.

Viitanen, M., Karvonen, T., Vaiste, J., Hernesniemi, H. (2003), The Finnish Maritime Cluster. Helsinki: Tekes.

Zimmer, S. (2014), Cross-Border Clusters - Opportunity or Competitive Threat? Paper Presented at the Uddevalla Symposium, June, 2014. Available from: https://www.academia.edu/12022394/Cross-border_clusters_Opportunity_or_competitive_threat.