This article defines coastal zones as a priority subject of studies in social geography and interprets coastalisation of population and economy as a key indicator of the development of a coastal zone. The author stresses the inverted coastalisation in Russia at the macro- and meso-levels and identifies its causes. The article defines the coastal zone as a full-scale, continuum-discrete phenomenon with clear cross-border characteristics and increased potential for cluster formation in the economy. Marine cross-border clusters are identified as independent typological units. Characteristics and conditions for their formation and development are described in view of contemporary geoeconomic trends. The author examines the conditions and prospects for the formation of marine cross-border clusters in the key segments of Russia’s coastal zone.

Key words: coastal zone, human geography, Russia

Introduction

Boasting stretched maritime borders and vast coastal areas and having stable geopolitical and geoeconomic interests, Russia has been one of the leading sea powers over the last three centuries. Recognising the significance of the ‘sea factor’ in the country’s development is implanted in the research tradition [1—6] and immanent in the national geographical thought. Russian geography promotes the ideas of the mixed land/water nature of the geography of the World Ocean [7], land/sea contact zones [8], water/land area systems [9], and ‘coastal regions’ [10—13] and their environmental and socioeconomic particularities.
In the geoeconomic context of the late 20th/early 21st century, the effect of the World Ocean factor on the socioeconomic development is increasing dramatically, being accompanied by the ‘gravitation’ of foreign trade, transport and logistics, infrastructure, and innovative potential of countries and their regions towards coastal areas [14—17]. The coastalisation trend [18] affects the settlement system. According to [19], 37% of the world’s population live within 100 km and 50% within 200 km of the coast. In this context, the problem of coastal zones (CZ), including social geographical aspects of their conceptualisation, identification, and delimitation, is becoming increasingly relevant [20; 21], which holds true for modern Russia.

Coastal zone conceptualisation:
Priority of the social science approach

According to the definition of the term ‘zone’ established in Russian geographical science, it is ‘a territory characterised by the presence and intensity of a phenomenon’ [22, p. 48] or ‘a type of geographical taxonomic areas’ [23]. Therefore, such spatial objects are identified on the basis of two considerations. Firstly, in the zones recognised as coastal, the effect of the ‘sea factor’ is not only present (moreover, it is universal, being directly or indirectly projected on all, including continental, territories) but also accompanied by certain social and geographical effects. The tendency towards their crystallisation and conceptualisation, observed in the process of isolation of spatial objects, is manifested in a combination of related but disparate terminological structures actively used in Russian scientific literature. These are ‘littoral zone’ [24; 25], ‘coastal zone’ [26], ‘coastal territory’ [10; 11], ‘sea coast’ [27], etc. Whereas the term ‘littoral zone’ has a physiographical meaning and it is often used in publications on geology, geomorphology, and littoral studies [28], the phrases ‘littoral zone’ and ‘coastal zone’ are often used in either general geographical (socio-natural and natural economic) or socio-geographical contexts [26]. These terms are often synonymous, used to designate either the whole land/sea contact zone [10; 29] or its territorial component [30] depending on the context. This situation is virtually inevitable due to the focus on a complicated and only partly and superficially understood geographical phenomenon. However, it stresses the need for systematising the terminology and treating the coastal zone as a key terminological structure capable of isolating and designating the socio-geographical taxa within the wide range of water and sea area phenomena.

When stressing the epistemological potential of the ‘coastal zone’ category and describing its content, it is important to take into consideration a fact that activities aimed at developing the World Ocean’s resource potential are concentrated primarily within seacoasts — territories bordering on the sea [31—33]. CZs comprise not only the land (including ‘a part of the land and a part of the sea, closely and immediately interacting’ [10]) but also the
water area, since maritime spaces dividing coastal territories also create grounds for integration. However, their ‘coastal nature’ and corresponding zonal socioeconomic effects are a product not of the sea (its presence and proximity) or the functioning of the ‘land/sea’ system (in its physiographical aspect), but of the Society, its geoeconomy, geopolitics, and the general architecture of its spatial organisation. Therefore, not any coast can be considered an established coastal zone. The latter has to be settled in a particular manner and developed economically through involvement into specific societal and geographical ties and processes.

Stressing the socio-geographical determination and characteristics of CZs, one can quote N. N. Baransky, who believed that it was important to take into account the geographical factor ‘in view of the state of technology, relations of production, and the general social and historical situation in the country at the current stage of development’ [34, p. 24]. The methodological framework for a comprehensive economic and geographical analysis of CZs (where economic factors play the crucial role) is traditional for Russian science [35—37]. Although supplemented by the ecosystem [38] and geocultural [39] approaches, it retains its relevance and popularity.

However, the geographical factor (according to V. A. Anuchin), ‘determines the conditions of social development without being its cause’ [40, p. 78]. The area of ‘land/sea’ contact and, especially, the seacoast are the site of CZ development, its initial geographical substratum, and an attractor of socioeconomic and other effects immanent in it. Coastal zones and specific trends in their development can be identified in comparison with similar processes in the regions and countries ‘accommodating’ coastal zones. In this case, the ‘coastal factor’ is mediated by relations regarding the sea, seacoasts, and the usage of their settlement and military and strategic potential, which are established by human beings and territorial communities in their various economic, political, cultural, and other spatially organised manifestations. Therefore, any coastal zone is a primarily socio-geographical phenomenon — a combination of territorially focused economic, social, cultural, and political programmes, relations, institutions, and images [42] embodied in the natural and economic, economic and demographical, social and environmental, and settlement context of the ‘land/sea’ contact zone. It is also important to stress that coastal zones of any scale and development level attain its socio-geographical diversity in the vicinity of the sea. Thus, the attribute ‘coastal’ used to designate relevant taxa 1 is preferable to ‘littoral’, which is stronger associated with water bodies. In view of the above, the term ‘zone’ should be used exclusively in combination with the word ‘coastal’. A consistent use of this approach makes it possible to overcome terminological confusion, to emphasise the socio-geographical component of the ‘coastal’ problems and to give the notion of the ‘coastal zone’ a certain place in the system of scientific categories oriented at identifying and delimiting land/sea structures.

1 These taxa are traditionally considered as a territory, i.e. part of land [22; 23], which is reasonable even in view of the focus on ‘maritime’ problems.
Coastalisation in identifying coastal zones: The universal and the specific in the social and geographical context of Russia

In terms of spatial configuration, a coastal zone is an area characterised by an increased density of population, settlements, and economic activity. Numerous circumstances should be taken into account — the presence of a seacoast, access of regions and municipalities to the sea, the presence and development level of maritime industry facilities, and localisation and configuration of group systems of settlements. An unconditional but important indicator of a CZ (see [33; 42]) is coastalisation — a characteristic concentration of economic and demographic potential associated with the maritime factor of social and geographical changes.

Russia borders 3 oceans and 13 seas. The length of its maritime borders is over 46 thousand kilometres. The area of the country’s continental shelf reaches 4 million km² and that of the exclusive economic zone — 8.5 million km² [43]. These circumstances create grounds for the massive presence of CZs in the social and geographical context of Russia. As of 2013, 23 out of 85 regions and 166 out of 2 358 municipalities (493 municipalities are situated in coastal regions) have an outlet to the sea. Coastal municipalities account for 3 840 984 km² of the country’s territory (22.4% of the country’s territory) and 16 875 thousand residents (11.5% of the country’s total demographic potential). 13.3 million people live in 80 coastal towns, 13 of them being capitals of regions. How did the marine factor affect the formation of socio-geographical architectonics of Russia? To what degree can traditional views on the economic and demographical attractiveness of coasts — for instance, statements that the density of coastal population is 2.5 times the average global density [44, p. 596] — be applied to the actual situation on the Russian coasts?

One can say at once that the sea factor is rather pronounced in Russia. However, the process of its realization was rather fragmentary and selective. The coastalisation of Russian society is not manifested clearly. It depends on the regional and local context. Moreover, such a crucial indicator as population density makes it possible to speak of *inversed coastalisation*, observed primarily in the Asian part of the country (table 1).

Table 1

<table>
<thead>
<tr>
<th>Territory</th>
<th>All Russian regions</th>
<th>Coastal regions</th>
<th>Coastal municipalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>European part</td>
<td>26.3</td>
<td>18.3</td>
<td>26.2</td>
</tr>
<tr>
<td>Asian part</td>
<td>2.99</td>
<td>0.9</td>
<td>0.74</td>
</tr>
<tr>
<td>Russia</td>
<td>8.55</td>
<td>2.8</td>
<td>4.39</td>
</tr>
</tbody>
</table>

*Source: Rosstat data.*

The fundamental cause of this situation is the general historical configuration of Russia’s territorial socioeconomic system, traditionally termed as ‘continentality’ [3; 45]. However, this inversion is not universal. For instance, the population density in municipalities having an outlet to the sea is 1.6 times the regional average in the Primorsky and Krasnodar regions and 1.34 times in the Leningrad region. The inversion is associated with the post-Soviet redistribution of demographic potential towards coastal regions (in 1989—2015, their contribution to the total population increased from 23.9 to 24.2%).

After the transformational ‘collapse’ of the 1990s, the economic potential of coasts has been showing exceptional growth rates. The most remarkable is an increase of the coastal region’s contribution to the total national GRP. In terms of certain characteristics — the proximity of major centres to the sea, the presence of maritime industry components in the economy, the localisation of major seaports, etc. — these regions can be considered *coastalised* (table 2).

**Table 2**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltic macrozone</td>
<td>45.99</td>
<td>46.39</td>
<td>57.88</td>
<td>64.19</td>
</tr>
<tr>
<td>Saint Petersburg</td>
<td>33.38</td>
<td>32.98</td>
<td>41.40</td>
<td>46.22</td>
</tr>
<tr>
<td>Leningrad region</td>
<td>8.88</td>
<td>9.46</td>
<td>11.19</td>
<td>12.83</td>
</tr>
<tr>
<td>Kaliningrad region</td>
<td>3.73</td>
<td>3.95</td>
<td>5.29</td>
<td>5.14</td>
</tr>
<tr>
<td>Barents-White Sea macrozone</td>
<td>20.33</td>
<td>19.30</td>
<td>14.98</td>
<td>15.18</td>
</tr>
<tr>
<td>Murmansk region</td>
<td>10.20</td>
<td>9.24</td>
<td>6.29</td>
<td>5.69</td>
</tr>
<tr>
<td>Arkhangelsk region (with Nenets autonomous region)</td>
<td>10.13</td>
<td>10.06</td>
<td>8.69</td>
<td>9.49</td>
</tr>
<tr>
<td>Azov-Black Sea macrozone</td>
<td>40.67</td>
<td>38.80</td>
<td>40.35</td>
<td>47.05</td>
</tr>
<tr>
<td>Krasnodar region</td>
<td>21.96</td>
<td>23.64</td>
<td>23.56</td>
<td>29.95</td>
</tr>
<tr>
<td>Rostov region</td>
<td>18.71</td>
<td>15.16</td>
<td>16.79</td>
<td>17.10</td>
</tr>
<tr>
<td>Caspian macrozone</td>
<td>7.03</td>
<td>8.56</td>
<td>10.44</td>
<td>12.90</td>
</tr>
<tr>
<td>Astrakhan region</td>
<td>4.08</td>
<td>5.16</td>
<td>4.28</td>
<td>4.95</td>
</tr>
<tr>
<td>Republic of Dagestan</td>
<td>2.95</td>
<td>3.40</td>
<td>6.16</td>
<td>7.95</td>
</tr>
<tr>
<td>Pacific megazone</td>
<td>25.83</td>
<td>21.49</td>
<td>23.49</td>
<td>28.08</td>
</tr>
<tr>
<td>Chukotka autonomous regions</td>
<td>0.96</td>
<td>0.64</td>
<td>0.89</td>
<td>0.87</td>
</tr>
<tr>
<td>Magadan region</td>
<td>2.40</td>
<td>2.02</td>
<td>1.22</td>
<td>1.64</td>
</tr>
<tr>
<td>Kamchatka region</td>
<td>3.85</td>
<td>2.85</td>
<td>2.28</td>
<td>2.44</td>
</tr>
<tr>
<td>Primorsky region</td>
<td>13.70</td>
<td>10.29</td>
<td>9.31</td>
<td>10.66</td>
</tr>
<tr>
<td>Sakhalin region</td>
<td>4.92</td>
<td>5.69</td>
<td>9.79</td>
<td>12.47</td>
</tr>
<tr>
<td><strong>Total for 15 regions</strong>*</td>
<td>139.85</td>
<td>134.54</td>
<td>147.24</td>
<td>167.40</td>
</tr>
</tbody>
</table>

*Source: Rosstat data.*

* This figure includes the Republic of Crimea and Sebastopol incorporated in the Russian Federation in March 2014.
Since 2000, the total contribution of coastalised regions to Russia’s GRP has increased from 134.54 to 167.40 ‰. Russia’s Baltic regions — primarily, Saint Petersburg — accounted for most of this increase.

The traditional combination of multi-aspect manifestations of coastalisation and its inversion necessitates interpreting CZs as phenomena that are not only *polyscale* due to having both a national/regional and a local dimension but also *continuum-discrete* in their economic, infrastructural, transport, and other aspects. The stretch of a CZ depends on a combination of natural and socioeconomic factors. The natural factors include land configuration, orography, depths of river mouths, etc. The socioeconomic factors are the presence of maritime industry components, the positioning of coastal territories in the markets of tourist, recreational, and transport services, the level of infrastructure development, and the development of settlement systems. The perception of a CZ’s stretch ranges from 50 to 200 km [7; 9; 45]. In Russia, CZs traditionally ‘cling’ to the coast. Exceptions are the exclave Kaliningrad region, part of steppe-dominated Crimea and a number of urbanised areas situated within the key ‘corridors’ of geoeconomic communication shaped by major cities [46] (Saint Petersburg, Rostov-on-Don, Krasnodar, Vladivostok, Astrakhan, Murmansk, and Arkhangelsk). At the same time, leading seaports — for instance, Ust-Luga and Murmansk handing coal from the Kuznetsk Basin — have vast, thousands of kilometres wide, hinterlands.

As a result, the coastal zone does not only comprise numerous economic centres and sub-centres but it is also situated in close proximity to the land-sea interface. The contribution of CZs to the structure of coastal regions (and municipalities) is different. This complicates the delimitation and parameterisation of CZs only as a first approximation of the ‘coastal region — coastal municipality’ matrix. Moreover, CZs are rather *dynamic* and thus they can rapidly change their spatial configuration in their interaction with the maritime industry. A good example is the site of the Ust-Luga port construction, where the CZ — once a narrow strip framing the Baltic coast — expanded to include the Kingisepp district of the Leningrad region [47]. Coastal zones transcend administrative divisions, thus, definitions of the coastal territory should be regularly revised and adjusted.

**Transboundary and trans-sea economic clustering:**

The case of coastal zones

Crisscrossed with navigation routes and framed by port facilities, seas are uniquely configured spaces comprising a set of unequally distant borders. In this situation, the emergence and development of CZs is closely associated with multi-aspect transboundary relations, contacts, and ties, i.e. different transboundary effects. Their visible manifestations correspond to clustering in CZ economies. The ‘contact’ potential of seas creates a trans-sea context, which makes it possible to identify not only trans-sea transboundary clusters immanent in CZs but also a combination of typologically invariant forms of clustering localised in coastal zones (fig.).

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2 This notion designating interactions ‘through the sea’ and ‘using the sea’ has been developed by the author since 2008, primarily in the context of the Black Sea [42; 48].
The trans-sea cluster is a territorially localised group of economic agents, whose cohesion and effective interaction is accounted for by the resource — primarily, communication — potential of the sea/ocean. The infrastructure core of a trans-sea cluster is port and logistics facilities integrated by maritime transport. It is worth stressing that, in reality, trans-sea often means transboundary and transboundary clusters usually assume trans-sea features.

It is important to understand that, in modern Russia — unlike, for instance, the EU states and a number of Pacific countries — a trans-sea cluster is an emerging type of economic agent integration. The most advanced clustering (although it is rather fragmentary at initial stages) is observed in the North-West of Russia’s European coast. Trans-sea interaction in southern CZs is much less pronounced. However, it has a significant potential. Priorities include using the potential of trans-sea clustering in developing maritime industries of Crimea (recreation, shipbuilding and ship maintenance, aquaculture and fish processing) and Russia’s Black Sea region in general. Ample trans-sea clustering opportunities are associated with the Arctic area of Russia’s geoeconomic strategy. Trans-sea interactions play an important role in increasing the stability of the economy of Russia’s Kaliningrad exclave. Russia’s geopolitical ‘turn’ does not cancel out the importance of prolonging

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3 Seaports create the ‘scattered cluster’ effect associated with a more complicated and multi-dimensional network of potential and actual connections between economic agents located in different and sometimes rather remote coastal areas.
and developing trans-sea transboundary contacts. Considerable opportunities are associated with the Baltic metaregion. Eurasian economic integration creates prerequisites for clustering in the Caspian coastal zone.

Conclusion

Recently observed changes in the geopolitical situation and deteriorating geoeconomic circumstances affect Russia in general, most of its regions, and the largest export-targeted business structures. This situation is fraught with the risk of socioeconomic stagnation of coastal territories, further 'stratification' in terms of budget, investment, infrastructure, and other opportunities, and environmental and social degradation. This necessitates full employment of land and sea resources of national CZs, their integration into global economic networks and cycles (including formulating new geoeconomic priorities and developing production targeted at global markets), stable sociodemographic reproduction, and infrastructure improvement. These objectives are closely connected with economic clustering based on transboundary (trans-sea) economic integration. The role of the World Ocean and its coast will be increasing strategically, turning coastal zones in a priority object of socio-geographical analysis. This holds true for both Russia and the humanity in general.

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References

5. Teoreticheskie voprosy fizicheskoy i ekonomicheskoy geografiy Mirovogo okeana [Theoretical questions of physical and economic geography of the oceans], 1979, Leningrad, 136 p.

9. Pokshishevskiy, V. V. 1979, Geografiya rasseleniya na beregakh Mirovogo okeana [Geography settlement on the shores of the oceans], Leningrad, 342 p.


27. Arzamastsev, I. S. 2009, Prirodopol'zovanie v pribrezhnykh zonakh: osnovnye ponyatiya, zonirowanie i problemy upravleniya [Nature in coastal areas: basic concepts, zoning and management problems], Tamozhennaya politika Rossii na Dal'nem Vostoke, no. 4, p. 76—89.


34. Baranskiy, N. N. 1929, Kratkiy kurs ekonomicheskoy geografii [A short course of economic geography], Moscow.


39. Kolosovskiy, A. M. 2010, K voprosu ob istochnikakh i mekhanizmakah samorazvitiya primorskikh territoriy [To a question about the sources and mechanisms of self-development of coastal areas], Vestnik Rossisskogo gosudarstvennogo universiteta im. I. Kanta [Vestnik of Immanuel Kant State University of Russia], no. 3, p. 31—42.


41. Druzhinin, A. G. 2011, Ot gumanizatsii k neogumanizatsii rossiyskoy sotsial’no-ekonomicheskoy geografii: trendy, problemy, prioritytes [From the humanization to a neo-humanization of Russian socioeconomic geography: trends, challenges, priorities], Yuzhno-rossiyskij forum: ekonomika, sotsiologiya, politologiya, sotsial’no-ekonomicheskaya geografiya, no. 1, p. 34—51.


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