

Strategic opportunities for economic development of the Baltic Sea coastal zones and sea industrial and port complexes

Gogoberidze, Geroge G.; Mamaeva, Maria A.

Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:

Gogoberidze, G. G., & Mamaeva, M. A. (2012). Strategic opportunities for economic development of the Baltic Sea coastal zones and sea industrial and port complexes. *Baltic Region*, 1, 72-80. <https://doi.org/10.5922/2079-8555-2012-1-9>

Nutzungsbedingungen:

Dieser Text wird unter einer CC BY-NC-ND Lizenz (Namensnennung-Nicht-kommerziell-Keine Bearbeitung) zur Verfügung gestellt. Nähere Auskünfte zu den CC-Lizenzen finden Sie hier:

<https://creativecommons.org/licenses/by-nc-nd/4.0/deed.de>

Terms of use:

This document is made available under a CC BY-NC-ND Licence (Attribution-Non Commercial-NoDerivatives). For more information see:

<https://creativecommons.org/licenses/by-nc-nd/4.0>

REGIONAL DEVELOPMENT

STRATEGIC OPPORTUNITIES FOR ECONOMIC DEVELOPMENT OF THE BALTIC SEA COASTAL ZONES AND SEA INDUSTRIAL AND PORT COMPLEXES

G. G. Gogoberidze
*M. A. Mamaeva**



Nowadays, one of the principal dimensions in attraction of the world economy structures is coastal territories as spaces where marine potential of a state is most pronounced. In this respect, it is vital to set the priorities of development of coastal zones taking into account the changes in the strategic situation in order to maintain the components of marine potential of the Russian Federation at the level of its national interests.

The article aims to develop an indicator system of assessment of coastal zone potential, and sea industrial and port facilities in order to identify the characteristic and strategic capacities of the economic development of these territories in the complex approach. The research methodology is based on the assessment of marine potential of coastal territories as an indicator of the efficacy of its marine economic complex development with using the indicator methods as a multi-factor and multi-level spatial system. The proposed system is applied to a complex analysis of coastal territories of the Russian Baltic, the estimation of a socio-economic factor of coastal zone marine potential, as well as recommendations for long-term planning of the economic development of Russia's coastal zones of the Baltic Sea and the organisation of marine activities. This methodology can help to identify a role of coastal territories in the economy and reflect perspectives and directions of strategic development of coastal zones, and sea industrial and port facilities of the Russian Federation.

Key words: economic development strategy, maritime region, sea industrial and port complex, sea potential

In the modern context, coastal areas are viewed as territories that can, on the one hand, demonstrate their geostrategic importance and potential to the fullest extent, and, on the other hand, generate ob-

* Russian State Hydrometeorological University
98 Malookhtinsky pr., St. Petersburg
195196, Russia

Received 17 September 2011

doi: 10.5922/2079-8555-2012-1-9

vious contradictions of social and economic development. Proceeding from the concept of long-term planning of development of coastal areas, and their sea industrial and port complexes, as well as taking into account the complexity of processes related to these territories, we identify a need for a system of assessment of their sea potential with application of indicator methods for the analysis and justification of the region development strategy [5].

In view of *the Sea Doctrine of the Russian Federation for the period until 2020* approved by the President of the Russian Federation on July 27, 2001 [7] and the importance of impact factors for the coastal area sea potential due to its dynamic nature, the following complex system of influence factors on the sea potential of coastal territories can be introduced [6]:

- socio-economic influence factor;
- political and geographic influence factor;
- ecological influence factor;
- military and strategic influence factor.

At a regional spatial level, the coastal territory is a maritime region which constitutes a state formation or a maritime entity of state formations at the federal level. The borders of the maritime territorial entities are represented by state borders or administrative borders of maritime entities of state formations at the federal level [6]. Given approach is based on the fact that administrative entities of some countries (mainly of a federal type) can have quite long coastlines, border to waters of several seas and oceans, influence the world economy and consist of administrative entities with various autonomy ranges that can be viewed as independent maritime regions. A country in the Baltic Sea region that matches the above-mentioned definition is the Russian Federation with St. Petersburg, the Leningrad and Kaliningrad regions as maritime entities. There are other maritime countries that have economic and political power and a long coastline; however, it is not viable to segregate some of their administrative entities as maritime regions, as soon as maritime regions comprise of maritime territorial administrative entities. However, the detached regions of such countries differ a lot in their geographical location and attraction, sea potential and its constituents. The regions of the Baltic Sea are: [3]:

- Finland (the South and Bothnian Bay regions);
- Sweden (the Bothnian Bay and South regions);
- Denmark (the Baltic and North Sea regions);
- Germany (the Baltic and North Sea regions).

As a result, we can distinguish 13 maritime regions of the Baltic Sea: Estonia, Latvia, Lithuania, Poland, the Baltic region of Germany, the Baltic region of Denmark, the South and Bothnian Bay regions of Sweden, the South and Bothnian Bay regions of Finland, the Leningrad region and St. Petersburg.

At this stage we are going to consider a socio-economic impact on the potential of a maritime region. The assessment of the impact has been carried out with the help of indicator methodology [2].

The socio-economic factor of maritime region sea potential envisages 16 indicators:

- GDP (GRP) (is defined as the market value of all final goods and services produced within a maritime region in a given period of time);

- foreign economic activity indicator (is defined as the maritime region export and import value against the number of population);
- GDP (GRP) growth indicator (is defined as the value against the shifts in maritime region GDP);
- industrial production growth indicator (is defined as the value of index change of maritime region industrial production);
- investment volume indicator (is defined as specific quantity of foreign investment into the region with respect to the number of residents and as the volume of the region economic entities foreign investment);
- natural-resources potential indicator (is defined as the volume and relevance of natural resources and resource potential of a maritime region);
- infrastructure indicator (is defined as the level of development of automotive and railway infrastructure of a maritime region);
- fleet indicator (is defined as the total shipping of cargo fleet registered with economic entities of a maritime region);
- port activity indicator (is defined as the cargo-turnover of maritime region port economy);
- biological resources harvesting indicator (is defined as the value of catching of marine species by the economic entities of a maritime region);
- recreational weight indicator (is defined as the number of tourists and profit volume of maritime region tourism industry);
- maritime population density indicator (is defined as the number of indicators — population number of a maritime region, weighted average of their remoteness from the coastline, the number of large settlements in a maritime region, the length of the coastline and the total area of a maritime region [4]);
- human development indicator (is defined as population literacy, life expectancy and wage levels in the region) [16]);
- Gini indicator (is defined as the value of the Gini index);
- population replacement level indicator (is defined as the value of mortality and birth rates of a maritime region);
- unemployment indicator (is defined as the value of unemployment level of a maritime region).

Some assumptions can be made to the formulation of the stated indicator subsystems and indicator calculating methodology [2; 3].

1. Negative use of impulse response for each parameter of calculating integrated indices due to its ambiguity and divisiveness when evaluating significance of each indicator.

2. The indicators should possess the value within the limits of -1 up to $+1$. At that, indicator value -1 emphasizes the highly negative and indicator value $+1$ emphasizes the maximum positive levels of impact.

The figure below shows the territorial allocation of evaluation of social and economic impact on the marine potential of the maritime regions of the Baltic Sea, which is derived with the application of the indicator methodology. The calculations are based on official estimates of statistical reporting on Russia and the coastal states of the Baltic Sea, the Federal State Statistics Service of the Russian Federation, field-specific ministries of the Russian

Federation, international statistics services, and statistics databases of UN, UNESCO, Eurostat, World Bank and other databases including statistics agencies of the Baltic Sea region countries.



Figure: Values of the socio-economic factor of marine potential for the coastal regions of the Baltic Sea

When analysing the components of the social and economic factor, the following key issues are to be emphasized:

According to the level of specific GDP value (GRP with the regions and entities of the Baltic Sea) there are maritime regions of the “old Europe”, where specific GRP is more than 20 thousand dollars per person; GDP (GRP) in the Baltic states, Poland and some subordinate entities of the Russian Federation is lower — the lowest is less than 10 thousand dollars per person (in the Kaliningrad and Leningrad regions); specific GRP in the entities of the Russian sector of the Baltic Sea (in St. Petersburg only) is a little over 11 thousand dollars per person.

According to GDP growth (GRP with the regions and entities of the Baltic Sea), the leaders are Poland and St. Petersburg, which have positive GDP (GRP) index. The economies of other countries of the region are depressed. All the Baltic States have GRP index less than —10%, which is obvious for the post-crisis conditions and becomes apparent in these Baltic Sea region countries in particular.

At the same time the level of industrial production is negative in all countries of the Baltic region, although Poland has zero indices. The lowest values are in the Baltic States and St. Petersburg — less than —20%, which is interesting along with the positive values of GRP in St. Petersburg. The Leningrad region ranks second in the region with industrial production index (a little less than —5%), while the Kaliningrad region values are less than —10%.

Differently-directed vectors of variability of GRP indices and industrial production in St. Petersburg stem out of the fact that St. Petersburg, as well as Moscow, is a huge economic, research and cultural centre, and the largest sea industrial and port complex in the Baltic Sea. It ranks second in the list of economically advanced entities of the Russian Federation and constitutes one out of two focuses of the Russian European territory, with Moscow being the other. The unique geographical location (the vicinity of the most advanced Russian regions, on the one hand, and the EU countries, on the other hand) enabled St. Petersburg to become the centre of Russian and international transportation, including sea carriage, the amount of which is constantly growing despite the world economic crisis. However, the core St. Petersburg industries — machinery, metalworking and food industry (70% of industrial production volume) — have gone into the deepest recession.

The specific values of foreign economic activities are close to the common factors of specific GDP (GRP). In the regions of Finland, Germany and Denmark, the given value is more than 20 thousand dollars per person (except for the Bothnian Bay region of Finland), whereas in the backward maritime regions this is less than 20 thousand dollars (except for Estonia with 22 thousand dollars per person). The lowest values are in the Kaliningrad region and St. Petersburg — less than 10 thousand dollars per person, which is exceedingly low taking into account the geographical and geopolitical location of the regions. In the Leningrad region the specific value of foreign economic activity is a little over 10 thousand dollars per person. The imbalance of import and export values is registered in the Kaliningrad region only (im-

port volume exceeds the export volume); the correlation of import and export values in other maritime regions is more balanced.

The values of resource potential are of negligible importance (with regard to the world level) in all the maritime regions of the Baltic Sea. Some mineral resource deposits occur in the maritime territories and bordering aquatoria of Gulf of Bothnia, the Kaliningrad region and Poland. There are almost no natural resources in St. Petersburg; the main resources of the Leningrad region are bauxites, phosphates, oil-shale, moulding and glass-melting sand, carbonaceous rocks for metal industry and cement production, coal clay and cement clay. The most significant natural resources of the Kaliningrad region are petroleum reserves in the shelf area, which are being developed and used.

The transport infrastructure is rather developed in all the maritime regions of the Baltic Sea; the most developed are the road and the railroad systems of Denmark and the South region of Sweden. The least developed is the road system of the Leningrad and Kaliningrad regions, and the Bothnian Bay region of Finland. St. Petersburg, in its turn, is the largest transportation hub of the Russian Federation and the Baltic Sea countries; it consists of 12 railroad and 11 motor trunks.

As for the size of sea and ocean-going ship fleets, two of them are prominently distinguished — the fleets of the Baltic regions of Denmark and Germany with total shipping around 20 mln GRT. The total shipping less than 1 mln GRT is registered with the sea industrial and port complexes of Estonia, Lithuania, the Kaliningrad region and the Bothnian Bay region of Finland. The total shipping of St. Petersburg and the Leningrad region sea port and industrial complexes is around 2 mln GRT.

As for the cargo tonnage of sea port and industrial complexes, the South region of Sweden and the Leningrad region play the leading role in the Baltic region with over 100 mln MT. The least developed in this respect is the Kaliningrad region, with the value of cargo tonnage a little less than 10 mln MT. The St. Petersburg sea port has regular connections with 18 other ports of the world and is nowadays rapidly developing with annual cargo tonnage exceeding those of the sea port and industrial complexes of Poland. The rapid development there is ensured by the active sea ports of Primorsk, Ust-Luga and Vyborg.

In most of the maritime regions of the Baltic Sea, the annual commercial catching level ranges from 50 to 70 mln dollars. But in the Leningrad region and St. Petersburg the catching level is less than 1 mln dollars, besides a decline in fishery industries of the Leningrad region is obvious.

The tourism industry of all the maritime regions of the Baltic Sea is best developed in St. Petersburg and Poland, where the annual business profit of the tourism industry is more than 1 billion dollars; it is rather developed in the Baltic region of Germany with 0.7 billion dollars; the Leningrad and Kaliningrad regions make use of their touristic potential to a much lesser extent, thus the tourism industry produces there less than 20 mln dollars profit.

The geographic and demographic indicator defined as a population density parameter can help to evaluate the demographic potential of the development of a marine economic complex in a maritime region and reflect the

level of potential participation of the region entities in the sea and industrial port complex. Low rates of the population density are registered in the Bothnian Bay regions of Finland and Sweden, Estonia and Latvia, which speaks for the low geographic and demographic potential and hampered development of maritime activities in these regions. The highest rates are registered in St. Petersburg and the Leningrad region, which stems from the territorial location of a metropolitan area and most of large settlements of the Leningrad region in the vicinity of the Gulf of Finland.

The values of the living standard indicators accepted for a country as a whole reflect a high level of social development in all the countries of the Baltic Sea region (0.8). The smallest values of the indicators are registered in the Baltic states, Poland and Russia — less than 0.9. The same goes true with the Gini indicator: the performance in the Russian Federation is 42.3, in the Baltic States and Poland around 35, and in the countries of “old Europe” less than 30, which shows strong stratification of the Russian society with respect to the annual earnings.

As for the level of replacement, the birth rate slightly exceeds the death rate only in Finland and Denmark. In other maritime regions of the Baltic Sea the death rate is higher and even much higher in the Leningrad region where a natural decline in the population is almost 8%. The absolute values of the birth rate are less than 9% in the Baltic region of Germany, and less than 10% in Lithuania and the Leningrad region, while the highest birth rate is registered in the Kaliningrad region and St. Petersburg — 11%. However, the highest birth rate is registered in the same regions of the Baltic Sea and accounts for more than 14%; and the most favourable situation is registered in Finland and Poland — a little less than 10%.

As for the level of unemployment, the Baltic States and the Kaliningrad region are distinguished — with more than 10% of unemployment level among the working-age population (more than 17% in Latvia). Contrary to that, the level of unemployment in Denmark and St. Petersburg is the lowest — less than 5%. The Leningrad region has the medium performance of a little more than 7%.

In general, the most favourable social and economic situation in the maritime regions, and sea industrial and port complexes of the Baltic Sea is present in the Baltic region of Denmark (an evaluated social and economic factor of marine potential is more than 0.43) and in the South region of Sweden (the potential is little less than 0.4). It is interesting that both of these regions are in the vicinity to Danish straits — the three channels connecting the Baltic Sea to the North Sea. The most unstable situation is registered in the Baltic States and in the Kaliningrad region (the potential is less than -0.4) and the lowest performance is in Latvia (-0.54). The situation in St. Petersburg is slightly better — a little less than -0.3 and a little less than -0.15 respectively.

Compared to the evaluation of socio-economic impact on the marine potential of maritime regions performed on 1 July 2008 [1], there are no qualitative changes. However, the stratification between the more advanced regions and industrial and sea port complexes in the Baltic Sea (the Baltic regions of Germany and Denmark, the South region of Sweden), and

the less developed regions and sea industrial and port complexes of the Baltic States and the Kaliningrad region, the values of which have significantly decreased, has become even more pronounced. To a large extent, the given situation is caused by the world economic crisis, which affects the developing economies in the first place and has a lower impact on the developed economies of “old Europe”.

The guidelines in the long-term planning and strategic opportunities of economic development of Russia’ maritime region and sea industrial and port complexes of the Baltic Sea can be set up as follows:

- The development of St. Petersburg, the Kaliningrad and Leningrad regions is associated with the GRP growth and foreign economic activity in the first place. Consequently, the economic perspective of the Russian maritime regions and sea industrial and port complexes in the Baltic Sea is determined by the implementation of several investment projects (the construction of a new port in Ust-Luga; an automotive-manufacturing plant in Vyborg; the construction of the Baltic transport system comprising pipe lines, ports, access roads; the development of international road networks; the construction of new and the upgrading of the existing transportation port complexes; the construction of the Gyazovets-Vyborg gas pipeline, etc.).

- The establishment of the congenial investment climate is necessary, as the level of investment attractiveness of the Russian regions and sea industrial and port complexes is the lowest in the Baltic Sea region. The substantial reform of regulatory framework at a regional level is required.

- It should be noted that the level of transport infrastructure development in the Kaliningrad and the Leningrad regions is also the lowest amongst the maritime regions of the Baltic Sea, which significantly retards the development of general economic potential. It refers to the Leningrad region in particular as its transport infrastructure is developed to a certain extent only around St. Petersburg. Investment into the development of the transport network has to become a strategic priority in the Leningrad and Kaliningrad regions.

- Further development of sea shipment capacity including the Russian fleet in the Baltic Sea is required; it will contribute to the accelerating growth of Russian marine potential in the Baltic Sea and to current positive trends in realization of potential of Russian sea industrial and port complexes. In the Kaliningrad region, with its geopolitical location and respective problems with cargo transshipment and conveyance, special attention should be paid to the increase of passenger throughput and to the realignment of sea and industrial port complexes to passenger transportation, as well as to the use of geographical location of the region in servicing small coastal vessels.

- In the Kaliningrad region special attention should be paid to the realization of the tourist potential, including its historic and cultural potential as well as its recreational potential (Curonian Spit National Park, beach-related recreational areas and health-resort treatment in Pionersk, Zelenogradsk and Svetlogorsk). At the moment, the level of development of tourist and recreational industry in the region is the lowest in the Baltic Sea region. In the Leningrad region the situation is almost the same — the tourism industry is in its infancy there.

- The speedy recovery from the crisis in the commercial fishing industry of the Leningrad region is urgently required; in a short time the industry has

failed and is now the most backward (except for St. Petersburg) in the Baltic Sea region. Closer cooperation with the Kaliningrad region is a potential anti-crisis measure as the situation in this industry in the Kaliningrad region is brighter.

- As for the social sustainability, it is necessary to maintain positive trends in the employment market in St. Petersburg and the Leningrad region which are able to maintain a rather low level of unemployment. The situation in the Kaliningrad region is more problematic and has to be resolved.

- As for the natural population growth which reflects the social situation in the region, it deserves special attention. There are some positive shifts which, however, mainly concern the birth rate. The decrease in mortality index is insignificant and requires the massive improvement of the social security system and healthcare system in all the entities of the Russian Federation and in the Baltic region as a whole.

References

1. Gogoberidze, G.G. 2009, Baltijskoe more: primorskie regiony i ih morehozjajstvennyj potencial [Baltic Sea: coastal regions and marine economic potential], *Ekonomicheskie strategii*, no. 8, p. 150—155.
2. Gogoberidze, G.G. 2008, Indikatornye metody kak instrument kompleksnogo analiza i ocenki primorskih territorij [Indicator as an instrument of a comprehensive analysis and assessment of coastal areas], *Vestnik INZhEKONA*, Ser. Ekonomika, no. 3, Saint-Petersburg State University of Engineering and Economic, p. 142—151.
3. Gogoberidze, G.G. 2007, *Kompleksnoe regionirovanie primorskih territorij Mirovogo okeana* [Integrated regionirovanie coastal areas of the World Ocean], Saint Petersburg, Izdatelstvo RGGMU, 396 p.
4. Gogoberidze, G.G. 2009, Ocenka demograficheskogo morehozjajstvennogo potenciala primorskih regionov (subektov) Rossijskoj Federacii [Evaluation of demographic marine economic potential of coastal regions (subjects) of the Russian Federation], *Regional'najajekonomika: teorija i praktika*, no. 1, p. 38—45.
5. Gogoberidze, G.G. 2008, Ponjatie i suwnost' morehozjajstvennogo potenciala pribrezhnyh zon i primorskih territorij [Concept and essence of marine economic potential of coastal zones and coastal areas], *Problemy sovremennoj ekonomiki*, no. 2, p. 266—270.
6. Gogoberidze, G.G. 2008, Struktura i svojstva morehozjajstvennogo potenciala primorskoj territorii [Structure and properties of marine economic potential of coastal areas], *Vestnik Rossijskogo gosudarstvennogo universiteta imeni I. Kanta*, no. 3, p. 75—81.
7. Morskaja doktrina Rossijskoj Federacii na period do 2020, *Official Website of the Government of the Russian Federation*, available at: <http://www.morskayakollegiya.ru/legislation/doktrina/> (accessed 16 August 2011).

About the authors

Prof. George G. Gogoberidze, leading research fellow, Department of Economics and Management, Russian State Hydrometeorological University (RSHU).

E-mail: gog_icz@rshu.ru

Dr Maria A. Mamayeva, Head of the International Relations Office, Russian State Hydrometeorological University (RSHU).

E-mail: mamaeva@rshu.ru