

THE KALININGRAD REGION



HUMAN RESOURCE EFFICIENCY AS A DEVELOPMENT FACTOR FOR THE KALININGRAD ECONOMY

G. Fedorov *



Various studies of economic and geographical relations in Russian regions often overemphasise the role of economy. However, the quality and quantity of human resources is one of the key factors behind distribution and development of production. Human resources are of even more importance in the Kaliningrad exclave. This paper aims to increase understanding of the role of human resources in the economic development of the Kaliningrad region.

The study uses the cohort component method, scenario-based forecasting of the development and application of human resources, and econometric calculations of the comparative efficiency of human resources application across a range of economic activities.

The author puts forward a number of recommendations for a better application of labour resources through sectoral restructuring of economy (which requires a higher value-added standard and has to be consistent with local natural, human, and innovation resources) and through improvement of the professional training system.

Key words: human resources, economic development, economic and demographic relations, Kaliningrad region, economy restructuring

* Immanuel Kant Baltic Federal University
14 A. Nevski St., Kaliningrad,
236041, Russia.

Submitted on November 20, 2014.

doi: 10.5922/2079-8555-2015-1-6

© Fedorov G., 2015

Introduction

The relation between labour resources and the economic development has quantitative and qualitative aspects. In both cases, this relation is bilateral. The quantitative aspect consists in the fol-

lowing. On the one hand, the economic growth is associated with an increasing need for labour resources and, vice versa, crisis phenomena in the economy reduce this need. On the other hand, the availability of labour resources is a factor behind the development of labour-intensive industries.

The qualitative relation is associated with the economic demands for a certain occupational composition and training level of employees. Vice versa, the availability of employees with certain level and quality of training is a factor contributing to the development of certain industries.

Labour resources as a factor of economic development are not always taken into account. When identifying the priorities of regional development, the need for such resources is considered after everything else. If the number of specialists in a certain region is not sufficient for the forecasted number of new jobs, this problem is usually expected to be solved through attracting specialists from the other Russian regions and the CIS countries. The same holds true for the educational and occupational composition of labour resources.

All the above deficiencies are peculiar to the forecasting of socioeconomic development in the Kaliningrad region. However, recently attention has been paid to the occupational structure of specialist training, which does not correspond to the needs of the regional economy and requires substantial improvement.

For the exclave Kaliningrad region, the economic and demographic problems and the alignment of the development of economy and labour resources are especially relevant, since it is not only territorially isolated from the other Russian regions, but also is also difficult to access (travel by land between Kaliningrad and the other regions of Russia requires a visa permit of other states). This article makes an attempt to show the exceptionally important role of human resources as a factor of the regional economy's development and outline the ways to solve the economic and demographic problems of the Kaliningrad region.

The economic and demographic development of the region since the 1990s

In the 1990s, a deep economic crisis became the decisive factor behind the relation between the economy and labour resources in Russia as a whole and the Kaliningrad region in particular. In the Kaliningrad region, production in almost all manufacturing industries and most areas of agriculture came to a halt. Unsuccessful privatisation destroyed the region's highly efficient fishing industry; more than two thirds of privatised vessels started to sail under foreign flags or were sold as scrap. Large mechanical engineering facilities went bankrupt; the liquidation of the pulp and paper industry — which completed in the 2000s — was launched. The unemployment rate

skyrocketed due to mass immigration from the CIS countries (first from the Baltics and the Caucasus and later from Kazakhstan and Central Asia) and the eastern regions of the country (fig. 1).

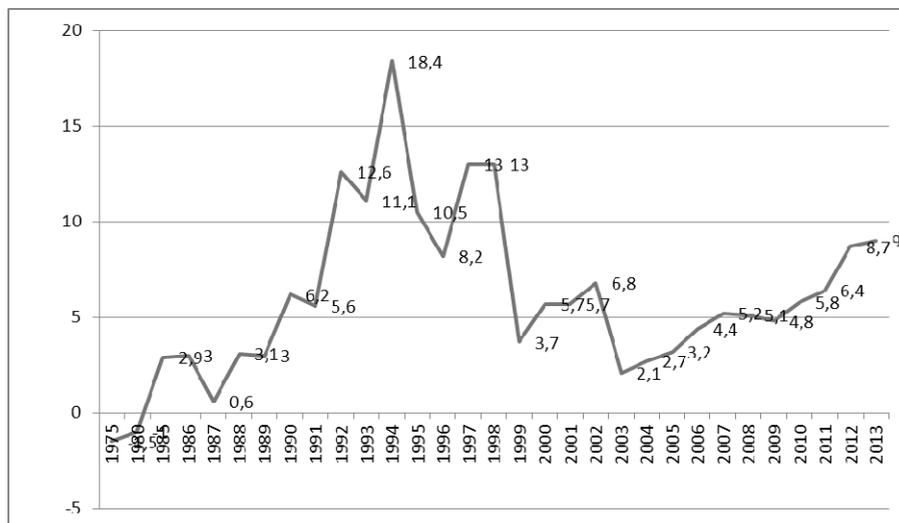


Fig. 1. Net migration in the Kaliningrad region, 1975—2013, thousand people per year

Compiled by the author based on [4; 8].

Qualified workers and highly educated specialists had to turn into ‘shuttle’ and small traders. This resulted in an emergence of a vast (in comparison to most other Russian regions) ‘grey’ economy, which was also stimulated by the regime of the *Yantar* free economic zone. At first, the provision on the *Yantar* FEZ (1991) [12] permitted duty free import of excise goods (such goods were transported in large amounts to the other Russian regions). The vocational education system curtailed the training of qualified workers due to the closing of most large and medium enterprises and a reduction in production at the remaining ones, the disintegration of kolkhozes and sovkhozes, and a decrease in the volume of construction.

The development of a new economy commenced in the Kaliningrad region after the default of August 17, 1998, which increased the Russian market’s demand for goods produced in the Kaliningrad region from imported raw materials and semi-finished products. The latter could be bought quite cheaply due to the customs privileges granted by the 1996 Law on the Special Economic Zone [10]. This process was also facilitated by a significant number of the unemployed, which reduced only in the early 2000s as the employment rate increased following the establishment of numerous import substitution companies (fig. 2). Processing facilities created jobs that did not require high qualification.

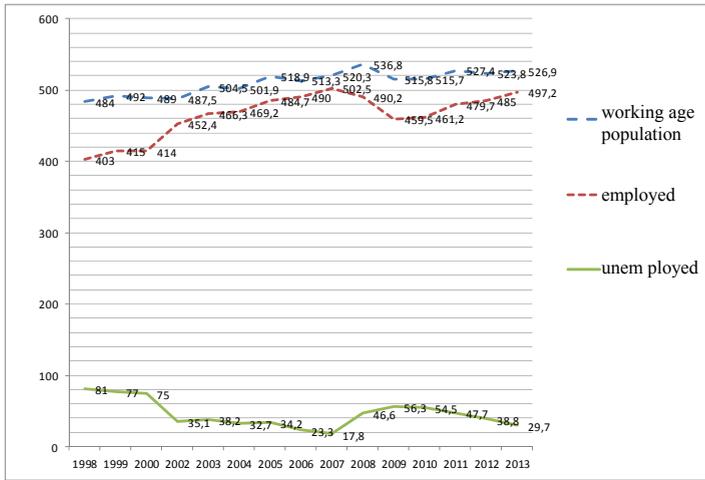


Fig. 2. Changes in some economic and demographic indicators in the Kaliningrad region, 1998—2013, thousand people

Sources: [6—8].

An increase in the employment and a decrease in the unemployment rate had been observed until 2008. Then these processes were interrupted by the global economic crisis (fig. 3). In 2008 and 2009, the number of the employed declined by 43 thousand people, and that of the unemployed increased by 38 thousand people. In 2010—2013, the number of the employed increased but did not reach the 2007 level; the number of the unemployed reduced but was higher than in 2007. In 2014, the economic situation started to deteriorate again, the employment rate to decrease, and the unemployment rate to grow.

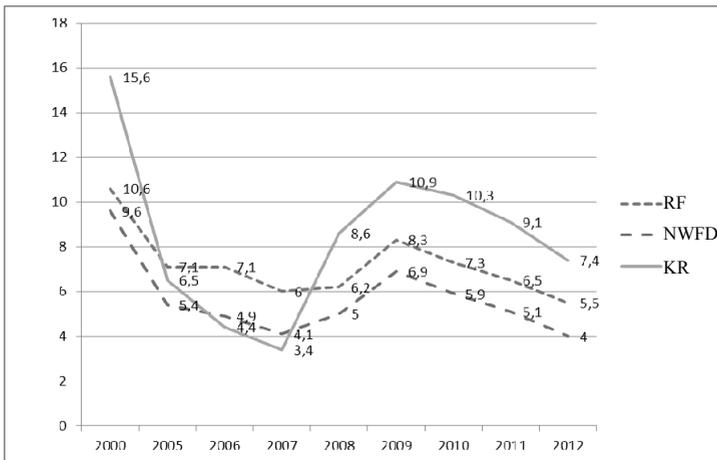


Fig. 3. Changes in the unemployment rate in the Russian Federation (RF), Northwestern federal district (NWFD), and the Kaliningrad region (KR), per cent
Source: [13].

The economic and demographic processes in the Kaliningrad region differ from the national trends. In the 2000s, during the economic growth, the economic and demographic situation in the Kaliningrad region (a high employment and low unemployment rate) was improving faster than in the country as a whole. In 2006—2007, the overall unemployment rate, which was regularly higher than the national average, became lower than that (fig. 3). During the decline in production (which affected the Kaliningrad region much stronger than the other regions both in the 1990s and 2008—2009), the economic and demographic situation was characterised by a rapid reduction in the number of the employed and an accelerated increase in the unemployment rate.

In comparison to the national average, the Kaliningrad region was characterised by more intensive use of human resources in the economy in the 2000s, although earlier it had been lower than that (fig. 4, 5). Partially, it was a result of a more favourable age and sex structure of the regional human resources (due to immigration). Another factor is a higher rate of increase in the number of new jobs in the regional economy.

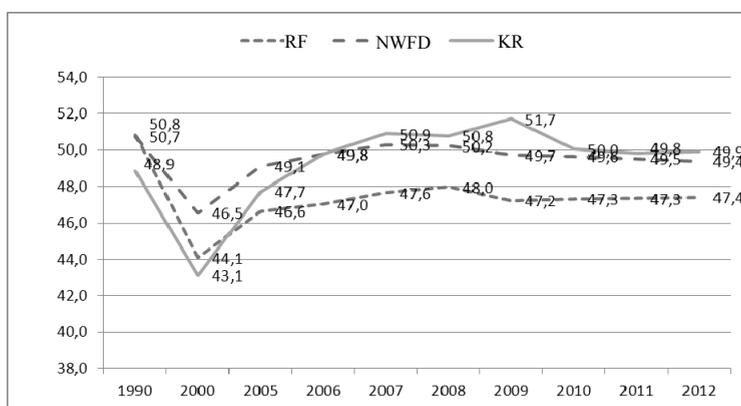


Fig. 4. The percentage of the employed in the total population

Source: [13].

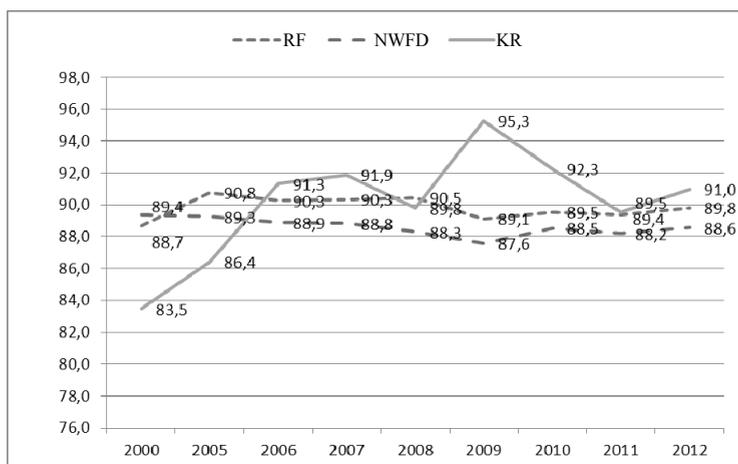


Fig. 5. The percentage of the employed in the working age population

Source: [13].

Current economic and demographic situation and the economic development of the region

In 2015—2106, the crucial economic and demographic problem of the Kaliningrad region is associated not only with the overall problems of the Russian economy but also with the fact that the regional decline in production will be much deeper than the national average, as it has happened before. A major concern is the abolition of the SEZ customs privileges regime, which was introduced in 1996, in 2015. This will be accompanied by the abolition of the regime's integral element — the value added requirement (15 or 30% depending on the type of produce) for acknowledging the products manufactured from imported raw materials and semi-finished goods as originating from Russia [11] and thus subject to duty-free importation in the country.

Despite the existing privileges, in 2013, the losses of unprofitable enterprises exceeded the profits of profitable ones. Moreover, the customs privileges granted to unprofitable companies amount to several tens of billions of roubles. Their losses — in case they continue to function after the abolition of privileges — will increase significantly. Therefore most of such companies are not viable. It is extremely important to find a way out of the critical situation faced by the economy of the Russian exclave surrounded by the EU and NATO countries, the relations with which are far from perfect, whereas the improvement thereof can be expected only in distant future.

So far, the key question for identifying the priorities of the Kaliningrad region's development was what industries and processing facilities should be established to ensure the highest rates of the regional development (higher than the national average and that of the neighbouring countries) and attain the living standards of the Baltic region countries. It was discussed whether to develop import substitution or export production, how to ensure the economic security of the region, to what degree the role of Kaliningrad ports in catering for the Russian economic ties should be increased, how tourism should be developed, how many migrants from Russian regions and the CIS countries should be attracted, etc. However, the problem of sustainable development of the Kaliningrad region, which is strongly affected by the external effects, has not been solved. Therefore, there is a need for a radical change in the approach to identifying regional priorities. The key issues should be those of effective use of the natural, resource, and human potential of the region; creating jobs that would efficiently use the current human, research, and educational potential; and an increase in the capital/labour ratio and labour efficiency through creating an innovative economy.

To identify the most effective avenues of economic restructuring ensuring the best qualitative and quantitative results of the use of local labour resources (with a minimum net migration), a special study was conducted in 2014 at the request of the regional Ministry of Economy [14]. Moreover, the Immanuel Kant Baltic Federal University has launched a special project 'The development of the university's information and analytical system for

support for regional socioeconomic studies and its introduction in the research, education, and innovative activities at IKBFU'. One of the sections of this project is dedicated to population and human resources [5].

A study in the human resources of the Kaliningrad region (in the context of the demographic situation in Russia and the Baltic region) [9; 15—17] requires a comprehensive analysis of the regional economy as well as the modelling of its development [1—3; 18].

The analysis carried out in the framework of the two research projects showed that both the industry composition of the Kaliningrad economy and the performance of different industries differ significantly from the national average. The region's exclave position accounts for its lower than average labour efficiency (gross value added per employee). Another negative factor is the discrepancy between the economic specialisation and the conditions of regional development — the existing natural and labour potential, which has been under-developed. Moreover, not only individual companies, but also whole industries are not interconnected. The opportunities given by various forms of spatial organisation of production (specialisation and cooperation, development of multi-industry facilities and cross-industry clusters, etc.) are not used. As a result, value added chains are almost absent; the value added rate is rather low not only at the level of individual economic entities dominated by medium, small and micro-enterprises but also at that of industries. The 'import substitution' assembling companies, which emerged in the 1990s, do not require high qualification of employees, whereas the labour efficiency at the prevalent small and micro-enterprises with a low capital/labour ratio is not sufficiently high.

Among commodity producing industries, only agriculture, hunting and forestry, and fishing perform above the national average in terms of labour efficiency. The other industries lag behind the national average by 19—27%. The performance of the Kaliningrad market services industry is also lower than the national average. Only such non-market services as education and healthcare show better performance (by 9 and 2% respectively).

The gross value added rate at manufacturing companies is only 18.4%. It is especially low in such major manufacturing industries as production of electric appliances, electronics, and optical equipment (16.6%) as well as transport and related equipment (14.3%). As to labour efficiency, the Kaliningrad manufacturing industries lag behind the national average by 21%. Moreover, the output of different products varies significantly from year to year, which is a sign of a 'fragile' economy that is dependent on external institutional factors: the SEZ regime, the federal target programme for the region's socioeconomic development, and federal subsidies. The recent deterioration in Russia-EU relations, which was especially pronounced in 2014, affects the development of the exclave Kaliningrad region, whose economy is heavily dependent on foreign economic ties.

Most regional manufacturing companies target the Russian market using the 1996 SEZ regime. The food industry, production of electric appliances, electronics, and optical equipment, transport and related equipment, the furniture industry are the key import substitution efforts selling their produce in the other Russian regions. The food industry also caters for the regional needs, whereas some producing operations (dairies, fish processing) sell in-

ternationally. These industries account for more than half of those employed in manufacturing and 89% of the cost of shipped products. Most companies working within these three industries, as well as others, can become unprofitable after some of the SEZ privileges are abolished in 2016.

The products of the chemical industry (polyethylene, man-made fibres), metallurgy (ferrous and non-ferrous metals), light industry (rugs, clothes produced from customer-supplied materials), and shipbuilding (transport and military vessels) are exported alongside those of fishery. The total regional imports are ten times as great as exports. In 2013, Kaliningrad companies exported USD 1.6 billion worth of goods, whereas the value of shipped goods of local origin reached 342 billion roubles. Export accounts for 15% of the manufacturing output. However, the value of export includes not only the produce of manufacturing enterprises, but also that of extractive and agricultural industries. Therefore, the actual proportion of exported goods is not high.

Some products of the food, clothes, and printing industries, some types of equipment, and furniture are sold on the local market.

The objective of embarking on the path of innovative development is being attained very slowly in the Kaliningrad region. Only 11 regional companies conduct R&D accounting for 0.3% of similar companies operating in the country (a total of 3,566), their researchers account for 0.2% of the national total, whereas the region is home to 0.7% of the country's population. The region accounts for only 0.2% of invention patents and 0.5% of innovative technology spending. Three new technologies were developed in 2012 (0.2%). The region accounts for 0.5% of advanced technologies used in Russia. The innovative activity of companies is estimated at 5% against the national average of 10%. The proportion of innovative goods and services is 0.3%, whereas the national average is 8.0% [13].

The 2016 problem, which has crucial significance for the import substitution industries using imported raw materials and semi-finished goods, was faced by the Kaliningrad food industry much earlier — in 2014, after the Russian restriction on agricultural imports from the EU had been imposed. The problem of regional food security, which was earlier considered as merely hypothetical, entered the agenda. These factors add to the need for prompt restructuring of the regional manufacturing industry, a decrease in its dependence on the external raw materials market, and a reduction in the material/output ratio to lower the volume of transit via Lithuania, as well as the proportion of transport costs in the cost of products.

The deterioration in relations with the EU countries is dimming the prospects for increasing cargo transportation from/in the other Russian regions via Kaliningrad ports. The plans for increasing transit cargo traffic via Lithuania should be adjusted in favour of the Baltiysk-Ust-Luga ferry route and air transportation. Even if the current crisis is speedily overcome, the possibility of similar situations requires an examination of the ways to ensure the economic security of the Russian exclave.

A lack of production innovations in the Kaliningrad regions brings to the foreground the objectives of, firstly, developing production and innovation centres cooperating with the leading national research centres and, secondly, creating innovative knowledge-intensive companies producing expensive and transportable goods.

Among commodity producing industries, only agriculture, hunting and forestry, and fishing perform above the national average in terms of labour efficiency. Therefore, agriculture can become one of the “growth poles” of the Kaliningrad economy. Local production should replace the imported raw materials at many food production facilities, especially, livestock-breeding ones.

Deprived of SEZ privileges, the manufacturing industry will have to shift to the industries better suited to the local conditions. This will require cross-industry redistribution of human resources and corresponding retraining.

Construction is one of the priority areas (Kaliningrad is a 2018 FIFA World Cup host). However, it requires an increase in the number of employees, a qualitative change in the applied technologies, and extending and enhancing the qualification of construction workers and specialists.

The changed geopolitical conditions call for a revised concept for regional transport development with a focus on the qualitative rather than quantitative aspects.

It is not advisable to stimulate the production of market services. However, the hospitality industry requires support, since there is a need for new accommodation units for the 2018 World FIFA Cup. Moreover, there is a need to develop tourism areas associated with regional growth factors (medical, congress, cruise, and eco-tourism).

Large additional funding is required for the development of non-market services, especially, the innovative infrastructure, and research and innovation companies, since the regional level of innovative development is rather low. However, such fields as education and healthcare, whose regional performance is not below the national average, nevertheless require improvement, since the national average level is not satisfactory.

Restructuring of the economy and effective use of human resources

The economic aspect of targets and objectives of regional socioeconomic development should consist in an increase in the efficiency of the use of local human resources in view of the level of their professional education and qualification. Maximum labour efficiency should be ensured through a high capital/labour ratio and production innovations, which results in high cost effectiveness, salaries, and transfers to the budgets of levels. The efficiency of using human resources depends heavily on the long-term demand for certain occupations and qualifications (the latter should be improved to accommodate the technological advance). It concerns the formation of a dynamic economy that is resistant to negative external effects, which can be created only through maximising the effect of local factors of production deployment and development.

The key areas of improving the industry structure and operation organisation of *manufacturing companies* in the Kaliningrad region are, firstly, a reduction in dependence on imported raw materials and semi-finished goods —

a shift to Russian and preferably local sources. Secondly, there is a need to increase the value added rate of manufacturing companies through more extensive processing of raw materials at individual facilities and, especially, the development of value added chains through enhancing production cooperation, creation of cross-industry clusters and vertically-integrated structures. Thirdly, there is a need to use the funds received from the federal budget to compensate for the abolition of the provisions of the 1996 SEZ law and develop promising manufacturing areas through devising regional programmes for support for production restructuring. These areas include:

- support for innovative non-material-intensive industries;
- use and extensive processing of local raw materials;
- development of effective production, cooperation, and integration in agriculture;
- development of a fishing industry complex;
- development of an amber cluster;
- formation of a motor industry cluster ensuring an increase in value added in motorcar production;
- development of tourism infrastructure with a focus on medical and eco-tourism, and recreation of local residents.

However, the education system does not provide the region with a sufficient number of workers and specialists in the priority areas. Moreover, the training structure is not satisfactory in terms of education level proportions. In 2000—2012, the training of qualified workers reduced almost threefold; the number of vocational school graduates also decreased. However, the number of university graduates increased almost threefold in absolute numbers and 2.7 times per 10,000 of the employed population (see table). The result is the excessive level of higher professional education, since the economy does not create a sufficient number of jobs requiring higher education. This is a nationwide trend, thus the Russian Ministry of Education tries to solve the problem through training applied bachelors, whose curricula allow for mastering blue-collar jobs. Of course, this is a palliative measure. However, the problem of training qualified workers and specialists with secondary vocational education will be partially solved.

**Changes in the number of vocational school and university graduates,
Kaliningrad region, 2000—2012**

Training level	Graduates per 10,000 of the employed population					
	2000	2005	2009	2010	2011	2012
Qualified workers	127	114	72	92	80	46
Specialists with secondary education	70	75	73	71	63	63
Specialists with higher education	62	96	158	160	173	166

Calculated by the author based on [6—8].

The analysis of the economic and demographic situation in the region and the identification of priority areas of economic development made it possible to formulate recommendations for improving the industry-specific structure of training. It is suggested to launch new fields of study and professional retraining or update the existing ones to meet the needs of agriculture, tourism, amber industry, innovative industrial and manufacturing production, and construction.

Conclusion

The human resources of the Kaliningrad region are not used effectively in either qualitative or quantitative terms. The quantitative aspect consists in a higher than the national average unemployment rate. The qualitative aspect is associated with, firstly, the low labour efficiency peculiar to most industries, including manufacturing. Secondly, it is the discrepancy between the training level of employees and the actual needs of the economy, which results in increased and not always justified public expenditure on professional training. Thus, the employees do not meet the requirements of the economy.

The improvement of the economic and demographic relations in the region should pursue two goals. The first one is aligning the education system with the current and prospective needs of the economy (which would require a research-grounded regional development forecast). The second and even more important goal is the improvement of the economy's industrial composition.

The improvement of the economy's industry structure and the related changes in training specialists should be aimed at:

— restructuring of the regional economy, making the economy more dynamic and resistant to external shocks through more effective use of local resources — natural, human, educational, and innovative ones alongside an increase in the value added rate and introduction of advanced forms of production organisation and effective deployment;

— development of labour-saving facilities requiring high qualification of employees;

— a reduction in the number of jobs that do not require high qualification and training through using cutting-edge equipment and advanced technologies;

— more efficient use of labour resources, an increase in the capital/labour ratio, labour efficiency, and economic effectiveness;

— improvement of professional training in line with the regional needs (aimed at enhancing the level of training).

References

1. Voloshenko, K. Yu., Kuznetsova, A. L. 2014, Balansovaja model' upravlenija regional'nym razvitiem: problemy i novye vozmozhnosti dlja specificheskikh ter-

ritorial'nyh uslovij [Balance model of regional development management: challenges and opportunities for specific site conditions], *Regional'nye issledovanija* [Regional studies], no. 3 (45), p. 126—135.

2. Gareev T. R., Yeliseeva N. A. 2014, Commodity flow model for an exclave region: Rent-seeking in the 'transitional period' of the special economic zone, *Balt. Reg.*, no. 1 (19), p. 54—68. DOI: 10.5922/2079-8555-2014-1-5.

3. Gimbitsky K. K., Kuznetsova A. L., Fedorov G. M. The development of Kaliningrad regional economy: A new stage of restructuring, *Balt. Reg.*, no. 1 (19), p. 41—53. DOI: 10.5922/2079-8555-2014-1-4.

4. *Demograficheskij ezhegodnik* [Demographic Yearbook]: 2010, 2010, Kaliningrad, 80 p.

5. *Informacionno-analiticheskij portal BFU im. I. Kanta. Jekonomika i upravlenie* [Information Analysis Portal IKBFU. Economics and Management], available at: <http://science.kantiana.ru> (accessed 11.11.2014).

6. *Kaliningradszkaja oblast' v cifrah* [Kaliningrad Region in Figures]: 2002, 2002, Kaliningrad, 331 p.

7. *Kaliningradszkaja oblast' v cifrah* [Kaliningrad Region in Figures]: 2007, 2007, Kaliningrad, 238 p.

8. *Kaliningradszkaja oblast' v cifrah* [Kaliningrad Region in Figures]: 2013, 2014, Kaliningrad, 53 p.

9. Kuznetsova, T. Yu., Fedorov, D. G. 2008, Demograficheskaja differenciacija stran Baltijskogo regiona [Population differentiation of the Baltic region], *Vestnik Immanuel Kant Baltic Federal University*, no. 1, p. 45—52.

10. *Ob Osoboj jekonomicheskoy zone v Kaliningradskoj oblasti: Federal'nyj zakon ot 22 janvarja 1996 g. № 13-FZ* [On the Special Economic Zone in the Kaliningrad Region: Federal Law of January 22, 1996 № 13-FZ], 1996, *Rossiyskaya Gazeta*, 30 January.

11. *Ob Osoboj jekonomicheskoy zone v Kaliningradskoj oblasti: Federal'nyj zakon ot 10 janvarja 2006 g. № 16-FZ* [On the Special Economic Zone in the Kaliningrad Region: Federal Law of January 10, 2006 № 16-FZ], 1996, *Rossiyskaya Gazeta*, 19 January.

12. *Polozhenie o svobodnoj jekonomicheskoy zone v Kaliningradskoj oblasti (SJeZ «Jantar')*. *Postanovlenie Sovmina RSFSR ot 25.09.91 № 497* [The position of the free economic zone in the Kaliningrad region (SEZ "Yantar"). Resolution of the Council of Ministers of the RSFSR of 25.09.91 № 497], 1991, available at: <http://www.zakonprostr.ru/content/base/226> (accessed 10.10.2014).

13. *Regiony Rossii: Social'no-jekonomicheskie pokazateli* [Regions of Russia: Socio-economic indicators]: 2013, 2013, Moscow, 990 p.

14. Scenarnyj prognoz formirovanija i ispol'zovanija trudovyh resursov Kaliningradskoj oblasti s uchetom sravnitel'noj jekonomicheskoy jeffektivnosti razlichnyh variantov razvitiya regiona po prioritetyim vidam jekonomicheskoy dejatel'nosti. BFU im. I. Kanta [Forecast Models of formation and use of labor resources of the Kaliningrad region, taking into account the relative cost-effectiveness of different options for the development of the region in priority economic activities. IKBFU], 2014, *Goskontrakt № 02/2014 ot 24 nojabrja 2014 na vypolnenie NIR* [Government Contract № 02/2014 of 24 November 2014 on the implementation of scientific research], Kaliningrad, Immanuel Kant Baltic Federal University.

15. Fedorov, D. G. 2010, Jekonomiko-demograficheskij prognoz i perspektivy obespechennosti jekonomiki Kaliningradskoj oblasti trudovymi resursami [Economic and demographic outlook and the prospects for the economy of the Kaliningrad Region Human Resource], *Vestnik Immanuel Kant Baltic Federal University*, no. 3, p. 53—59.

16. Fedorov, G. 2011, La region de Kaliningrad, future “couloirs de developement”, La Resurgence de la Russie? *AGIR*, no.45, Fevrier, p. 97—110.

17. Fedorov, G. 2014, The concept of geo-demographic situation and geo-demographic typology of the subjects of the Russian Federation. In: Shimańska, D. and Środa-Muravska, (ed.) *Bulletin of Geography., Socio-economic Series*, no. 25, p. 101—114. DOI: <http://dx.doi.org/10.12775/BGSS.2014.032>.

18. Fedorov, G., Korneevets, V., Zverev, Yu. 2011, Kaliningrad oblast of Russia in the transborder region South-Eastern Baltic, *Coastal Regions*, no. 19, 68 p.

About the author

Prof. Gennady Fedorov, Director of the Institute of Nature Management, Spatial Development, and Urban Planning, Immanuel Kant Baltic Federal University, Russia.

E-mail: Gfedorov@kantiana.ru