

Features of the Spatial Socio-Economic Systems Development in the North Caucasus Federal District

¹Alexey N. Gerasimov, ¹Yevgeny I. Gromov, ²Svetlana A. Levchenko,
¹Oksana P. Grigorieva and ³Natalia P. Oboturova

¹Stavropol State Agrarian University, Stavropol, Russia

²Branch of the Belgorod University of Cooperation, Economics and
Law Stavropol Institute of Cooperation, Stavropol, Russia

³North-Caucasian Federal University, Stavropol, Russia

Abstract: Authors have developed the research methodology for surveying the status and future considerations of the North Caucasus Federal District regions, identified constraining and motivating factors, produced definition of typology of the macro regional subjects in accordance with the results of the multidimensional bloc-based (economic, social, resource and industry-specific) approach in evaluation of generalizing static and dynamic indicators. This allowed authors to qualitatively describe the current level (highly-developed, moderately developed, developing and low-developed) and the rate (strong, moderate and noticeable) of socio-economic development of the regions for both Russian Federation (RF), as a whole and the North Caucasus Federal District (NCFD), in particular.

Key words: Socio-economic system • Multi-criteria spacial dynamic evaluation • The asymmetry of regional development • Spatial polarization

INTRODUCTION

Enhancement in differentiation of regional development [1-3] has led to the fact that today it has become quite difficult to make an adequate assessment of the socio-economic development of the regions [4-6]. Conventional analysis techniques, used in regional studies, evaluations and forecasting does not allow one to swiftly take into account changes in the internal and external environment of socio-economic systems [7-9]. An important requirement for dynamic and effective development of spatial socio-economic systems in the regions is availability of sufficient, timely and reliable information about the operating conditions [10-12], peculiarities of the regional development [13,14], and means and methods for solving relevant objectives [15]. Conducting of social-economic and resource-industry evaluation of the regional development will allow one to develop the relevant managerial decisions to reduce the polarization of the socio-economic space, consider modalities of the regional policy implementation, as well

as contribute to consideration of development strategies. The need for scientific and practical solutions to the problems of regional socio-economic development acknowledges the relevance of the present study.

MATERIALS AND METHODS

Authors suggested to classify functionality problems of spatial socio-economic systems based on three problem-oriented model blocs: economic, social and institutional; as well as to identify the tools for their targeted solutions (Fig. 1). Generalization of functionality problems in socio-economic systems and specification of regional development, conducted by authors, emphasize the need to improve methodological approaches to the study of regional systems development status and prospects, as well as to define their spatial dynamic typology.

Authors have proposed the research methodology to study the status and development prospects for different types of regions, allowing one to define typology of the

Corresponding Author: Alexey N. Gerasimov, Stavropol State Agrarian University,
355017, Russia, Stavropol, Zoo Technical Lane, 12.

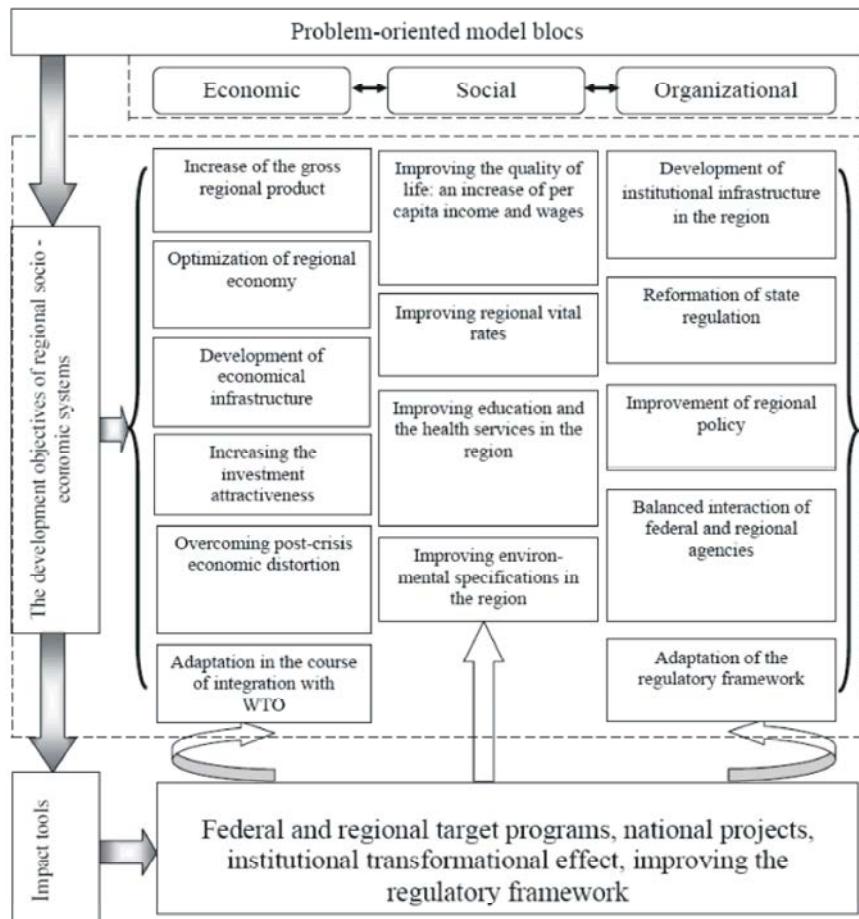


Fig. 1: Classification of the functionality problems, development objectives of the regional socio-economic systems and the tools for targeted impact

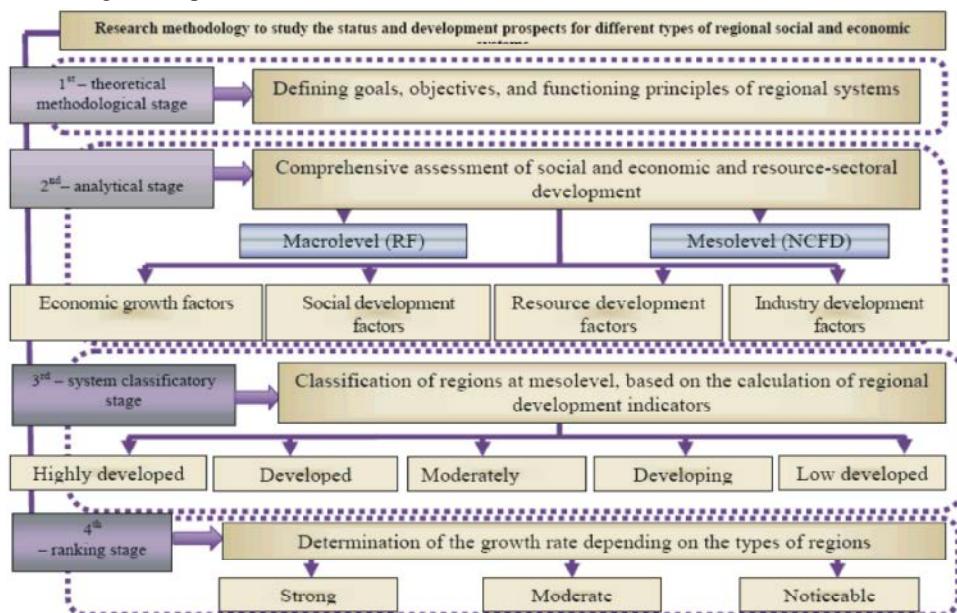


Fig. 2: Research methodology to study the status and development prospects of different types of regional socio-economic systems

subjects at the mesolevel and to determine the development gradation of the selected types of regions, based on integrated assessment of socio-economic and resource industry-specific development of the systems (Fig. 2).

Main Part: Integrated assessment of socio-economic and resource-sectorial development of macro-region allowed authors to make the following statements.

- Spatial analysis of the main indicators of the economy bloc shows that GRP growth in the regions of the NCFD in 2012 amounted to 3.5% that is caused due to the following motivating factors: increase in volume of shipped in-house produced goods by 20.3%, increase of industrial production index by 10%, increase in balanced financial result by 2.5 times, increase in regions' profits by 49.6% as compared with 2011. However, in absolute terms, the GDP per capita in the NCFD regions is less at average of 65% as compared with the national average that is caused by the following constraining factors: low product ratio in manufacturing industries (less than 15%, whereas 19% for the RF), high unemployment (16.9% in the NCFD regions, while on average 7.5% in the RF), high percentage of employment in low-paying economy sectors (up to 65% in comparison with 50% and lower in the RF).
- The results of the social development analysis, carried out at the macro- and mesolevels, revealed that the North Caucasus region is a country's leader in terms of natural population growth, whose main motivating factors are the increase in birth rate (29% in 2012 as compared to 2008), the marriage rate (25%) and the reduction in lethal level by 8.8% (5.3% in RF). The constraining factors in social development of the NCFD include the following: large proportion of the population with incomes below the subsistence minimum (around 25% higher than that in the RF); low level of economic activity of the population in NCFD regions (6-15% lower as compared with the national average); per capita income in the NCFD regions is 30% below the national average.
- The analysis of the regional resource bloc parameters shows that the fixed assets value per employee in the NCFD is less than twice, as compared with the national average indicators. The main constraining factors are: low volume of investment resources in fixed capital, which in the NCFD regions is 2-2.5 times lower than that in other districts of the RF; low level

of enterprises innovation activity (35% lower as compared with the average national value); high degree of depreciation of fixed assets (46.1%) as compared with that in the RF (43%).

- Study of industry-specific indicators has shown that the industrial production index in the NCFD regions in 2012 was 107%, while agricultural production index was 103.6%. However, considering the absolute figures, it should be noted that in comparison with the average national values, the output of industrial products in the NCFD regions is 65% lower than average output in the RF, output of agricultural products is 20% lower and trade index is 26% lower.

In accordance with declared research methodology for determining status and development prospects of regional socio-economic systems within the 3rd system classificatory stage, it is necessary to determine the type of the NCFD regions by generalizing the proposed criteria that characterize the level of social, economic, resource and industry-specific development of the spatially-localized systems. At 4th ranking stage one needs to assess the intensity of such development.

Figure 3 presents in general form the definition of the district regions types in accordance with the developed methodology, which is based on multi-criteria spatially dynamic assessment of the development status and growth rate of the regional socio-economic systems.

As is shown in Fig. 3, the definition of typology of the NCFD regions is based on calculation of generalizing static and dynamic coefficients within four functional blocs - economic, social, resource and industry-specific, each including three computed criteria. The interpretation of the computed criteria has allowed authors to establish the current level and the rate of socio-economic development for the RF in general (Fig. 4) and for macro-region, in particular (Fig. 5).

The results obtained through the multi-criteria spatially-dynamic definition of typology of the NCFD regions, performed based on the RF level, allows authors to refer all the studied regions to developing ones. However, the Republic of North Ossetia shows steady development rate, while Stavropol Territory, the Republic of Ingushetia and Kabardino-Balkaria show moderate rate of development; at the same time, the Republic of Dagestan, Karachay-Circassian and Chechen Republics exhibit a significant development rate.

The proposed typology matrices of the NCFD regions can be used for developing and adjusting development strategies at the federal level, as well as when refining the medium-term development programs,

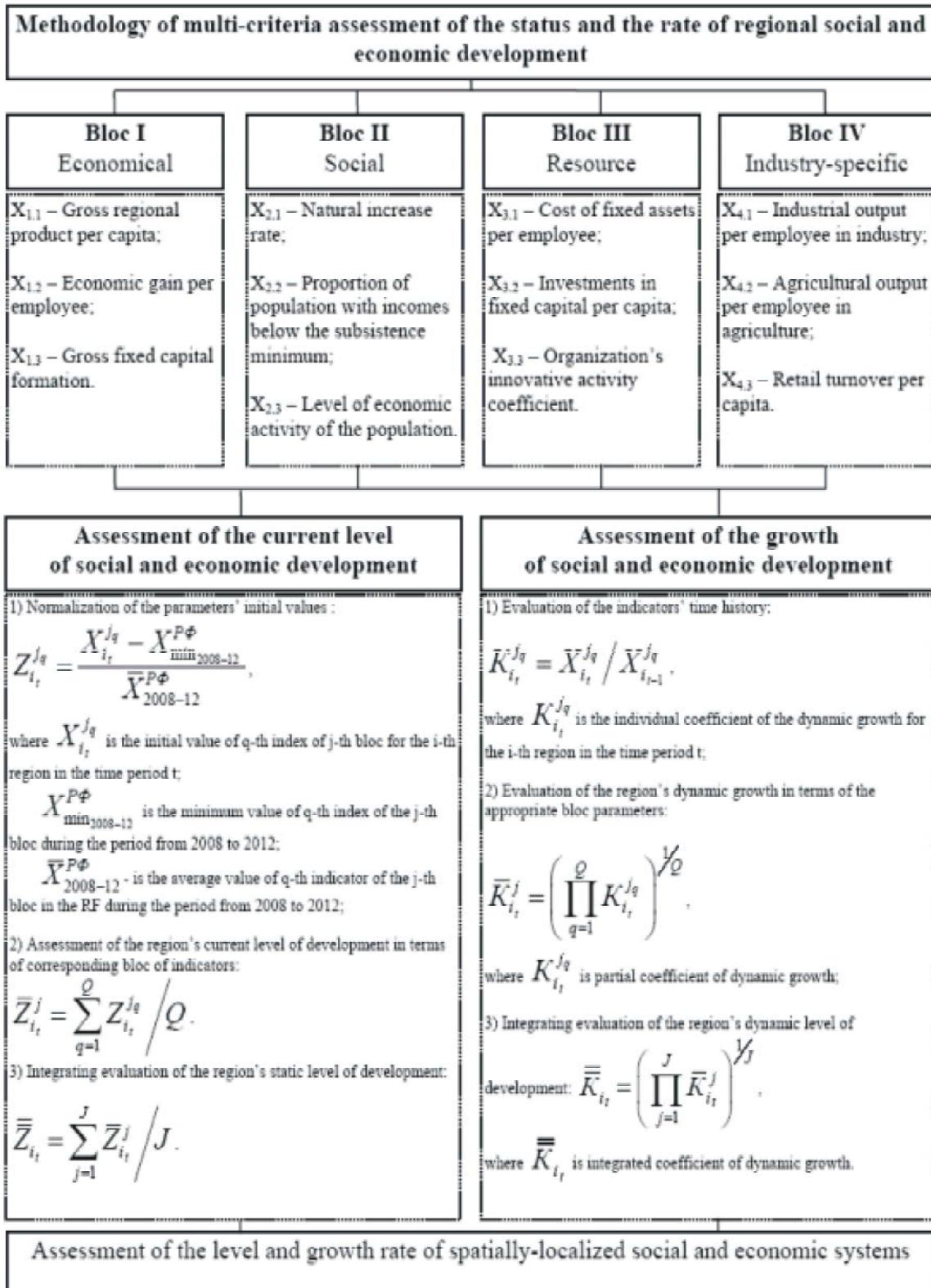


Fig. 3: Methodology of multi-criteria spatially-dynamic assessment of the regional socio-economic systems development status and growth rate

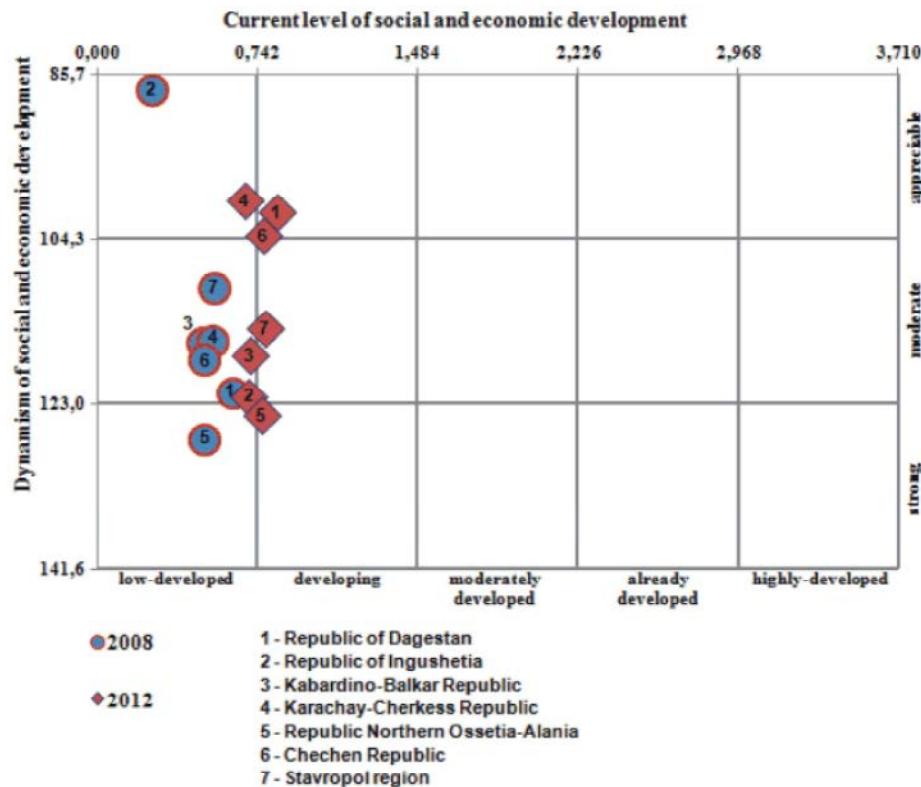


Fig. 4: Results of multi-criteria assessment of the status and the rate of socio-economic development of the NCFD regions at the RF level

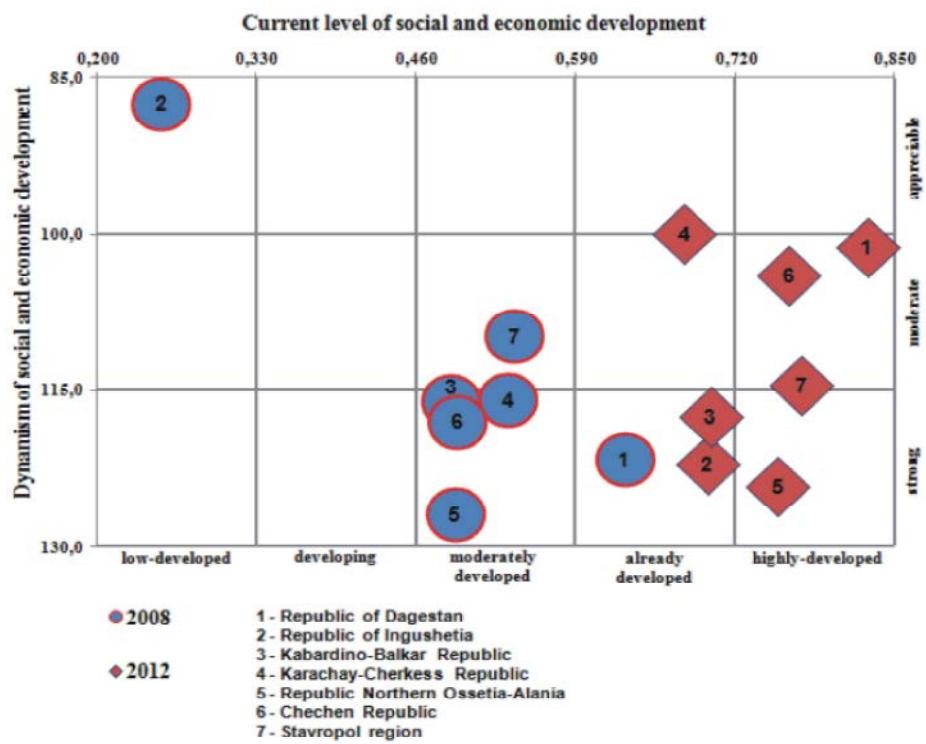


Fig. 5: Results of multi-criteria assessment of the status and the rate of socio-economic development of the NCFD regions at the macro-regional level

including industry-specific programs at the macro-regional level. The employment of statistical methods and data processing techniques increases their reliability, while retrospective empirical factual basis improves the representativeness of the results obtained.

Final Part: The performed study of the socio-economic development of the NCFD regions at the RF level and macro-regional level, based on the obtained statistical assessments, allow authors to establish a significant differentiation and spatial polarization of the regions under study.

Definition of the NCFD regions typology, based on use of generalizing static and dynamic factors in the context of economic, social, resource and industry-specific indicators blocs, allows authors to attribute the studied regions to developing ones; at that, the Republic of North Ossetia shows steady development rate, while Stavropol Territory, the Republic of Ingushetia and Kabardino-Balkaria show moderate rate of development; at the same time, the Republic of Dagestan, Karachay-Circassian and Chechen Republics exhibit a significant development rate.

CONCLUSIONS

In the course of studying the development peculiarities and operating conditions of spatial socio-economic systems in the North Caucasus Federal District, three problem-oriented model blocs were determined, namely, economic, social and institutional blocs. Such an approach necessitates the solution of the following strategic objectives: increasing gross regional product, improving quality of life and developing institutional infrastructure. This requires use of such leverage as formation of the federal policies and regional programs, the implementation of national projects, etc.

Spatial-localized analysis of the main indicators of the regional systems' status and development contributed to the identification of motivating and constraining factors. According to the authors, constraining factors are as follows:

- Economic bloc: low contribution of manufacturing industries output, high level of unemployment and high engagement rate in low-income economy sectors;

- Social bloc: high proportion of the population with incomes below the subsistence minimum and its low economic activity;
- Resource bloc: low volume of investment resources, low level of innovative activity and high depreciation of fixed assets;
- Industry-specific bloc: marginal product manufacturing volumes per employee in the industry and agriculture.

REFERENCES

1. Gerasimov, A.N., 2012. Regional features of the spatial socio-economic systems development. Stavropol, AHRUS.
2. Dzhukha, V.M., 2011. Corporate social responsibility: best practices and prospects in post-crisis economy. Recent Economic Crisis and Future Development Tendencies, Proceedings of the 7-th International Conference of Association of Economic Universities of South and Eastern Europe and Black Sea Region (ASECU), Rostov-on-Don, Russia, Rostov State University of Economics, Rostov-on-Don: 540.
3. Gerasimov, A.N., 2013. Development of the spatial localized economic systems in traditionally agrarian regions of the Russian Federation, the cluster approach. The Recent Trends in Science and Technology Management, London, 361: 40-55.
4. Tomilina, E.P., I.I. Glotova and I.P. Kuzmenko, 2013. Development of Integration Processes in the Traditional Sectors of Agriculture, Middle-East Journal of Scientific Research, 13(Socio-economic Sciences and Humanities): 178-182.
5. Levchenko, S.A., 2012. Problems of functioning and development of the regional socio-economic systems, Economics and Business, 2(25).
6. Dzhukha, V.M., 2013. The role of the region's development institutions in formation of investment attractiveness factors of the subject of the Russian Federation. Problems and prospects of cooperation development between countries of South-Eastern Europe within context of Black Sea economic cooperation: Collection of Scientific Works. Rostov-on-Don – Donetsk, pp: 128-131.
7. Parlinska, M., 2010. Statistical Methods in Economics. Warsaw University of Life Sciences, Poland.

8. Kazakov, M.J. and A.N. Bobryshev, 2012. Methodological approaches to the assessment of changes in indicators of community development in the context of institutional reform of the system of local self-government, Applied and Fundamental Studies, Proceedings of the 1st International Academic Conference, 2: 664, 608-614.
9. Uglitskikh, O.N. and J.E. Klishina, 2013. Modeling Interregional Inter-Branch Relations as an Element of Interaction Between the Branches of the Agro-industrial Complex, Middle-East Journal of Scientific Research, 13(Socio-economic Sciences and Humanities): 183-190.
10. Sukharev, O.S., 2013. Trajectories of institutional changes, transaction costs and time, Journal of Economy and Entrepreneurship, 2: 19-33.
11. Vasilyev, M.V., 2011. Strategic direction and guidance of socio-economic development of regions. National Interests: Priorities and Security, 2: 30-38.
12. Velychko, O.P. 2013. Logistical grounding for solutions in agribusiness by the method of integral estimation of selection criteria, Journal of Economy and Entrepreneurship, 2: 456-461.
13. Gladilin, A.V., E.I. Gromov and A.N. Gerasimov, 2010. Improvement of the economic mechanism of agricultural production, Stavropol, AHRUS: 440.
14. Gorin, S.V. and A.V. Pavlov, 2012. Harmonization of technological and product innovation in food processing industry enterprises, Journal International Scientific Researches, 3-4: 76-78.
15. Gerasimov A.N., 2013. Improvement of methodological support forecasting of key indicators of development of regional agro production system. 3rd International Scientific and Practical Conference "Science and Society", 2: 349, 232-242.